# The price of getting high, stoned and drunk in BC: A comparison of minimum prices for alcohol and other psychoactive substances


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## Overview

- This bulletin compares the price of alcohol in British Columbia with "standard doses" of six widely used illicit drugs.
- Street prices for illicit drugs were estimated by 1606 recreational and street drug users interviewed in Victoria and Vancouver over the past three years *(www.AODmonitoring.ca)*.
- BC government prices were provided by the BC Liquor Distribution Branch for October 2010
- CARBC surveyed prices in 150 BC private liquor stores between July and October 2010.
- Minimum prices in both government and private liquor stores were lower for some products than official minimum prices.
- Alcohol had the lowest minimum price at 58 cents for a standard drink, though hazardous forms of non-beverage alcohol (antifreeze, rubbing alcohol and mouthwash) were still cheaper.
- Other estimated lowest prices were $1.07 for a small joint of cannabis, $1.25 for half a tablet of ecstasy, $2.57 for 0.075 g of crack, $3.33 for 0.1 g of cocaine, $4.00 for 0.1 g of crystal meth and $8 for 0.1 g of heroin.
- The lowest price for exceeding national low risk drinking guidelines on a single day was $2.32 for a woman (4+ standard drinks) and $2.80 for a man (5+ standard drinks).
- Lowest prices for five "standard doses" of illicit substances were estimated to be: $5.35 for cannabis, $6.25 for ecstasy, $12.85 for crack, $16.67 for cocaine, $20 for crystal meth and $40 for heroin.
- Cannabis had the lowest median price of $1.87 for a small joint (0.25 g) followed by alcohol ($3.25) and ecstasy ($3.75). Alcohol had by far the highest price of $994 per standard drink for one product.
- Alcohol causes more preventable death, injury and illness in British Columbia than do illicit drugs and results in more presentations to treatment agencies.
- Minimum prices for alcoholic drinks in BC are not linked to the cost of living or to the alcohol content of drinks and are considerably lower than in Saskatchewan and Ontario.
- These findings are interpreted as supporting the need for a better cocktail of supply, demand and harm reduction strategies in BC e.g. more targeted alcohol pricing policies, managed alcohol programs, heroin prescription, opioid drug substitution programs and a well regulated legal market for cannabis.

**Table 1:** Median and lowest prices paid for different substances by illicit drug users (Total n=1606) and equivalent amounts estimated for single and 5+ standard dose occasions

| Drug type | Median prices paid | Median prices for a single dose | Range of prices for a single dose | Lowest prices for heavy use occasion (= 5+ doses) |
|---|---|---|---|---|
| Alcohol (store price data) | $3.25 per SD | $3.25 | $0.58 to $994 | $2.90 |
| Cannabis (n=888) | $7.50 per g | $1.87 | $1.07 to $2.50 | $5.35 |
| Ecstasy (n=306) | $7.50 per tablet | $3.75 | $1.25 to $6.25 | $6.25 |
| Crack (n=507) | $80 per g | $6.00 | $2.57 to $7.50 | $12.85 |
| Cocaine (n=602) | $70 per g | $7.00 | $3.33 to $10 | $16.67 |
| Crystal Meth (n=228) | $100 per g | $10 | $4.00 to $20 | $20 |
| Heroin (n=331) | $200 per g | $20.00 | $8 to $20 | $40 |

**Disclaimer:** The views expressed here are those of the authors alone and not necessarily those of the research funding agencies

## Introduction

This CARBC bulletin contrasts minimum, median and maximum prices for a range of different psychoactive substances with a focus on "standard doses" of alcohol and six commonly used illicit substances available for sale on the streets of Victoria and Vancouver. The price and availability of alcohol and other drugs are critical in determining their level of use in society, the extent of hazardous use and the prevalence of harmful outcomes (Babor et al, 2010, a and b). Another context for this exercise is a recent ***Lancet*** report providing assessments of the relative harmfulness of 20 psychoactive drugs (Nutt et al, 2010). Placing particular weight on harm to individual users and those around them, alcohol was rated the most harmful followed by heroin, crack cocaine and methamphetamine (crystal meth). Powder cocaine (ranked 5), cannabis (ranked 8) and ecstasy (ranked 16) are the other substances considered in this bulletin. We wish to examine how alcohol and other drug prices relate to their potential harmfulness.

Local data are reported on numbers of deaths, presentations to addictions treatment agencies and hospitalisations each year in British Columbia as part of the BC Alcohol and Other Drug Monitoring Project (Stockwell et al, 2009a; *www.AODmonitoring.ca*). For example, according to the Canadian Alcohol and Drug Use Monitoring Survey (*www.carbc.ca/AODMonitoring/ResearchComponents/GeneralPopulationSurveys.aspx*), alcohol is the most widely used drug in British Columbia with 81% of men and 73% of women reporting use in the previous year. By comparison, 16% of males and 10.6% of females had used cannabis, while 5.6% of males and 3.8% of females had used other illicit drugs. In 2008, alcohol caused 20,044 hospitalisations versus 4,723 for illicit drugs *(www.carbc.ca/AODMonitoring/ResearchComponents/MortalityMorbidity.aspx)*.

Alcohol is legally available in Canadian society and, moreover, is available for sale in government run liquor stores and, in most jurisdictions, is distributed for sale by government run distribution systems. The ostensible purpose of these government alcohol monopolies is to limit public health and safety problems associated with use of alcohol. British Columbia has a hybrid system in which over the past decade an increasing number of private liquor stores have been permitted to operate in competition with government stores. The resulting large increase in outlet density has been associated with significantly increased alcohol consumption (Stockwell et al, 2009b) and also alcohol-related deaths (Stockwell et al, in press). The BC Liquor Distribution Branch sets minimum markup prices on all alcoholic products (i.e. minimum amounts added to what the manufacturer charges), whether sold in government or private liquor stores. In addition, they set absolute minimum retail prices below which alcoholic products should not normally be sold in government stores.

It is increasingly recognised that there is a marketplace for recreational drugs in which a variety of legal and illegal substances compete (Cook, 2007; Stockwell, 2007). We recognise at the outset that different drugs are used for different effects, in different combinations and in a range of different contexts so that strict comparisons for a single "dose" are not straightforward. We have chosen a mixed methodology relying on both expert informants and self-reported patterns of drug use to determine approximate equivalences between different drug types for a) the smallest quantities typically used and b) an amount required to become intoxicated - "high" or "drunk". In the case of alcohol, these were considered to be respectively a) a single standard drink and b) a quantity of alcohol consumption to constitute a "binge" or heavy drinking occasion, namely 4 standard drinks for a woman and 5 standard drinks for a man (Adlaf et al, 2005). These consumption levels also just exceed those set for daily consumption in forthcoming low risk drinking guidelines for Canadian adults aged 25 to 65 years of age (National Alcohol Strategy Advisory Committee, in press)[1].

A number of different data sources were available to make this comparative exercise possible: 1606 interviews conducted every six months for the BC Alcohol and Other Drug Monitoring Project since late 2007 with illicit drug users in Victoria and Vancouver; a province-wide survey of 150 private liquor stores conducted between July and October 2010 and a comprehensive list of BC government liquor store prices applicable in October 2010. Comparative data on "official" minimum prices in BC, Ontario and Saskatchewan were also obtained being two other provinces in which authorities were prepared to share this information.

## Methods

### *Liquor branch data*

Alcoholic beverages are available for purchase in close to 200 government liquor stores and 1000 private liquor stores of different types. Prices are fixed for an inventory of products sold in government stores across the whole province. The prices for the 5506 products available for sale in BC government liquor stores in October 2010 were obtained from the BC government Liquor Distribution Branch. In addition, information on current minimum prices pertaining in Ontario and Saskatchewan were obtained from their respective liquor authorities.

[1] A Canadian standard drink refers to an amount of alcohol that is contained in 12 ounces of a 5% beer (or cooler or cider), a 5 ounce glass of 12% wine or 1.5 ounces of 40% spirits (17.05 mL or 13.45 grams of ethanol).

### *Private store data*

Prices for products available in private stores were obtained via a systematic survey of the whole province which resulted in a random sample of 150 private stores distributed across all geographic regions. The sampling strategy involved selecting at random two private liquor stores from each of the 89 local health areas (LHA's) in BC and then approaching them variously by telephone, in person or through the mail to complete a short questionnaire about prices on the day of the interview for a "basket" of popular alcoholic beverages which also included one lower alcohol content beer. The bulk of surveys were completed between July and September, with a very small number in June and October 2010. Some LHA's had less than two private liquor stores. In LHA's where there was a refusal one further store was identified and approached. This resulted in a total of 178 eligible stores, giving a response rate of 84%. Comparative prices for the specific products used in the basket of goods were obtained from the BC Liquor Distribution Branch website *www.bcliquorstores.com* on August 15, 2010 approximately halfway through the private store survey.

### *Alcohol and other drug monitoring interviews with illicit drug users*

The AOD Monitoring project began collecting data twice yearly on three high-risk populations in mid-2007 (Duff et al, 2009). These populations comprise (i) Street involved injecting drug users aged over 19 years (ii) Street involved youth aged 15 to 24 years who regularly use illicit drugs (iii) nightclub and rave party attendees who regularly use illicit drugs. These populations have been sampled using a standardised strategy and survey instrument with recruitment from a variety of street agencies in Victoria and Vancouver. Adult participants were given an honorarium of $20 and youth a $20 gift voucher. Interviews take place at a limited number of street agencies in both cities and at specific times advertised on posters advertising the study in those same agencies. The majority of participants attended specifically for interview at the advertised times while others were approached directly by the interviewer if they were attending the agency for other reasons. By summer of 2010, a total of 1606 completed interviews were available for analysis with equal representation across the two cities and slightly higher representation from the street involved adult illicit drug using cohort (39.1% of full sample) than the street involved youth or the club drug users (both 30.5%). Mean ages of each cohort were 40.8 years (range 19 to 76) for the adult drug users (65.7% male), 18.0 years (range 15 to 24 years) for the youth (56% male) and 28.1 years (range 19 to 71 years) for the club drug users (58.1% male). The surveys cover a broad range of topics including questions on drug use history, recent occasion drug use (yesterday, last weekend and last 30 days), drug use and related risk behaviours, drug markets (price, availability, perceived quality), perceived risks and harms associated with drug use, and health and socioeconomic indicators. A wide variety of specific drug categories are covered, such as: cocaine powder, crack cocaine, heroin, and crystal methamphetamine. Median, minimum and maximum drug prices were calculated across the entire sample of interviews after removing likely outliers in the data. Given these were self-reported data it was decided to remove the highest 5% and lowest 5% of self-reported prices for each category of drug to ensure that the problem of outliers (perhaps caused by under or over reporting and extremes in drug purity) was adequately dealt with.

### *Assumptions behind comparative analyses of quantities and prices*

The above data sources along with expert opinion were used to estimate approximate amounts of these very different types of substance that would be typically used a) on a single use occasion and b) on occasions when heavier use occurred associated with probable intoxication and impairment. The expert opinion is based on estimates from the large group of co-authors of this bulletin who collectively have scores of years experience interviewing, counselling and treating illicit drug users.

For alcohol we used the common idea in health promotion of a "standard drink" as the smallest unit usually consumed. Self-report from drug users and expert opinion suggested that a "small joint" of cannabis (roughly 0.25 g), half a tablet of ecstasy, a "small rock" of crack and a "point" of cocaine, methamphetamine (crystal meth) or heroin represented common single dose amounts. In the case of crack cocaine, many respondents gave prices in terms of numbers of grams purchased and local expert opinion suggested that a "small rock" usually sold for between $5 and $10 and contained 0.1 g of drug. Our estimation of amounts required to get "high" were based on the equivalent amounts to those assumed for "binge" drinking which in Canada usually amounts to 4 standard drinks for a woman and 5 standard drinks for a man (e.g. Adlaf et al, 2005). Because of uncertainty over the existence of similar differences between men and women in relation to the effects of illicit drugs the equivalent levels and related prices were calculated simply in terms of 5 "standard doses". This was also roughly equivalent to the typical quantities reported being used in one day by the respondents (see Table 5 below) i.e., our expert opinion and empirical data converged.

We were of course unable to take account of variations in the purity of drugs being reported, unlike the exact data we have on alcohol. There is no quality control in the illicit drug market and sales and consumption are often blind to actual purity. We are relying on average estimates made by several hundred individuals in relation to each drug type on the assumption that these underlying variations do not unduly effect these estimates.

## Results

### *The price of alcohol*

As shown in Table 2, the cheapest form of alcohol out of all products available in BC government liquor stores during October 2010 was a fortified wine which after the 12% Harmonised Sales Tax (HST) retailed at 62 cents for a standard drink. Varieties of cooler, cider, beer and wine were found that retailed for less than $1 after-tax (see Table 2). While spirits have higher government fixed minimum prices than other beverages, one variety of 75.4% strength rum was identified that retailed at $1.02 per standard drink. Across 5506 products available there was a huge variation with one brand of spirits retailing for $994 per standard drink. In several instances, products available for purchase in government liquor stores were below the government recommended minimum prices. The Liquor Distribution Branch advises these products were "de-listed" which meant they could be sold at cut price to be cleared out. For example, in October 2010 a 1 litre bottle of red wine was available for $5.88 compared with the $7.20 slated minimum price. It is important to note that government liquor store prices are fixed each month and do not vary from store to store for a given product.

**Table 2:** Prices charged in BC government liquor stores in October 2010 in dollars ***per standard drink*** for all examples of major beverage types

| Beverage | N products | Official Minimum* | Lowest Price* | Highest Price | Median Price |
|---|---|---|---|---|---|
| Fortified wine | 157 | $0.56 | $0.62 | $28.97 | $4.43 |
| Coolers/Cider | 111 | $0.73 | $0.71 | $5.51 | $1.66 |
| Beer | 509 | $0.75 | $0.77 | $4.94 | $1.86 |
| Wine | 3768 | $1.02 | $0.84 | $784 | $4.07 |
| Spirits | 731 | $1.35 | $1.01 | $994 | $2.11 |
| Liqueurs | 148 | $0.92 | $1.26 | $11.25 | $2.76 |
| Others | 82 | n/a | $0.98 | $141 | $4.35 |
| Total | 5506 | n/a | $0.62 | $994 | $3.25 |

*Calculated for a 22% fortified wine, 7% cooler, 8% beer, 12% wine, 40% liqueur and 40% tequila, being the cheapest products in each beverage category.

The CARBC survey of private store prices focused on a limited "basket" of different kinds of beverages, most of which were leading brands for popularity. The mean prices as well as minimum and maximum prices for an indicative selection of these products are shown in Table 3 in comparison with BC government liquor store prices. One sample t-tests were conducted to determine if mean values of the prices in the private store sample were significantly different from the set prices in government liquor stores. Average prices in private liquor stores were significantly higher than equivalent products sold in the government stores with a price differential of between 10% and 15% ($p<0.0001$ in each case). However, for all products surveyed there was at least one private store selling it for less than government liquor prices or, in one case, for the same price. In several instances, products were sold in private stores at below government recommended minimum prices. This is permitted so long as stores do not also sell for below *minimum markups* set by the BC Liquor Distribution Branch.

**Table 3:** Minimum, mean and maximum prices charged in BC private liquor stores surveyed between June and October 2010 in dollars per standard drink (SD) for selected drinks (n=150 BC stores) compared with BC government store prices applicable in August 2010.

| Products | N private stores with products* | % Alcohol Content | Lowest private store price/ SD | Highest private store price/SD | Mean private store price/SD | Government store price/SD |
|---|---|---|---|---|---|---|
| Malt Beer | 109 | 8% | $0.58 | $1.35 | $0.93 | $0.80 |
| Sherry | 69 | 22% | $0.62 | $1.10 | $0.78 | $0.62 |
| Beer | 109 | 6.1% | $1.11 | $1.50 | $1.33 | $1.18 |
| Rum | 146 | 40% | $1.31 | $1.89 | $1.55 | $1.35 |
| Wine | 118 | 12% | $1.32 | $3.34 | $1.78 | $1.51 |
| Cooler | 143 | 7% | $1.63 | $2.63 | $2.05 | $1.65 |
| Low alcohol Beer | 75 | 3.7% | $2.82 | $3.79 | $3.27 | $2.89 |

*Brand-name of specific products withheld in this publication to avoid inadvertent advertising.

There are a number of other cheap sources of alcohol in BC, notably duty-free, home-made, UBrew beers and ciders, UVint wines and coolers as well as sources of dangerous non-beverage alcohol such as antifreeze, mouthwash and rubbing alcohol. UBrew and UVint products are exempt from alcohol excise tax and can retail for as little as $0.70 a standard drink. Dangerous non-beverage products are even cheaper.

Table 4 contrasts the official BC minimum prices for government stores with those set for Ontario and Saskatchewan. It is unknown whether similar exemptions apply in these other provinces, whether stores in other provinces have the discretion to sell below these prices e.g. to clear items off-the-shelf. Compared with BC, Saskatchewan minimum prices are 89% higher for fortified wine, 71% higher for coolers/cider, 51% for beer 38% for wine and 44% higher for strong spirits. Ontario prices are 45% higher for fortified wine, 37% for coolers/cider, 33% higher for beer and 6% higher for spirits than in BC. Minimum prices for wine are 2% lower in Ontario than in BC.

**Table 4:** A comparison between effective minimum prices for the cheapest products in dollars per standard drink in British Columbia, Ontario and Saskatchewan

| Beverage | % Alcohol Content | BC Official Minimum* | Ontario Minimum Price* | Saskatchewan Minimum Price* |
|---|---|---|---|---|
| Fortified wine | 22% | $0.56 | $0.81 | $1.04 |
| Coolers/Cider | 7% | $0.73 | $1.00 | $1.25 |
| Beer | 8% | $0.75 | $1.00 | $1.49 |
| Wine | 12% | $1.02 | $1.00 | $1.41 |
| Spirits (Tequila) | 40% | $1.35 | $1.43 | $1.31 |
| Spirits (Rum) | 75.4% | $0.72 | $0.76 | $1.04 |

*Calculated for a 22% fortified wine, 7% cooler, 8% beer, 12% wine, 40% tequila and 75.4% rum being the cheapest products in each beverage category in BC.

## *Comparative minimum and mean prices for alcohol and illicit drugs*

Table 5 shows average quantities reported being used by drug users in the BC AOD Monitoring Project high-risk population interviews. It was estimated that equivalent amounts or a "standard dose" were: one standard drink of alcohol, one small joint of cannabis (a quarter of a gram), half a tablet of ecstasy, 0.1 g of cocaine, heroin or methamphetamine (crystal meth) or 0.075 g of crack cocaine.

**Table 5:** Mean quantities of different substances used on day before interview by illicit drug users (n=1606) and equivalent amounts estimated for low and high use occasions

| Drug Type (N used "Yesterday") | Mean quantities Used "Yesterday" | Estimated equivalent quantities for different drugs | |
|---|---|---|---|
| | | 1 standard dose | High Dose (= 5 standard doses) |
| Alcohol (n=381) | 4.4 SDs | 1 SD | 5 SDs |
| Cannabis (n=439) | 1.30 g | 1 small joint (.25 g) | 5 small joints (1.25 g) |
| Ecstasy (n=14) | 2.25 tablets | 0.5 Tab | 2.5 Tab |
| Crack (n=59*) | 0.6 g | 0.075 g | 0.4 g |
| Cocaine (n=83) | 0.4 g | 0.1 g | 0.5 g |
| Crystal Meth (n=38) | 0.5 g | 0.1 g | 0.5 g |
| Heroin (n=74) | 0.4 g | 0.1 g | 0.5 g |

*Based on 59 respondents who estimated consumption in "rocks" and assuming a small rock weighs 0.075 grams. A further 110 individuals also reported crack cocaine use variously in terms of "hoots", "tokes" and grams.

When the above methods were applied to develop comparative estimates of the minimum costs of a "low-dose" and a relatively "high-dose" of different drugs, alcohol purchased from a government liquor store is by far the cheapest followed by cannabis and ecstasy. As shown in Table 1 (see front page) it is estimated that 5 standard drinks can be obtained for as little as $2.90. The level considered to be a high risk drinking occasion in Canada for a woman of 4 standard drinks would cost only $2.32. Minimum prices to obtain five "standard doses" for cannabis and ecstasy are approximately 2 times higher and prices for "street drugs" such as cocaine, crystal meth, crack and heroin were between 5 and 15 times more expensive than alcohol. When median prices are compared, cannabis is the cheapest at $1.87 for a small joint compared with $3.25 per standard drink of alcohol and $3.75 for half a tablet of ecstasy.

## Discussion and conclusions

While it is difficult to make precise comparisons regarding equivalent doses of very different kinds of psychoactive drug administered in different ways, for different purposes and by different populations we suggest it is possible to make useful approximations with available data. In this exercise we have used a range of new data sets available to the BC Alcohol and Other Drug Monitoring Project and have operationalised the comparative amounts used in terms of a) standard doses typically taken b) a larger amount which would cause significant intoxication and impairment which we defined as 5 or more "standard doses". We have also paid special attention to lowest rather than mean prices because of evidence that these are of most concern from the public health and safety point of view (e.g. Meier et al, 2010; Kerr and Greenfield, 2007).

The most striking finding is that the sophisticated legal market for alcohol, currently containing at least 5500 products, offers the widest range of prices to consumers in British Columbia. Per standard drink prices across private and government liquor stores range from a low of $.58 to a high of $994. New national low risk drinking guidelines recommend adult Canadians never ***exceed*** 3 standard drinks in one day for a woman or 4 standard drinks for a man (Butt et al, in press). There are many products available for sale in both private and government liquor stores which allow the consumer to exceed these limits for less than $5 and for as low as $2.32 (for a woman) or $2.90 (for a man). It is well established that heavy drinkers and young drinkers are the most price sensitive and most likely to seek out cheaper products. A US study reported that the 10% of heaviest drinkers in terms of overall volume of intake purchased alcohol for an average of $.79 a standard drink whereas the lowest 50% of drinkers by volume spent an average of $4.75 per standard drink (Kerr and Greenfield, 2007). BC does set minimum prices for alcoholic beverages sold in its stores but these are only rarely updated and in the case of beer, wine, cider and coolers have not kept pace with inflation (Thomas et al, 2009). Furthermore, when compared with two other provinces for whom similar data are available (Saskatchewan and Ontario) BC minimum prices are substantially lower. We suggest there is substantial potential for raising minimum prices of alcohol in British Columbia in order to reduce the many thousand serious illnesses, injuries and hospitalisations associated with alcohol use each year. Because maximum prices are so high there is a clear potential to keep the average price of alcohol constant while implementing such an increase. Concerns that some alcohol dependent individuals would be more likely to resort to purchasing dangerous non-beverage sources of alcohol could be assuaged through the creation of managed alcohol programs in BC that have been successfully established in other parts of Canada (Podymow et al, 2006).

While alcohol has the lowest minimum price of the substances examined here and has been rated by the UK Independent Scientific Committee on Drugs (Nutt et al, 2010) as being the most harmful, the illicit drugs examined are mostly priced in accordance with their relative harmfulness e.g. heroin and cocaine are considerably more expensive than ecstasy and cannabis. Furthermore, these prices also reflect the relative prevalence of use of these different drugs with the most widely used tending to be the cheaper. The high prices users are prepared to pay for the more dangerous illicit drugs - often more than $100 per day - underscore the potential for harm reduction strategies involving drug prescription (Amato et al, 2003) or substitution (Mattick et al, 2007; Reiman, 2009; Lucas, 2009) to prevent crimes often committed to raise such funds to support a habit (Oviedo-Joekes et al, 2008). While considerably lower than the other illicit drugs, the prices consumers are prepared to pay for cannabis coupled with the relatively high prevalence of cannabis use in BC (Stockwell et al, 2006) are indicative of the substantial tax revenues the government could access were cannabis to be legalised - estimated to be in the region of $1.3 billion to $3.1 billion per annum (e.g. Easton, 2004).

In summary, these data on the relative prices of alcohol and other drugs are interpreted as underlining the preventative potential of a balanced suite of regulatory and harm reduction policies. This is an area of public policy in which it is possible to reduce the substantial toll of alcohol and drug-related harms presently experienced in BC society while simultaneously reducing economic costs on the one hand and increasing much needed revenues on the other.

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