

# **ALCOHOL AND ILLICIT DRUGS RESEARCH PRIORITIES FOR CANADA**

## **A Background Paper**

**prepared for the**

## **Forum on Alcohol and Illicit Drugs Research in Canada**

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# 1. Introduction

While there has been much excellent Canadian alcohol and drug research<sup>1</sup>, the story of Canadian research in the field is also to a considerable extent a story of missed opportunities. In the illicit drugs field, the broad-ranging start on research in the era of the LeDain Commission and the Non-Medical Use of Drugs Directorate was allowed to peter out. In the alcohol field, there has been no coherent national research program, and provincial research efforts, except in one province, have been sporadic.

This forum, along with the commitments that have brought it about, offers a rare opportunity, a chance for Canadian research in the field to develop and fulfil its promise. The policy context is also very supportive, with the Canadian Institutes of Health Research (CIHR) willing to support alcohol and drug research and with the recent announcement of the renewal of Canada's Drug Strategy. In the course of implementing the Strategy, the Government of Canada will invest \$245 million over five years in order to reduce the supply and demand of drugs, highlighting among other things increased funding for research activities on drug trends to allow for more informed decision-making.

This paper is concerned with research, but “research” can have many meanings. Our focus is somewhat restrictive: we are concerned with specific studies, usually part of broader research traditions, that have a sound design and produce generalizable, replicable knowledge. Excluded, thus, are record-keeping and reporting *per se*, and routine monitoring or assessment. Such activities are indeed an important part of the quality assurance of health or social services or programs, but they are not considered here.

The paper will cover the following points:

- research priorities elsewhere: how do other countries approach alcohol and drug research, and what are their strengths and weaknesses?
- Canadian alcohol and drug research traditions
- Canada's special assets with respect to alcohol and drug research
- criteria for research priority-setting
- suggestions for research directions for discussion at the workshop.

Given the paper's purpose and the restricted time for preparation, we have seen our task as putting forward general characterizations and conclusions for discussion, without detailed scholarly references and analysis. Our attempt is to provide an overview rather than to be exhaustive, and we apologize in advance to those involved in parts of the Canadian research effort whom we have not mentioned or have slighted.<sup>2</sup>

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<sup>1</sup> The current paper restricts itself to alcohol and illicit drugs and excludes tobacco. This restriction reflects the definition of the topic of the meeting.

<sup>2</sup> We would like to thank several colleagues and anonymous reviewers for providing very helpful comments on prior draft versions of the paper.

## **2. Research priorities elsewhere**

We cannot describe research priorities for everywhere. We shall concentrate on a list of countries that are especially relevant to Canada, and/or have strong or notable programs. Naturally, the selection and description of countries has also been influenced by our detailed knowledge of and opinions about the situation.

### **United States**

The US invests heavily in alcohol and drug research. By far the largest investment comes from the federal government, particularly from the twin institutes of the National Institutes of Health – the National Institute on Drug Abuse (NIDA) and the National Institute on Alcohol Abuse and Alcoholism (NIAAA). But there are also substantial contributions from other federal government agencies (e.g., the Veterans Administration), from state governments (e.g., the New York Research Institute on Addictions), and from large private foundations (e.g., the Robert Wood Johnson Foundation). In addition, major resources are available to individual states and local communities for research-based dissemination, e.g., from the deferral agency SAMHSA, including up to \$500 million a year for prevention of alcohol-related problems. NIDA claims on its Web site that it alone funds “over 85 per cent of the world's research on the health aspects of drug abuse and addiction.”<sup>3</sup> There can be no dispute that, both in alcohol and in drug research, the US plays an important and often dominant role. An important part of the research program of both NIDA and NIAAA is that they fund research centres with renewable five-year coherent research programs (for instance, there are 16 research centres in the NIAAA Centre grant program). Typically, such a centre becomes a nexus for a group of researchers working on project grants, in addition to the support provided through the centre grant.

The US research effort is heavily tilted towards biological research, and that tilt has become more pronounced in the last 10 years. Considering just alcohol research between 1990 and 2001 the annual amount spent by the US National Institute on Alcohol and Alcoholism (NIAAA) on biomedical and neuroscience research rose from US\$ 49 million to \$121 million. By 2001, well over half of NIAAA's research spending was in this category (Midanik, 2002). Nor is American investment in biological alcohol research limited to the federal government. For example, the Gallo Center in the San Francisco area, originally funded with \$6.5 million seed money from the co-founder of the world's biggest wine company, received \$143 million from the state of California for a 1998-2003 “Manhattan Project” studying the biological causes and treatment of alcoholism (Harper, 2001).

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<sup>3</sup> <http://www.drugabuse.gov/about/AboutNIDA.html>

The US is also strong in many other research areas. These include

- population surveys, with large annual national surveys on drug use among adults and youth, as well as periodic surveys focusing on drinking patterns and problems;
- epidemiological studies of the role of alcohol and drugs in physical and mental health problems, violence and injuries;
- treatment outcome studies, including multi-site trials;
- treatment system research, particularly focused on issues in managed care (in fact, a specific percentage of all research money is reserved for health services research); and
- policy impact studies, particularly for drinking and driving and for youth drinking.

The results of much of the US research effort is clearly applicable outside the US. Most biological research is generally applicable, as it is true to a certain degree for medical epidemiological studies<sup>4</sup> and treatment outcome studies. Surveys and other population studies are obviously more society-specific, and this is true also for treatment system studies and for policy impact studies. The peculiarities of U.S. health care financing make US treatment system studies quite country-specific, and policy impact studies in the US, as elsewhere, are considerably dependent on existing policy arrangements. Drug and to some extent alcohol research in the US is constrained by ideology; thus it has often been difficult to mount harm reduction trials for illicit drugs, and controlled policy experiments to some extent run against US societal values. Another weakness of US research is that the research review system tends to encourage “more of the same” studies, cookbook-perfect in terms of received research paradigms, but not highly innovative.

## **Mexico**

Research is concentrated in one centre: a psychiatric centre rather like the Centre for Addiction and Mental Health (CAMH) in Ontario and includes biological, clinical and social research, as well as treatment services and some community outreach. The social research includes the best population survey tradition of any developing country (helped with US money), some emergency-room and other epidemiological studies, and some history of community-oriented research. Although much of the research funding has been primarily for drug research, Mexican researchers have insisted on including alcohol in the studies, viewing it as by far the most problematic substance in Mexico.

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<sup>4</sup> There are limits to the transferability of medical epidemiological studies. The impact of alcohol on disease is determined by average volume of alcohol consumption and drinking patterns (Rehm et al., 2003), and the large American cohorts (e.g., Nurses' Health, Health Professionals Follow Up, Cohort of the American Cancer Society) do not have enough variation in the heavy drinking categories and the more detrimental drinking patterns. With regard to medical outcomes of drug use, most of these outcomes depend not only on drug use, but on an interaction between drug use and social environment and thus are not easily transferrable as the social environments change.

## **Sweden**

With around nine million inhabitants, Sweden has about four-fifths of the population of Ontario. There is a strong tradition of alcohol research, including regular population surveys both of adult and of adolescent populations, but the effort was until recent years rather diffuse. In the last few years, a monthly survey of adults enables tracking of the substantial unrecorded consumption and has become a base for other studies. Swedish researchers also have a strong presence in medical epidemiology, in treatment outcome studies and in alcohol policy impact studies. In recent decades, Swedish alcohol research had drifted towards an emphasis on biological research. Countering this, social research was strengthened five years ago with the establishment of a centre, funded partly through research councils and partly by direct ministry contracts. Social and other research on drugs was strengthened in the last year with a grant program run from the office of the national drug coordinator.

## **Finland**

Finland's population of about 5.2 million is less than that of Quebec, and about one-third more than that of British Columbia. Finland has a long and strong tradition in alcohol research, with a social and a biological research centre, and work in both these areas and clinical studies funded by the government-funded Finnish Foundation for Alcohol Studies. Now that illicit drugs have become a significant presence in Finland, research has been expanded to include this field also. Finnish alcohol research has been particularly strong in policy impact studies and qualitative research studies of heavy drinkers, youth groups, etc. There are established research traditions also in population surveys, medical epidemiology, community prevention studies and biological research.

## **United Kingdom**

The UK population is almost twice that of Canada, but UK research traditions have significant weaknesses. The limited investment in research is more focused on drugs than on alcohol. The Medical Research Council and the Wellcome Foundation have given support for basic biological research in drug abuse. Apart from the National Addiction Centre in London, affiliated with the Institute of Psychiatry, research tends to be conducted by small research teams. Adult population surveys have been conducted by general social survey offices, and they have not kept up with the international literature in terms of measuring drinking patterns and alcohol-related problems. British researchers have a substantial presence in medical epidemiology and in clinical research, both for alcohol and for drugs. In recent years, social research in both fields has been to a considerable extent left to a few criminologists.

## **Australia**

Australia's population of close to 20 million is about two-thirds of Canada's. Australia has two federally funded drug and alcohol research centres, one in Perth focused on prevention and policy studies and one in Sydney focused on treatment research (although each actually works more broadly). There is also a substantial group of loosely linked researchers in Melbourne, as well as some researchers in other cities, partly supported by state-funded programs.<sup>5</sup> As in Britain, the periodic population surveys have not been well tied in to developing international traditions of measurement. Australian research has been strong in drug harm reduction studies, including evaluations of interventions, and reasonably strong in medical epidemiology and treatment outcome studies. Ethnographic and qualitative research is a strong suit. Recently, a substantial research tradition has built up in the evaluation of alcohol control experiments in aboriginal communities, which have made an important contribution to the international literature.

## **Switzerland**

Switzerland's population of 7.3 million is about the same as that of Quebec. There are two free-standing research centres in the alcohol and drug field, in Lausanne and Zürich, as well as two university-based centres. Funding comes primarily from the federal and cantonal governments, although the Lausanne centre also raises substantial funds by direct-mail solicitation of donations. Swiss population studies in alcohol have made a substantial contribution because of the unique ethnic divisions of Switzerland. Swiss researchers also have a substantial presence in the medical epidemiology, treatment system and policy studies fields, both for drugs and for alcohol. The Zürich centre was responsible for a major harm reduction clinical study, the Swiss heroin maintenance trial.

## **Comments**

While each country considered above has made strong contributions in one or another area, there is considerable variation in the strengths and weaknesses of research programs in these countries. A common characteristic of successful countries with high research output is that a considerable portion of their research is organized in research centres and around cumulative research programs. These centres are usually funded at the national level.

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<sup>5</sup> For an example of research priority-setting in Australia, see: [http://www.health.gov.au/pubhlth/nds/resources/publications/alc\\_agenda.pdf](http://www.health.gov.au/pubhlth/nds/resources/publications/alc_agenda.pdf)

### **3. Canadian alcohol and drug research traditions**

#### **A brief history of Canadian research institutions in the field<sup>6</sup>**

The first sustained Canadian attention to alcohol research was an outgrowth of the move to set up provincial alcoholism commissions, starting in 1949 with what eventually became the Addiction Research Foundation (ARF) of Ontario. In the decade-and-a-half after the founding of ARF, a commission to establish and run a provincial alcoholism treatment system was set up in every Canadian province (Rush and Ogborne, 1992:256). In the 1960s, the responsibilities of these commissions were broadened to include other drugs besides alcohol. In Alberta and Manitoba, these commissions still survive, having been given new leases on life by a succession of additions to the original mandate of alcoholism treatment: drugs, drinking and driving remediation, and most recently gambling.

From almost the beginning, as reflected in the agency's name, research had been defined as part of ARF's task. A director of research was appointed in the mid-1950s, and the research establishment at ARF grew substantially over the years. By the mid-1990s, there were about 200 employees of ARF primarily engaged in research, divided into research departments dealing with biological research, clinical research, and social, epidemiological and policy research. A large preponderance of the research funding came from the province as part of ARF's general grant, although grants from Canadian and US federal sources have been an increasing part of the support. Most of the research capacity in alcohol and drugs has survived ARF's merger with agencies with mental health mandates into the Centre for Addiction and Mental Health (CAMH).

Research was part of the effort at several of the other provincial addiction agencies. The short-lived twin British Columbia commissions on alcohol and drugs, for instance, funded some studies, including an interesting and well done community epidemiology study (Cutler and Storm, 1973). In Quebec, in the early 1960s, a provincial Committee of Inquiry and Information on Alcoholism (Comité d'étude et d'information sur l'alcoolisme) was created, merged in 1966 into the Office of Prevention and Treatment of Alcoholism and Addiction (Office de la prévention et du traitement de l'alcoolisme et des toxicomanies (OPTAT). OPTAT had a research function as part of its mandate and played an important role in research development and dissemination, as well as an advisory role to the government on alcohol policy development. However, OPTAT was dissolved in 1975, and alcohol and drug research in Quebec flagged for the next 15 years.

In the course of the 1970s and 1980s, the addiction treatment efforts in most provinces had been reorganized into the general health or social services, so that by 1990 only Alberta and Manitoba had a freestanding specialized addiction agency with responsibility for treatment in the province and a concern also about prevention and policy.

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<sup>6</sup> This section draws in part on Room et al., in press.

In the mid-1970s, there was a brief flowering of federal interest in drug and alcohol research, initiated by the work of the LeDain Commission of Inquiry into the Non Medical Use of Drugs, which reported in 1972 and 1973. The NonMedical Use of Drugs Directorate, set up in the wake of the LeDain reports in Health and Welfare Canada, funded a number of studies in the mid-1970s. After the Directorate was merged into a Health Promotion Directorate, the federal commitment to drug and alcohol research gradually waned.

By the end of the 1970s, then, alcohol and drug research in Canada was primarily carried on in one provincial agency, ARF, and otherwise by individual university faculty members and their students, in some cases with funding from federal research grants. In 1991, Quebec initiated an infrastructure program that led to the creation of two research teams, grouping together academics working in partnership with practitioners, with a primary focus on prevention and treatment research. In addition, in the late-1990s, the Comité permanent de lutte à la toxicomanie, an advisory committee to the Minister of Health and Social Services, played an active role in research dissemination to a broad public by publishing research-based documents on selected topics. The Quebec Scientific Information Network (RISQ), founded in 1998, has provided a general mechanism for partnerships, research diffusion and training within the province.

Although based at the provincial level, Ontario's ARF to some extent filled the vacuum between the 1960s and 1990s at the national level in research on alcohol and drug issues and gained an international reputation in a number of areas, including alcohol epidemiology, alcohol policy and treatment evaluations. In 1988 the Canadian Centre on Substance Abuse (CCSA), an arm's-length national agency was set up. Its role was to coordinate and assist rather than to direct, although it originally included a small policy research unit. CCSA has sponsored and published a number of research studies<sup>7</sup>, despite its research activities being further restricted in the mid-1990s by budget cuts. As noted below, CCSA's budget has been substantially increased in 2003.

The formation of a Centre for Addictions Research of British Columbia has recently been announced at the University of Victoria, with core financing from the provincial level. It is hoped that this initiative will bring a substantial strengthening of the field in Canada.

The general picture of research interest at the Canadian federal level until very recently, then, has been of two small waves of effort, in both cases primarily in response to social concerns about illicit drug use, but both subsiding within a few years. In Quebec, there have also been two waves of interest at the provincial level, the second of which still continues. In Ontario, ARF and now CAMH have provided a unique institutional focus for a sustained provincial commitment to research funding. Given this history, it is not surprising that foreign researchers have usually been surprised to discover that ARF/CAMH is not a national institution.

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<sup>7</sup> <http://www.ccsa.ca/pubscat.htm>



The imbalance in the Canadian literature, and its failure in some ways to thrive in recent years, is illustrated in a recent review of alcohol policy impact studies (Room, forthcoming), an area in which Canadian research has played a relatively important role. Altogether, the review identified 36 studies by Canadian researchers. For 31 of the studies, the authors were based in Ontario. One study was completed in the 1960s, 19 in the 1970s, nine in the 1980s, seven in the 1990s, and none so far in the 2000s.

## **The current alcohol and drug research scene in Canada**

Although there are overall many organizations dealing with addiction and in part with research, there is currently little in the way of a national forum for Canadian alcohol and drug research. For instance, the sole Canadian-based alcohol or drug journal is a new francophone electronic journal, *Drogues, santé et société* (two issues so far)<sup>8</sup>, although Canada-based outlets are available through such publications as the *Canadian Journal of Public Health* and *Policy Options*. In lacking well established field-specific journals, Canada differs, for example from Australia (*Drug and Alcohol Review*), Austria (*Wiener Zeitschrift für Suchtforschung*), Germany (*Sucht, Suchttherapie*), Switzerland (*Abhängigkeiten*) and the Nordic countries (*Nordisk Alkohol- och Narkotikatidskrift*). Also, there are no regular national research meetings in the field. Alcohol and drug studies are not well represented at meetings or as sections of Canadian disciplinary societies (e.g., the Canadian Psychological Association and the Canadian Sociology and Anthropology Association). Instead, Canadian researchers regularly attend meetings of US-centred societies (e.g., Research Society on Alcoholism, College on Problems of Drug Dependence, American Public Health Association), along with international meetings. Annual meetings in Canada that have substantial alcohol and drug content are limited to the Canadian Society of Addiction Medicine (CSAM). The CSAM has remained medically focused, whereas the equivalent organization in Australia broadened its focus to become multidisciplinary, and is now the host of the annual national alcohol and drug research meeting. Also, Canada's experience in national alcohol and drug epidemiological surveys is in sharp contrast to the frequent national surveys in the United States, Sweden, Norway, Finland and Australia. The first Canadian national alcohol and drug survey was relatively recent, 1989, and to date there has been only one more, in 1994, with plans for a third soon (see below).

In the 1990s, a majority of the grants from Canadian federal research councils to alcohol and drug studies went to biomedical studies. Biological research in Canada tends to be oriented towards the very much larger world of biological research in the US, and many Canadian researchers aspire to get, and some succeed in getting, grants from the US National Institutes of Health. Canadian researchers have made substantial contributions to biological addiction studies; names such as Harold Kalant, Robert Pihl and Jane Stewart, among a number of others, are widely recognized internationally, and there are a number of prominent Canadian researchers in positions in the US. Some argue that the upsurge of knowledge in the neurosciences has created new opportunities

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<sup>8</sup> <http://www.drogues-sante-societe.org/> The last number of a previous francophone journal, *Psychotropes*, appeared in 2000.

for research on the short- and long-term effects of alcohol on the brain, with implications for reducing the health and social burden of alcohol and illicit drugs in Canada. Others argue, on the other hand, that there has been little practical payoff from biological research (in Canada or elsewhere) in terms, for instance, of treatment modalities.

Apart from biological studies, Canadian research in the field has been quite strong in the following areas:

- treatment modality and outcome research (particularly for cognitive behavioural therapies);
- treatment systems research, including harm reduction approaches;
- community intervention and prevention studies;
- epidemiological and other population studies;
- cost-of-illness studies of costs of alcohol and drug problems; and
- policy evaluations and research.

In several areas of research strength, work has until now been limited to a few parts of Canada, and we know little about the applicability of findings elsewhere. Epidemiological and population studies have been strong in Ontario and Quebec, but strong researchers elsewhere, for instance in Manitoba and Nova Scotia, have been hampered by lack of resources. A number of other examples of weaknesses in the Canadian research portfolio can be given. In British Columbia and Alberta, for instance, both provinces with above-average alcohol consumption levels, there is not an established research tradition assessing the impacts of drinking trends and patterns on health. Despite the importance of development of natural resources in the Canadian economy, there are few studies of the impact of primary industry development or frontier experiences on alcohol and other drug use and problems. Evaluated community prevention studies are rare outside Ontario. With a couple of notable exceptions, Canadian qualitative research in the field has not been particularly strong. Despite the clear existence of significant alcohol and drug problems in aboriginal Canadian populations, research in this area has been weak and uncumulative, hampered by restrictions on study design, analysis and publication.

There is a cadre of committed researchers in the field in Canada, spread across a number of provinces, but except in Ontario the institutions and the continuity that would produce strong cumulative research traditions have been lacking. Beyond attention to topical priorities, then, there is a need for attention to matters of research infrastructure that will encourage good young researchers to build a career in the field. An important element of the infrastructure should be Canadian national research centres in the field. Such centres facilitate the development and maintenance of lines of research that encourage accumulated knowledge, in contrast to ad-hoc models that encourage disjointed and changing priorities from year to year.

A complementary perspective is provided by a reviewer of a draft of this paper. Noting a number of specific research projects and researchers not mentioned in the paper, the reviewer thought that the main issue was not any weakness in research. Instead, “there is a need to understand the reasons why national coordination is so difficult to attain in our field. . . . It is the alliances, the assemblies, the partnerships between provinces/territories which are difficult. There are clusters of excellent researchers in Canada. It is strategic actions which are difficult to put into effect.”

In contrast to the recent past, there have been substantial signals of a revival in research funding from the federal level in the last year or two, usually involving cross-provincial research partnerships. Health Canada is now committed to a new general-population alcohol and drug survey, to be repeated every three years. The Canadian Institutes of Health Research (CIHR) are funding a new national survey on alcohol problems (GENACIS) with an emphasis on gender issues, and a new national university/college student survey. Alcohol and drug disorders were a substantial part of the Canadian mental health survey funded by a consortium including CIHR. In another substantial CIHR initiative, clinical trials are under way to study the potential benefits of prescribing heroin and alternative opiates as part of the treatment of opiate addiction: project NAOMI (North American Opiate Medication Initiative).

As a result of the announcement of Canada’s Drug Strategy in May, 2003, CCSA will be in a position to increase its activities in key research-related areas. These include coordinating a national illicit drug prevalence survey, leading the organization of a national conference every two years to gather input from key players in the addictions field on priorities for future action to reduce addiction-related harm, and producing an annual “state-of-the-union” report on addictions in Canada.

## **4. Canada's special assets**

In considering research priorities for Canada, it is worth keeping in mind some special assets that Canada has for alcohol and drug research:

- relatively good and well cumulated health and social records. Within the limits of what ethics allow, such records make possible many kinds of epidemiological studies and research on service utilization that are more difficult or impossible in most other places (e.g., the US).
- the existence of single-payer provincial health systems. Again, this potentially gives Canadian research a substantial advantage compared, say, with the US, both in terms of sampling and of completeness of records.
- fewer ideological constraints, particularly with respect to illicit drugs. Harm reduction research and policy experiments for illicit drugs, for instance, are much more feasible in Canada than in the US.
- provincial alcohol control and management systems. These allow for quasi-experimental pilot or trial studies and policy assessments and impact analyses.
- the diversity of the population. For researchers, the multicultural mosaic of Canada is both a blessing and a curse. Very large population samples are required, for instance, to map ethnic variations adequately. On the other hand, Canada's many ethnic communities offer great opportunities for research, including, for instance, collaborative comparisons with patterns of behaviour and problems in the ethnicity's ancestral country.

## 5. Criteria for research priority-setting

In the following we will try to give criteria that we believe could serve as guidelines to prioritize research in a situation of limited resources. The criteria are ordered by importance.

- The **population or public health significance** of the topics the study relates to should play an important role. For health, this could be done in terms of the **burden of disease** associated with alcohol and other drugs. The problem for Canada is that there have been no systematic burden of disease studies that include addictions and alcohol and other drugs, and thus we lack some of the background data. However, from the Canadian cost study (Single et al., 1996, 1999), we have some indication of mortality and morbidity related to alcohol and other drugs. Cost studies may also serve to prioritize non-health outcomes. A systematic examination of current research based on burden of disease will reveal some of the inconsistencies in current research funding and political prioritization.
- The **work is unlikely to be done elsewhere** (in particular, potential duplication with US work should be avoided). Research is a worldwide enterprise with manifold opportunities for exchange. It is a waste of scarce resources to just duplicate efforts from other countries (especially if the duplication is less well executed than the original). As indicated above, there are unique opportunities in Canada for research that cannot be carried out elsewhere. Emphasis should be placed on **Canada's special strengths**, both in terms of the assets noted above and in terms of areas of excellence in research traditions.
- Research should be based on evidence with regard to potential impact of interventions, so that research considered to have the **strongest potential for impact** should have the highest priority. This kind of reasoning, in turn, requires a strong tradition of economic evaluation.
- The extent of **opportunity to link and connect** the research with research elsewhere is important. Clearly, linking cross-nationally comparable data gives a strong extra dimension to the analysis and helps improve knowledge.

## 6. Suggestions for discussion at the forum

It will be the aim of the workshop to provide recommendations and this paper should only serve as a background document. It does not want to prejudge the recommendations to be derived from the workshop. However, we give here some suggestions that may be helpful in initiating discussion at the workshop. These are ordered by topic and not by priority.

- **Biological research:** The focus should be on concrete “holes” in the literature that Canadian researchers are in a strong position to fill—for example, how to measure impairment from cannabis with respect to impaired driving; medical consequences of particular modes of administration of particular illicit drugs; means of reducing physical harm from heavy drinking. Canada has had a tradition of focusing on important but neglected areas of biological research, such as liver disease medications, rather than on the etiology of addiction (an area of high prestige but limited payoff). This may be a niche where priorities will lead to independent traditions without the risk of duplication of US research. For research in the international mainstream, such as on the etiology of addiction, NIDA, NIAAA and NIMH are open to applications from Canadian researchers, and this constellation should be recognized in discussions.
- **Scope, monitoring and trend data:** Canada lacks to a considerable degree the systematic background data necessary to undertake rational prioritization of research. There is no burden of disease study, and the last study on societal costs of alcohol, tobacco and other drugs was for the year 1992 (Single et al., 1996, 1999). A strengthened tradition of national surveys of alcohol and drug use is needed. This should include regular adult surveys, perhaps every three years, and regular national school surveys patterned on those in the Maritimes and Ontario. While a core of items should be repeated each time, each survey wave should also include special topics on a one-time or less-frequent basis. Another strategy for national adult surveys would be an ongoing survey of perhaps 2,000 cases a month. Accumulated over longer periods, this would allow measurement of illicit drug use, of unrecorded alcohol consumption and of seasonal variations, and it could serve as a platform for studies of the effects of policy changes.
- **Youth cultures and other subculture studies:** Particularly for illicit drugs, there is a need to focus on subpopulations and contexts with high levels of use, studying behaviours that will appear in national samples only in vanishingly small numbers. A coordinated mixture of ethnographic and quantitative studies will be needed. One aspect that needs study is the place of youthful decisions about drinking and drug use in the more general context of young people’s choices about risk-taking.
- **Epidemiological research:** Information on prevalence and on incidence of exposure or disease cannot be transferred from other countries. But much of the current knowledge points towards the fact that social determinants of health are an important factor not only in disease etiology, but also in developing interventions. Thus, research on social determinants of alcohol and drug problems should be given high priority. In undertaking studies of drug-using careers and other longitudinal

studies, one useful focus would be on under-studied drugs that are widely used in Canada. What problems emerge with sustained use of cannabis, or of codeine, and how often? There is a need also to focus on the different factors that may be involved in alcohol and drug problems in specific subpopulations—for instance, among women as compared with men, in rural areas as well as suburbs and cities, and among specific occupational groups. The special need for well designed and reported studies in Canadian aboriginal populations, for which the federal government has a special responsibility, is also noted below.

- **Research on social consequences of alcohol and drug use:** Many of the consequences of alcohol and drug use are social in nature—for example, gender implications. Again, we lack some of the knowledge necessary to understand the mechanisms and thus it is impossible to intervene given current knowledge.
- **Intervention and treatment modality research:** Canada has a strong history in clinical research for alcohol and other drugs. At the current juncture, the literature would suggest focusing on brief interventions with a cognitive behavioural orientation and on drug substitution therapies. There is a need also for well designed studies of the effectiveness of modalities on populations with dual disorders. Substantial attention should be given to dissemination studies with a controlled design, that is, systematic studies comparing the effectiveness of different approaches to getting acceptance and implementation of research-backed treatment modalities in the treatment system. Such studies should involve research-oriented practitioners from various clinical professions.
- **Treatment services and systems research:** Trials are needed of the differential effects of different ways of organizing treatment services—whether services are integrated or separate, on the same site or different sites, whether there is assistance in ensuring a referral, gender specificity, etc. The goal is to determine which system of interventions is most effective and cost effective. Treatment systems research is also needed on cost-effective ways of organizing services for co-morbidity, in particular for those with both mental health and substance-use problems.
- **Policy analysis and effects studies:** A standby capability is needed to undertake “natural experiment” studies when policies change at provincial or local levels. Attention should be given to the possibility of conducting controlled studies of drug policy change. Policy analytical studies, including cost-benefit analyses, should be supported on current policies that are candidates for change.
- **Prevention evaluations:** Building on the strong Ontario experience in the field, the tradition of studying alcohol community interventions should be extended more widely across Canada and applied also as appropriate to harm reduction interventions for illicit drugs.

- **Aboriginal Canadian population and intervention studies:** There are very substantial federal expenditures on treatment and other responses to aboriginal Canadian alcohol and drug problems, but the knowledge base for effective action in this area is slight. There is thus a need for well designed studies in this area to chart knowledge-based paths forward. It is accepted that there should be community participation in all aspects of such studies, but (1) studies that are supported must have designs that are strong enough to be published and to yield knowledge that can be generalized; and (2) the results of the studies must be fully disclosed.



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