



# THE COSTS OF SUBSTANCE ABUSE IN CANADA 2002

HIGHLIGHTS



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# THE COSTS OF SUBSTANCE ABUSE IN CANADA 2002

## SUMMARY OF COSTS FOR 2002

This study examined the impact of substance abuse on Canadian society. It estimated that impact in terms of death, illness and economic costs caused in whole or in part by the abuse of tobacco, alcohol and illegal drugs for the year 2002. In economic terms, *abuse* occurs when substance *use* imposes costs on society that exceed the costs to the user of obtaining the substance. These costs are designated as “social” costs.

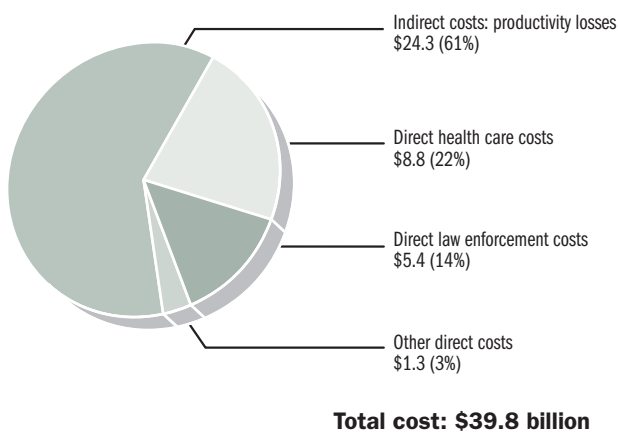
*It is important to note that estimating social costs is not a simple accounting exercise. We do not look at actual dollars spent or at a literal body count in cases where death results in a cost to society. Rather, cost studies are based on well-documented economic theories and assumptions. For this study, in all cases where we could have used different assumptions to estimate costs, we routinely adopted the most conservative approach.*

Measured in terms of the burden on services such as health care and law enforcement, and the loss of productivity in the workplace or at home resulting from premature death and disability, the overall social cost of substance abuse in Canada in 2002 was estimated to be \$39.8 billion. This estimate is broken down into four major categories in Figure 1. This overall estimate represents a cost of \$1,267 to every man, woman and child in Canada, as indicated according to substance in Figure 2.

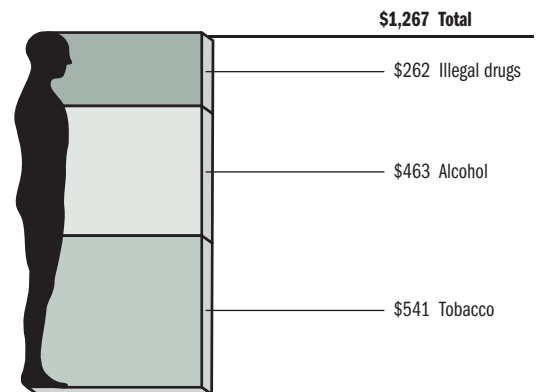
Tobacco accounted for about \$17 billion or 42.7% of that total estimate, alcohol accounted for about \$14.6 billion (36.6%) and illegal drugs for about \$8.2 billion (20.7%) (see Table 2).

Productivity losses amounted to \$24.3 billion or 61% of the total, while health care costs were \$8.8 billion (22.1%). The third highest contributor to total substance-related costs was law enforcement with a cost of \$5.4 billion or 13.6% of the total.

**Figure 1: Costs attributable to substance abuse by cost category in Canada, 2002**



**Figure 2: Per capita costs of substance abuse in Canada, 2002**



[ Note: Numbers may not add up because of rounding ]

## WHY WE MEASURE THE COSTS OF SUBSTANCE ABUSE

Substance abuse represents a significant drain on Canada's economy in terms of both its direct impact on the health care and criminal justice systems, and its indirect impact on productivity as a result of premature death and ill health. The *International Guidelines for Estimating the Costs of Substance Abuse*—developed in a series of meetings of world experts hosted by the Canadian Centre on Substance Abuse between 1994 and 2002—spell out four reasons for estimating the social costs of substance abuse:

1. Economic estimates are often used to argue that policies on alcohol, tobacco and other drugs should be given a high priority on the public policy agenda.
2. Cost estimates help to appropriately target specific problems and policies.
3. Cost studies help to identify information gaps, research needs and desirable refinements to national statistical reporting systems.
4. The development of improved substance abuse cost estimates can provide baseline measures to determine the effectiveness of drug policies and programs.

### Not all cost studies are the same

There are various kinds of cost studies. The study we are describing here is a cost-of-illness study presenting “aggregate costs”, which are calculated by looking at all the external costs of substance abuse and comparing them with a hypothetical situation where no substance abuse exists. Another kind of cost estimate is the “avoidable cost”, which makes an important distinction between all costs generated by substance abuse and the portion of those costs that could be avoided by establishing appropriate policies and programs. Guidelines for conducting avoidable cost studies are now being developed by an international working group funded by Health Canada.

The current study provides an essential foundation for other types of cost estimates such as avoidable costs and therefore makes a valuable contribution to policy making and health care planning in Canada. However, it does not measure the impact of substance abuse on government expenditures and revenues and it is not a cost-benefit or cost-effectiveness analysis of substance abuse programs.

## THE EVOLUTION OF COST ESTIMATION STUDIES IN CANADA

In 1996, the Canadian Centre on Substance Abuse (CCSA), in partnership with a number of federal and provincial organizations, released the first-ever comprehensive estimate of the social costs of substance abuse in Canada (Single et al., 1996)\*. The study was based on data collected for the year 1992 and estimated the costs of substance abuse in Canada to be \$18.45 billion, representing a cost of \$649 to every Canadian. Costs associated with the use of tobacco (\$9.5 billion), alcohol (\$7.5 billion), and illegal drugs (\$1.4 billion) were presented nationally and by province, as well as by substance, sex and age group.

The 1996 study was made possible by the development of reliable cost estimation guidelines (*International Guidelines for Estimating the Costs of Substance Abuse*) through a process coordinated by CCSA involving national and inter-provincial cooperation. Initially released by CCSA, the *Guidelines* were published in a second edition by the World Health Organization in 2003 and have been widely disseminated.

\* Single, E. et al. (1996). *The Costs of Substance Abuse in Canada: A Cost Estimation Study*. Ottawa, ON: Canadian Centre on Substance Abuse.

Substance abuse represents a significant drain on Canada's economy in terms of both its direct and indirect impact.

#### **Why do we need a new cost study?**

There has been no comprehensive study of the social costs of substance abuse in Canada since 1996 and the data on which that study was based are now more than 10 years old. The new study uses data from 2002 and so closes a 10-year statistical gap. The new study also benefits from advances in cost estimation methodology that can produce more reliable interpretations of the data.

The current study also draws on new sources of information that paint a more complete picture of the social costs of substance abuse in Canada. For example, this study contains more data on the effects of second-hand smoke than were available when the 1996 study was conducted. As well, CCSA commissioned a special study after the 1996 cost study to provide improved estimates of the proportion of crime attributed to substance abuse. The new estimates have been incorporated into this study.

To fill the 10-year gap in cost estimation studies, CCSA once again spearheaded a partnership of various provincial and federal organizations to organize a second Canadian study of the costs of substance abuse. The project was undertaken in 2003 by a multidisciplinary working group of scholars from various institutions led by Dr. Jürgen Rehm from the Centre for Addiction and Mental Health.

#### **Comparing studies: a word of caution**

It is natural to want to compare the costs derived from 2002 data with those based on data from 1992 to see if substance abuse problems are getting worse or better. Unfortunately that is not easy to do. Because cost estimation methods have evolved since 1996, results are not directly comparable. Data contained in one study were not always available for the other. Where costs are involved, inflation is always a factor and this problem is particularly acute with health care costs that have far outstripped the average inflation rate. As well, there have been substantial demographic changes in Canada, including the effects of an aging population on our ability to isolate causes of death.

For all the above reasons, it may not be possible to determine the exact magnitude of changes in costs from 1992 to 2002; however, there is no doubt that costs have risen. This is a reflection of changes in the impact of substance abuse over 10 years as seen clearly in some of the fundamental indicators that are used as a basis for cost estimation. These include the number of deaths caused by substance abuse, the number of years of potential life lost as a result of those deaths, and the number of days spent in hospital for a health problem related to substance abuse. These indicators are discussed later in this highlights report and a comparison of 1992 and 2002 indicators is presented in Table 1.

**TABLE 1. OVERVIEW OF COMPARISON OF DEATH AND ILLNESS USING TWO DIFFERENT METHODS  
(SINGLE ET AL., 1996 AND REHM ET AL., 2006)**

	<b>1992</b>	<b>2002</b>	<b>2002</b>	<b>1992 vs 2002</b>
	Single et al. 1996	Single et al. 1996	Rehm et al. 2006	Relative Difference*
<b>All deaths</b>	<b>196,968 (100%)</b>	<b>223,603 (100%)</b>	<b>223,603 (100%)</b>	
Deaths attributed to				
Tobacco	33,498 (17.0%)	37,208 (16.6%)	37,209 (16.6%)	-2.2%
Alcohol	6,701 (3.4%)	9,100 (4.1%)	8,103 (3.6%)	19.6%
Illegal drugs	732 (0.4%)	1,455 (0.7%)	1,695 (0.8%)	75.1%
All substances combined	40,931 (20.8%)	47,763 (21.4%)	47,007 (21.0%)	2.8%
<b>All potential years of life lost (PYLL)</b>	<b>3,080,423 (100%)</b>	<b>3,091,576 (100%)</b>	<b>3,091,576 (100%)</b>	
PYLL attributable to				
Tobacco	495,640 (16.1%)	504,609 (16.3%)	515,607 (16.7%)	1.4%
Alcohol	186,257 (6.0%)	209,096 (6.8%)	191,136 (6.2%)	11.9%
Illegal drugs	31,147 (1.0%)	59,220 (1.9%)	62,110 (2.0%)	89.4%
All substances combined	713,044 (23.1%)	772,925 (25.0%)	768,853 (24.9%)	8.0%
<b>Acute care hospital days</b>	<b>41,371,614 (100%)</b>	<b>21,441,778 (100%)</b>	<b>21,441,778 (100%)</b>	
Hospital days attributable to				
Tobacco	3,024,265 (7.3%)	2,316,166 (10.8%)	2,210,155 (10.3%)	47.8%
Alcohol	1,149,106 (2.8%)	1,550,554 (7.2%)	1,587,054 (7.4%)	160.4%
Illegal drugs	58,571 (0.1%)	318,409 (1.5%)	352,121 (1.6%)	948.9%
All substances combined	4,231,942 (10.2%)	4,185,129 (19.5%)	4,149,330 (19.4%)	90.8%

Please note that the numbers for alcohol are gross numbers; that is, they only account for death and illness caused by alcohol and not death and illness prevented by alcohol.

\* Relative difference is the difference between columns 1 and 2 above in which the same methodology is applied to data from 1992 and 2002; for example, tobacco-attributed deaths represented 17% of all deaths in 1992 and 16.6% in 2002. So, while overall tobacco deaths rose between 1992 and 2002, they actually fell as a percentage of all deaths in each year.

## ESTIMATING THE DIRECT COSTS OF SUBSTANCE ABUSE

The social costs associated with substance abuse fall into two basic categories: direct costs and indirect costs (see Figure 1). The two types of costs require different methods of estimation as the following sections demonstrate.

### Health care

The biggest single direct cost associated with substance abuse is health care. Some of the components that make up the overall cost of health care include the costs of acute care and psychiatric hospitalization, specialized inpatient and outpatient treatment, ambulatory care and doctors' fees, visits to a family doctor and drugs prescribed to treat a substance abuse problem.

## The biggest single direct cost associated with substance abuse is health care.

To determine the economic burden on our health care system imposed by substance abuse, we need to make a number of calculations. In the simplest terms, if a disease or condition is known to be associated with the abuse of a substance such as alcohol, we must know to what extent that substance is actually responsible for causing the problem. It may be only one of several factors. If alcohol abuse, for example, is 50% responsible for a certain disease and we know how much is spent on treating all cases of that disease, we can estimate that half the cost of treatment is attributable to alcohol.

The proportion of a disease that can be attributed to the use of a certain substance is called an attributable fraction. It is usually derived from research studies across a range of comparable countries showing the relative risk of various levels of exposure to the substance compared with no exposure at all. A further calculation must be done to determine how many Canadians fall into those various risk categories. This is done using large, representative prevalence studies, including the 2004 Canadian Addiction Survey (CAS). The final step consists of combining these data with cost data on health care contained in national statistics. A complete list of the sources for cost information used in this study can be found in the full report (Rehm et al., 2006)\*.

### Enforcement

The second largest direct cost is law enforcement. One way to determine substance-related policing costs would be to get information from the police themselves that shows how much time officers devote to specific drug files. However, this is difficult because the police do not routinely keep records that split the officers' time between drug enforcement activities and all other activities. Instead we used surveys of the Canadian prison population to generate attributable fractions linking alcohol and drug use to a wide range of criminal activity as reported by inmates. These fractions were then applied to overall expenditures for policing, the courts and prisons to calculate enforcement costs related to substance abuse.

By this method, "drug offences", including possession, selling and cultivation of illegal substances, are considered to be 100% attributable to drugs by definition, while so-called "substance-related" offences are only partially attributable. For example, substance abuse may constitute a portion of robbery offences if a person steals to pay for drugs.

There are two ways that substance abuse may drive an individual to commit an offence. The first is intoxication, which may make an individual behave in ways he or she would not normally behave. For example, alcohol consumption can lead to aggressive behaviour, including criminal assault. The other pathway to crime is through addiction or dependence on substances. In such cases, individuals may be compelled to commit crimes such as breaking and entering to pay for their habit.

### Research, prevention and other direct costs

The costs of substance-related research and prevention are included in this study. Other direct costs provided in this study include fire damage, vehicle collision damage and a range of costs to the workplace associated with providing employee assistance programs and drug testing.

\* Rehm, J. et al. (2006). *The Costs of Substance Abuse in Canada 2002*. Ottawa, ON: Canadian Centre on Substance Abuse.

## ESTIMATING THE INDIRECT COSTS OF SUBSTANCE ABUSE

Indirect costs in this case refer to lost productivity in the workplace or at home resulting in whole or in part from the abuse of substances. These costs are difficult to calculate and are the subject of ongoing attention and debate among health economists. When a person dies prematurely or becomes unable to work because of a substance-related illness or injury, the economic contribution that he or she might have made to Canadian society is reduced or eliminated.

When a worker dies prematurely, it takes time to fill the job again. During that time (on average about three months), there is a “friction cost” that is equivalent to the wages he or she would have earned. Once the replacement worker is in place, the friction cost ends. However, we still have to account for whatever the replacement worker had to give up in order to take the job. For the purposes of this study, we assume that the vacancy created in the workforce is ultimately filled by someone providing unpaid services, such as for child care or home maintenance, and that someone else will have to be paid to do those things. Therefore, the loss of the worker’s unpaid services becomes a cost to society.

Productivity costs resulting from illness and injury are estimated by using income levels reported by respondents to a national community health survey. By comparing average income levels reported by those with a substance abuse problem and those without a problem, it is possible to calculate the difference, which becomes an economic cost attached to illness and injury linked to substance abuse. For Canadians permanently disabled because of alcohol or drug dependence, the calculation of productivity losses is similar to the one used for premature death.

## COSTS THAT WEREN’T CONSIDERED

For various methodological reasons or simply because data were not available, some costs associated with substance abuse were not included. For the most part, private costs are not estimated. This could include the cost to individuals of purchasing their alcohol, tobacco and illegal drugs. Also not counted are welfare benefits paid to individuals disabled by substance abuse, although the administrative costs of welfare programs and other transfer payments are included. For the most part, intangible costs are also not included. These include the costs of pain and suffering associated with substance abuse.

Also not counted are the costs associated with the abuse and misuse of pharmaceuticals. Currently there is no reliable way for the purposes of social cost estimation to distinguish between use and misuse of these products. Although this study represents an improvement in estimating substance abuse costs linked to crime, it could have benefited from more detailed policing data to estimate enforcement costs. In the case of tobacco-related crime, for example, no enforcement estimate was even possible. Finally, this study does not assess the lost productivity of people in prison convicted of a substance-related crime.

## DEATH AND ILLNESS LINKED TO TOBACCO, ALCOHOL AND ILLEGAL DRUGS

The costs associated with substance abuse all derive in some way from measures of death and illness. These are fundamental indicators and provide a better basis for comparison with previous studies than cost estimates themselves, which can be subject to many methodological differences resulting from ongoing improvements in cost estimation.



Alcohol is unique among the substances considered in this study because it is associated with both costs and benefits.

This study presents several measures of death and illness associated with tobacco, alcohol and illegal drugs, including number of deaths, potential years of life lost, and days spent in hospital. These are summarized in Table 1 with a comparison to the same measures for 1992. The table also presents the *relative* differences between the numbers for 1992 and 2002 expressed as percentages. This allows for a more accurate assessment of changes over 10 years in the magnitude of substance abuse problems in Canada.

#### **Tobacco**

The study looked at a range of illnesses associated with smoking, including lung cancer and heart disease. It provides a more complete picture of death and illness attributable to second-hand smoke than was possible when the 1996 study was conducted.

In 2002, an estimated total of 37,209 Canadians died from tobacco use, accounting for 16.6% of all deaths in Canada that year. Cancer was the leading cause of death (17,679 deaths) followed by cardiovascular disease (10,853) and respiratory disease (8,282). Tobacco-attributed deaths resulted in 515,607 potential years of life lost. Tobacco-attributed illness accounted for 2,210,155 days of acute care in hospital.

#### **Alcohol**

The study looked at both acute and long-term impacts of alcohol abuse, including vehicle collisions (acute) and liver cirrhosis (long-term). Alcohol is unique among the substances considered in this study because it is associated with both costs and benefits. The benefits are linked to evidence showing that moderate drinking offers some protection against coronary heart disease in older people.

In 2002, a net total of 4,258 deaths were attributed to alcohol, accounting for 1.9% of all deaths in that year. The net figure is calculated by subtracting the number of deaths *prevented* from the number of deaths *caused* by alcohol. Cirrhosis was the leading cause of death (1,246 deaths) followed by motor vehicle collisions (909) and alcohol-attributed suicides (603). Alcohol-attributed deaths resulted in 191,136 potential years of life lost. Alcohol-attributed illness accounted for 1,587,054 days of acute care in hospital.

#### **Illegal drugs**

The study looked at all illegal drug use, including cannabis, cocaine and crack, and opioids such as heroin and other injection drugs. Although fewer Canadians die from illegal drug use than from alcohol or tobacco use, the deaths tend to involve younger people and so the impact is significant in terms of years of life lost.

In 2002, a total of 1,695 Canadians died as a result of illegal drug use, accounting for 0.8% of all deaths. The leading causes of death linked to illegal drug use were overdose (958), drug-attributable suicide (295), drug-attributable hepatitis C infection (165), and HIV infection (87). Deaths linked to illegal drugs resulted in 62,110 potential years of life lost. Illegal drug-attributed illness accounted for 352,121 days of acute care in hospital.

TABLE 2. THE SOCIAL COSTS OF TOBACCO, ALCOHOL AND ILLEGAL DRUGS IN CANADA, 2002

	(in millions of dollars)			
	Tobacco	Alcohol	Illegal drugs	TOTAL TAD
<b>1. Direct health care costs: total</b>	<b>4,360.2</b>	<b>3,306.2</b>	<b>1,134.6</b>	<b>8,800.9</b>
1.1 morbidity - acute care hospitalization	2,551.2	1,458.6	426.37	4,436.2
- psychiatric hospitalization	-	19.6	11.5	31.2
1.2 inpatient specialized treatment	-	754.9	352.1	1,107.1
1.3 outpatient specialized treatment	-	52.4	56.3	108.7
1.4 ambulatory care: physician fees	142.2	80.2	22.6	245.0
1.5 family physician visit	306.3	172.8	48.8	527.9
1.6 prescription drugs	1,360.5	767.6	216.8	2,344.9
<b>2. Direct law enforcement costs</b>	<b>-</b>	<b>3,072.2</b>	<b>2,335.5</b>	<b>5,407.8</b>
2.1 police	-	1,898.8	1,432.0	3,330.7
2.2 courts	-	513.1	330.6	843.7
2.3 corrections (including probation)	-	660.4	573.0	1,233.4
<b>3. Direct costs for prevention and research</b>	<b>78.1</b>	<b>53.0</b>	<b>16.5</b>	<b>147.6</b>
3.1 research	9.0	17.3	8.6	34.9
3.2 prevention programs	69.1	33.9	7.9	110.9
3.3 salaries and operating funds	-	1.8	-	1.8
<b>4. Other direct costs</b>	<b>87.0</b>	<b>996.1</b>	<b>79.1</b>	<b>1,162.2</b>
4.1 fire damage	86.5	156.5	-	243.0
4.2 traffic accident damage	-	756.9	67.0	823.9
4.3 losses associated with the workplace	0.5	17.0	6.6	24.1
<i>4.3.1 EAP &amp; health promotion programs</i>	0.5	17.0	4.2	21.7
<i>4.3.2 drug testing in the workplace</i>	N/A	-	2.4	2.4
4.4 administrative costs for transfer payments	0.0	65.8	5.4	71.3
<i>4.4.1 social welfare and other programs</i>	-	4.3	-	4.3
<i>4.4.2 workers' compensation</i>	-	61.5	5.4	66.9
<b>5. Indirect costs: productivity losses</b>	<b>12,470.9</b>	<b>7,126.4</b>	<b>4,678.6</b>	<b>24,275.9</b>
5.1 due to long-term disability	10,536.8	6,163.9	4,408.4	21,109.1
5.2 due to short-term disability (days in bed)	24.4	15.9	21.8	62.0
5.3 due to short-term disability (days with reduced activity)	36.2	23.6	-0.1	59.8
5.4 due to premature mortality	1,873.5	923.0	248.5	3,045.0
<b>Total</b>	<b>16,996.2</b>	<b>14,554.0</b>	<b>8,244.3</b>	<b>39,794.4</b>
<b>Total per capita (in \$)</b>	<b>541</b>	<b>463</b>	<b>262</b>	<b>1,267</b>
<b>Total as % of all substance-related costs</b>	<b>42.7</b>	<b>36.6</b>	<b>20.7</b>	<b>100.0</b>

TAD Tobacco, Alcohol, and Illegal Drugs

*Categories in italics are sub-categories of immediate prior category*

N/A not applicable

“-” not available

EAP Employee Assistance Programs

The impact of drug-attributed deaths is significant in terms of years of life lost.

## THE COSTS OF SUBSTANCE ABUSE IN 2002

Table 2 provides an overview of the social costs attributable to substance abuse by cost category for 2002. Because of differences in methodology, the numbers in this table, and especially in the indirect category, cannot be directly compared with costs for 1992.

It is estimated that the cost of substance abuse in Canada was about \$39.8 billion in 2002. This translates into \$1,267 for every living Canadian.

- The economic costs of tobacco abuse were estimated to be \$17 billion. This represented 42.7% of total substance abuse costs. The largest cost for this substance (approximately \$12.5 billion) was for lost productivity due to illness and premature death. Direct health care costs attributed to tobacco were estimated at about \$4.4 billion.
- Alcohol accounted for about \$14.6 billion in costs. This represented 36.6% of the total costs of substance abuse. The largest economic costs of alcohol were \$7.1 billion for lost productivity due to illness and premature death, \$3.3 billion in direct health care costs, and \$3.1 billion in law enforcement costs.
- Costs attributed to illegal drugs were estimated to be approximately \$8.2 billion. This represented 20.7% of the total costs of substance abuse. The largest economic costs were \$4.7 billion for lost productivity due to illness and premature death, \$2.3 billion for law enforcement costs, and more than \$1.1 billion in direct health care costs.

Overall, productivity losses constituted the largest part of the social costs (see Figure 1). This is a common finding of all social cost studies in the field of substance abuse and in the field of cost-of-illness studies generally. Figure 1 gives an overview of the relative proportion of the different cost categories.

## PROVINCIAL AND TERRITORIAL COSTS OF SUBSTANCE ABUSE IN 2002

Table 3 gives an overview of provincial and territorial costs attributable to alcohol, tobacco and illegal drugs. Overall, the toll of substance abuse was relatively uniform across Canada except in the territories where social costs were higher compared with the provinces. Estimates for the territories are conservative because some territorial residents may receive specialized treatment in neighbouring provinces and may be counted there. As well, the differences among provinces are slightly flattened because we used national averages in cases where no provincial data were available.

TABLE 3. TOTAL COSTS OF SUBSTANCE ABUSE IN CANADIAN PROVINCES AND TERRITORIES, 2002

Province	BC	AB	SK	MB	ON
Population	4,141,272	3,113,586	1,011,808	1,150,848	12,068,301
GDP (\$million)	149,957	112,744	36,638	41,673	436,997
<b>Tobacco total costs (\$million)</b>	<b>2,331.2</b>	<b>1,782.9</b>	<b>599.7</b>	<b>676.2</b>	<b>6,057.2</b>
Total as % of GDP	1.6	1.6	1.6	1.6	1.4
Total per capita (\$)	563	573	593	588	502
Total as % of all substance abuse	38.5	40.5	43.5	46.2	42.4
<b>Alcohol total costs (\$million)</b>	<b>2,219.0</b>	<b>1,640.6</b>	<b>508.7</b>	<b>518.4</b>	<b>5,318.4</b>
Total as % of GDP	1.5	1.5	1.4	1.2	1.2
Total per capita (\$)	536	527	503	450	441
Total as % of all substance abuse	36.6	37.3	36.9	35.4	37.2
<b>Illegal drugs total costs (\$million)</b>	<b>1,507.9</b>	<b>979.0</b>	<b>268.6</b>	<b>270.0</b>	<b>2,923.5</b>
Total as % of GDP	1.0	0.9	0.7	0.6	0.7
Total per capita (\$)	364	314	265	235	242
Total as % of all substance abuse	24.9	22.2	19.5	18.4	20.4
<b>Total substance abuse costs (\$million)</b>	<b>6,058.1</b>	<b>4,402.6</b>	<b>1,376.9</b>	<b>1,464.6</b>	<b>14,299.1</b>
<b>Total per capita (\$)</b>	<b>1,463</b>	<b>1,414</b>	<b>1,361</b>	<b>1,273</b>	<b>1,185</b>

GDP Gross Domestic Product

## WHAT THE RESULTS TELL US ABOUT SUBSTANCE ABUSE IN CANADA

At almost \$40 billion, the social costs of substance abuse were considerable for Canada in 2002. Behind the dollar figure is a dramatic toll measured in tens of thousands of deaths, hundreds of thousands of years of productive life lost, and millions of days spent in hospital. Although direct cost comparisons with Canada's first cost study (Single et al., 1996) are difficult, there is no doubt that health care costs associated with tobacco, alcohol and illegal drugs have risen since 1992. It is also evident that smoking-attributable costs actually decreased as a fraction of overall health care costs compared with alcohol and illegal drugs. At the same time, costs linked to illegal drug use have increased at a greater rate than costs for either tobacco or alcohol.

Cost estimation studies are not intended to explain causes of substance abuse; however, it is possible to identify some underlying trends that may have influenced the results we are presenting here. Canada's population is growing, so it is not surprising that deaths associated with substance abuse have also risen. Nevertheless, it must be noted that deaths from alcohol and illegal drug use have increased at a rate that exceeds the rate of population growth. Another reality is that Canada's population is aging and there are simply more people in the age groups (65 and older) that account for the majority of death, disability and disease in Canada.

A third consideration is a shift in cause of death. For example, in 1992, the largest cause of alcohol-attributed death was vehicle collisions followed by alcoholic liver cirrhosis. In 2002, that order was reversed. On the other hand, hepatitis C as a cause of drug-attributed death was insignificant in 1992. It is now in third place.

QC	NB	NS	PE	NF	YT	NW	NV
7,455,208	756,652	944,765	139,913	531,595	29,924	41,403	28,715
269,956	27,399	34,210	5,066	19,249	1,084	1,499	1,040
<b>3,963.5</b>	<b>468.0</b>	<b>625.5</b>	<b>78.6</b>	<b>363.7</b>	<b>10.8</b>	<b>19.1</b>	<b>20.0</b>
1.5	1.7	1.8	1.6	1.9	1.0	1.3	1.9
532	618	662	562	684	362	460	697
45.6	39.5	50.3	48.3	49.3	25.0	23.8	31.9
<b>3,098.8</b>	<b>451.7</b>	<b>418.9</b>	<b>53.9</b>	<b>246.5</b>	<b>20.6</b>	<b>39.5</b>	<b>27.6</b>
1.1	1.6	1.2	1.1	1.3	1.9	2.6	2.7
416	597	443	385	464	687	954	961
35.7	38.1	33.7	33.2	33.5	47.4	49.3	44.0
<b>1,626.9</b>	<b>264.4</b>	<b>200.2</b>	<b>30.1</b>	<b>126.8</b>	<b>12.0</b>	<b>21.5</b>	<b>15.1</b>
0.6	1.0	0.6	0.6	0.7	1.1	1.4	1.5
218	349	212	215	239	400	520	526
18.7	22.3	16.1	18.5	17.2	27.6	26.9	24.1
<b>8,689.2</b>	<b>1,184.1</b>	<b>1,244.6</b>	<b>162.5</b>	<b>737.0</b>	<b>43.4</b>	<b>80.1</b>	<b>62.7</b>
<b>1,166</b>	<b>1,565</b>	<b>1,317</b>	<b>1,162</b>	<b>1,386</b>	<b>1,449</b>	<b>1,934</b>	<b>2,184</b>

The steep rise in death and illness resulting from illegal drug use is striking. One of the most obvious contributors to drug-attributed death since 1992 has been the tragic increase in overdoses, especially in major urban centres such as Vancouver where at their peak drug overdose deaths were occurring at a rate of more than one a day. Hepatitis C has also become an important cause of drug-attributed death as mentioned above.

Increases in alcohol-attributed death and illness between 1992 and 2002 may be linked to changing patterns of use, including increased consumption of five or more drinks on a single occasion. The 2004 Canadian Addiction Survey (CAS) showed that more Canadians drink at hazardous levels than 10 years earlier.

Although still substantial, the burden of tobacco-attributed disease in Canada has eased somewhat and constitutes at least one bright spot in developments over the past 10 years. The reduction in smoking-attributable death and illness may be the result of improved tobacco control measures in the 1980s and '90s.

## WHAT THIS STUDY MEANS FOR THE FUTURE

Estimating social costs is important not only for assessing the status quo, but also for future programming and policy making in the area of substance abuse. However, estimating social costs is only the first step. Effective programming and policy making must be based on a comprehensive analysis of avoidable costs. Avoidable cost estimates provide valuable economic information that can be used as a basis for a more efficient allocation of resources. In the past year, there have been systematic efforts to establish guidelines for estimating avoidable costs attributable to substance abuse.

## Effective programming and policy making must be based on a comprehensive analysis of avoidable costs.

Studies such as this one can also provide a starting point for other types of studies with an increasingly sharp focus. Estimates of “costs incidence”, for example, can tell us how the external costs of substance abuse are distributed among various groups and communities in Canada. This can allow for the mobilization of support from groups such as the business sector for substance abuse prevention programs. “Disaggregated cost” estimates can show us costs by various categories and are valuable in assessing the cost-benefit or cost-effectiveness of harm reduction programs. “Budgetary impact” estimates can show the impact of substance abuse on government expenditures and revenues.

Through this hierarchy of cost estimation, we try to answer four basic questions:

1. What is the social cost of substance abuse?
2. How much of that cost is avoidable?
3. Where should we devote our resources in order to achieve the greatest return on investment?
4. How do we evaluate our investment in specific programs and policies?

Substance abuse is a problem that must be addressed on all fronts. As a social phenomenon it is probably unsurpassed in its complexity and deep-rootedness in Canadian life. Potential solutions to problems associated with the use of alcohol, tobacco and illegal drugs must be as subtle and diverse as the problems themselves... and the people they affect. This study attempts to shed some light on these subtleties and complexities. It is the hope of all the organizations and individuals associated with this study that it will help build a foundation for creative, effective and humane approaches to reducing the harms associated with substance abuse.