

# Rapid Synthesis

Examining the Effectiveness and/or Cost-effectiveness of Policies for Reducing Alcohol Consumption

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HEALTH FORUM



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**Rapid Synthesis:**  
**Examining the Effectiveness and/or Cost-effectiveness of Policies for Reducing Alcohol**  
**Consumption**  
**30-day response**

27 January 2021

#### McMaster Health Forum and Forum+

The goal of the McMaster Health Forum, and its Forum+ initiative, is to generate action on the pressing health- and social-system issues of our time, based on the best available research evidence and systematically elicited citizen values and stakeholder insights. We aim to strengthen health and social systems – locally, nationally, and internationally – and get the right programs, services and products to the people who need them. In doing so, we are building on McMaster’s expertise in advancing human and societal health and well-being.

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#### Timeline

Rapid syntheses can be requested in a three-, 10-, 30-, 60- or 90-business-day timeframe. This synthesis was prepared over a 30-business-day timeframe. An overview of what can be provided and what cannot be provided in each of the different timelines is provided on the Forum’s Rapid Response program webpage ([www.mcmasterforum.org/find-evidence/rapid-response](http://www.mcmasterforum.org/find-evidence/rapid-response)).

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#### Conflict of interest

The authors declare that they have no professional or commercial interests relevant to the rapid synthesis. The funder played no role in the identification, selection, assessment, synthesis or presentation of the research evidence profiled in the rapid synthesis.

#### Merit review

The rapid synthesis was reviewed by a small number of policymakers, stakeholders and researchers in order to ensure its scientific rigour and system relevance.

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## KEY MESSAGES

### Question

- What is the effectiveness and/or cost-effectiveness of policies targeted at reducing alcohol consumption?

### Why the issue is important

- Alcohol consumption is the world's third largest risk factor for disease, attributable for 5.1% of the global burden of disease, and has been established as a major cause of a range of acute and chronic conditions, including cancer.
- Leading cancer agencies in the world agree that several cancer sites (e.g., lip and oral cavity, pharynx, oesophagus, colon and rectum, liver, breast and larynx) are causally linked to alcohol use, and it has been found that alcohol consumption was one of the leading risk factors for cancer development and cancer death globally, representing 4.2% of all cancer deaths, and 10.3 million cancer disability-adjusted life years lost (approximately 4.2% of all cancer disability-adjusted life years lost).
- Canadians are also among the largest consumers of alcohol in the world, with the most recent data included in the 2020 World Health Statistics Report indicating that Canadians aged 15 years and older consumed 10 litres of alcohol per capita per year as compared to the global average of 6.2 litres per capita per year.
- Given the clear risks associated with alcohol consumption, federal, provincial, territorial and municipal governments have an important role in developing and implementing evidence-informed policies to reduce the consumption of alcohol.
- To inform these efforts, this rapid response aims to examine the cost-effectiveness (for governments and society) and effectiveness of policies that address the availability, marketing and pricing of alcohol.

### What we found

- We identified 46 relevant documents including five overviews of systematic reviews, 39 systematic reviews, and two rapid reviews.
- For availability, we grouped findings into four policy options: 1) selling through government monopolies; 2) establishing a minimum purchase age; 3) regulating outlet density; and 4) setting days and hours of sale.
- Overall, we found that:
  - government monopolies may be an effective intervention to limit the sales and consumption of alcoholic beverages, although caution was required as the form of privatization varies across studies;
  - increased minimum purchase age for alcoholic beverages and enforcement of it were effective for reducing overall alcohol consumption, and that reducing the minimum drinking is likely to result in increased alcohol-related harm;
  - increased outlet density was associated with increased alcohol consumption in three recent reviews, but two older reviews reported mixed results on the effects of outlet density; and
  - controlling days of sale reduced alcohol consumption, and increasing the days of sales at off-premises locations is likely to increase alcohol sales and/or consumption.
- For marketing, we grouped findings into four policy options: 1) regulating the volume of advertising from alcohol manufacturers; 2) requiring plain packaging for alcohol and/or adding warning labels to alcohol packaging; 3) establishing self-regulation for alcohol marketing; and 4) advertising from government authorities to minimize harm of alcohol use.
- Within marketing and advertising of alcohol, we found that:
  - exposure to advertisements or promotion can lead to higher consumption or increased risk of initiation, and marketing restrictions are cost-effective to reduce alcohol use and related harm;
  - there was mixed evidence for whether adding warning labels to alcohol packaging reduces alcohol use, suggesting that it may not be a cost-effective option;
  - self-regulation for alcohol marketing was associated with alcohol advertising that contained inappropriate themes for vulnerable populations which violated content guidelines; and
  - there is limited/mixed evidence that advertising from government authorities can reduce alcohol use and harm.
- For pricing policies, we grouped findings from one overview of systematic reviews and seven systematic reviews according to two policy options: 1) increasing the price of alcohol products; and 2) incentivizing the purchase of non-alcoholic beverages.
- An up-to-date overview of reviews which analyzed findings from 30 reviews (including six overview of reviews, seven meta-analyses, three meta-regressions and 14 narrative reviews) concluded that there is indisputable evidence that higher alcohol prices are associated with lower alcohol consumption.
- No reviews were identified that investigated interventions that incentivized substitution from alcohol to non-alcohol beverages, however, pricing strategies such as subsidies can increase consumption of healthy foods.

## **QUESTION**

What is the effectiveness or cost-effectiveness of policies targeted at reducing alcohol consumption?

## **WHY THE ISSUE IS IMPORTANT**

As of 2016 (the most recent data included in the World Health Statistics Report), alcohol was responsible for 3 million global deaths (or 5.3% of all deaths) annually.(1) Alcohol consumption is currently the world's third largest risk factor for disease, attributable for 5.1% of the global burden of disease, with clear links to conditions such as neuropsychiatric disorders, gastrointestinal diseases, cancer, intentional injuries, unintentional injuries, cardiovascular diseases and diabetes.(1) Moreover, leading cancer agencies in the world agree that several cancer sites (e.g., lip and oral cavity, pharynx, oesophagus, colon and rectum, liver, breast and larynx) are causally linked to alcohol use.(2) It has also been found that alcohol consumption was one of the leading risk factors for cancer development and cancer death globally, representing 4.2% of all cancer deaths, and 10.3 million cancer disability-adjusted life years lost (approximately 4.2% of all cancer disability-adjusted life years lost).(3)

Canadians are also among the largest consumers of alcohol in the world. The most recent data included in the 2020 World Health Statistics Report indicates that Canadians aged 15 years and older consumer 10 litres of alcohol per capita as compared to the global average of 6.2 litres per capita.(1) In addition, almost one-fifth (19.1% in 2018 and 18.3% in 2019) of Canadians over the age of 12 are classified as heavy drinkers.(4)

Given the clear risks associated with alcohol consumption and the levels of alcohol consumption in Canada, federal, provincial, territorial and municipal governments have an important role in developing and implementing evidence-informed policies to reduce the consumption of alcohol. These policies may include decreasing access and availability of alcohol (e.g., via taxation, minimum pricing, outlet density, minimum age for sale, hours of sale), and regulating marketing and advertising of alcohol (e.g., plain packaging and volume of advertising).

The World Health Organization (WHO) Global Strategy to Reduce the Harmful Use of Alcohol was adopted in 2010 at the 63<sup>rd</sup> World Health Assembly.(5) The strategy categorizes 10 target policy areas to reduce the consumption of alcohol: 1) educational information through awareness and political commitments; 2) health-sector responses; 3) community action to reduce harmful alcohol use; 4) drinking-and-driving policies and counter-measures; 5) addressing alcohol availability; 6) addressing marketing of alcoholic beverages; 7) pricing policies; 8) harm reduction; 9) reducing the public health impact of illegal and illicit alcohol; and 10) monitoring and surveillance.(5) While the strategy recommends adopting policies from each of the targeted areas to provide a comprehensive approach, due to the compressed timeframe of this rapid review and the requestor's areas of interest, our findings focus on target areas five (addressing alcohol availability), six

### **Box 1: Background to the rapid synthesis**

This rapid synthesis mobilizes both global and local research evidence about a question submitted to the Forum's Rapid Response program. Whenever possible, the rapid synthesis summarizes research evidence drawn from systematic reviews of the research literature and occasionally from single research studies. A systematic review is a summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select and appraise research studies, and to synthesize data from the included studies. The rapid synthesis does not contain recommendations, which would have required the authors to make judgments based on their personal values and preferences.

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This rapid synthesis was prepared over a 30-business-day timeframe and involved four steps:

- 1) submission of a question from a policymaker or stakeholder (in this case, the Canadian Partnership Against Cancer);
- 2) identifying, selecting, appraising and synthesizing relevant research evidence about the question;
- 3) drafting the rapid synthesis in such a way as to present concisely and in accessible language the research evidence; and
- 4) finalizing the rapid synthesis based on the input of at least two merit reviewers.

(addressing marketing of alcohol beverages), and seven (pricing policies). Additional findings from the other target areas, where included in retrieved literature, have been included in Appendix 1.

## **WHAT WE FOUND**

We identified 46 relevant documents with evidence of effectiveness and/or cost-effectiveness of policies targeted at addressing alcohol availability, marketing of alcohol or pricing of alcohol. This includes five overviews of systematic reviews, (6-9) 39 systematic reviews, (10-48) and two rapid reviews. (49; 50) We provide an overview of the number of documents included according to the approach and policy options they address in Table 1.

### **Addressing alcohol availability**

Public policies that seek to regulate the commercial or public availability of alcohol are important measures to reduce consumption in the population, and may contribute to changing the social and cultural norms that promote the harmful use of alcohol. The existing level of availability of alcohol will be dependent on local social, cultural and economic contexts, including the presence of an illicit or informally produced market for alcohol.

We have grouped possible policy options for addressing alcohol availability according to the following four approaches:

- selling through government monopolies;
- establishing a minimum purchase age;
- regulating outlet density; and
- setting days and hours of sale.

We included three overviews of systematic reviews, 11 systematic reviews and two rapid reviews that provide key findings in relation to one or more of these policy options. We provide key findings below and in Table 2, which is followed by a summary of the highlights from the table. For those who want to know more about the included syntheses in this section, a fuller description is provided in Appendix 2.

### **Box 2: Identification, selection and synthesis of research evidence**

We identified research evidence (systematic reviews and primary studies) by searching (in October 2020) Cochrane Library, EconLit, HealthEvidence ([www.healthevidence.org](http://www.healthevidence.org)), Health Systems Evidence ([www.healthsystemsevidence.org](http://www.healthsystemsevidence.org)), Medline and PubMed, PsychInfo and Social Systems Evidence ([www.socialsystemsevidence.org](http://www.socialsystemsevidence.org)). The combination of search terms generally combined alcohol and synonyms for alcohol-related harm (e.g., alcohol misuse and alcohol abuse) with synonyms for terms related to the three areas of focus (availability, marketing and pricing) and the policy options included within them. Given that the search approach used was tailored to the features of each database, we provide the detailed searches conducted for the databases in Appendix 1.

The results from the searches were assessed by one reviewer for inclusion. A document was included if it fit within the scope of the questions posed for the rapid synthesis.

For each systematic review we included in the synthesis, we documented the focus of the review, key findings, last year the literature was searched (as an indicator of how recently it was conducted), methodological quality using the AMSTAR quality appraisal tool (see the Appendix for more detail), and the proportion of the included studies that were conducted in Canada. For primary research, we documented the focus of the study, methods used, a description of the sample, the jurisdiction(s) studied, key features of the intervention, and key findings. We then used this extracted information to develop a synthesis of the key findings from the included reviews and primary studies.

**Table 1: Overview of the number of documents included according to the approach and policy options they address**

Approaches	Policy options	Overviews of systematic reviews (n=4)	Full systematic reviews (n=39)	Rapid reviews (n=2)
Addressing alcohol availability	Selling through government monopolies	2	1	1
	Establishing a minimum purchase age	2	3	1
	Regulating outlet density	0	5	2
	Setting days and hours of sale	3	4	2
Addressing marketing of alcoholic beverages	Regulating the volume of advertising from alcohol manufacturers	2	12	2
	Requiring plain packaging for alcohol and/or adding warning labels to alcohol packaging	1	7	0
	Establishing self-regulation for alcohol marketing	0	1	0
	Advertising from government authorities to minimize harm of alcohol use	0	3	0
Pricing policies	Increasing the price of alcohol products	1*	3*	0
	Incentivizing the purchase of non-alcoholic beverages	0	3	0

\*The overview of reviews included 30 reviews that examined the impact of taxes and prices on alcohol use. We specifically highlighted findings from one review included in the overview of reviews that examined price strategies such as minimum pricing, and included two reviews of economic evaluations not included in the overview of reviews

**Table 2: Summary of key findings about the effectiveness or cost-effectiveness of policies addressing alcohol availability**

Policy options	Key findings
Selling through government monopolies	<p><b><i>Key findings related to effectiveness or cost-effectiveness of policy options</i></b></p> <ul style="list-style-type: none"> <li>One review on privatization of alcohol sales found a mean increase in per capita sales of privatized beverages of 44%, with an interquartile interval of 5% to 123%</li> <li>Overall, the evidence showed that population-level consumption increased after privatization, but it was noted that while the sales of non-privatized alcohol beverages decreased, the absolute increase in privatized alcohol beverage sales remained greater (16)</li> </ul> <p><b><i>Additional key findings related to benefits and harms of policy options</i></b></p> <ul style="list-style-type: none"> <li>One study included in a review showed that higher prices as a result of privatization did not affect consumers' purchasing behaviour, contrary to what would be expected (note that findings from a single study that haven't been verified by a larger body of evidence should be interpreted with caution)</li> <li>Non-significant decreases in traffic fatalities or night-time motor vehicle crashes after privatization were observed</li> </ul>



Policy options	Key findings
	<ul style="list-style-type: none"> <li>Re-monopolization in Sweden was associated with reductions in most of the alcohol-related harms assessed across all age groups, but many of these effects were not significant (16)</li> <li>One recent overview of systematic reviews and an older rapid synthesis found that government monopolies significantly benefit consumption-related harm, however the older rapid synthesis suggests that when a monopoly is not possible, implementing a licensing system for selling alcohol (with the collection of fees) may have similar benefits (6; 50)</li> </ul>
Establishing a minimum purchase age	<p><b><i>Key findings related to effectiveness or cost-effectiveness of policy options</i></b></p> <ul style="list-style-type: none"> <li>Three reviews found that increasing the minimum legal drinking age was effective at reducing alcohol consumption and alcohol-related risks and negative outcomes</li> <li>An older review found a statistically significant inverse relationship between the legal drinking age and alcohol consumption in 35% of analyses; they found in 45% of analyses that a higher legal drinking age was associated with decreased alcohol consumption (20)</li> <li>Two more recent reviews concluded that lowering the minimum legal drinking age from 21 in the U.S. would likely increase the harm to the drinker, including drug dependence and mortality (12; 14)</li> </ul> <p><b><i>Additional key findings related to benefits and harms of policy options</i></b></p> <ul style="list-style-type: none"> <li>Two reviews found that lowering the minimum legal drinking age increased alcohol-related traffic crashes (12; 14)</li> </ul>
Regulating outlet density	<p><b><i>Key findings related to effectiveness or cost-effectiveness of policy options</i></b></p> <ul style="list-style-type: none"> <li>Three out of five reviews focusing on outlet density found that increased outlet density was associated with increased alcohol consumption (11; 18; 19)</li> <li>Two reviews found mixed results and estimates or effects were difficult to calculate due to the cross-sectional nature of many studies, and variations in exposure and outcome measures (10; 17)</li> </ul> <p><b><i>Additional key findings related to benefits and harms of policy options</i></b></p> <ul style="list-style-type: none"> <li>Three reviews found that increased outlet density was also associated with increased alcohol-related harms including rates of violence, motor-vehicle accidents, crime, injuries, and sexually transmitted diseases (11; 17; 18)</li> <li>One recent rapid review found a strong association between density of outlets and social disorder, but the association for consumption or health harms was unclear (49)</li> </ul>
Setting days and hours of sale	<p><b><i>Key findings related to effectiveness or cost-effectiveness of policy options</i></b></p> <ul style="list-style-type: none"> <li>One older overview of systematic reviews found that reducing hours of sale resulted in averting 250 to 750 Disability-Adjusted Life Years (DALY) per one million population (8)</li> <li>However, the overview found that in sub-regions with low and moderate rates of hazardous drinking, health gains were in the range of 10 to 400 DALYs per one million population</li> <li>Studies and systematic reviews included in one recent rapid synthesis found that reducing opening hours of bars and restaurants targeting the most densely populated areas with simultaneous enforcement may be cost-effective (49)</li> <li>The effect of reducing access to retail outlets for specified periods of the week has the potential to be cost-effective if fully enforced (50)</li> <li>Three reviews evaluating alcohol consumption in response to changes in the alcohol availability concluded that controlling hours and days of sale reduced alcohol consumption</li> </ul>

Policy options	Key findings
	<ul style="list-style-type: none"> <li>• One review found that alcohol consumption increased if the days of sale were increased, especially if alcohol sales were allowed on Saturdays or Sundays (13)</li> <li>• A meta-analysis showed that an additional day of sale was associated with a 3.4% increase in total per capita consumption (19)</li> <li>• An older review found that included studies supported the conclusion that controlling hours and days of sale can be an effective intervention, which was concordant with the recommendations by the WHO to limit hours and days of sale</li> <li>• However, caution in interpreting the results was suggested as alcohol sales could have been influenced by several overlapping changes such as increased marketing and lower prices, which made it difficult to isolate and interpret the effects of hours and days of alcohol availability (18)</li> </ul> <p><b><i>Additional key findings related to benefits and harms of policy options</i></b></p> <ul style="list-style-type: none"> <li>• Two reviews included in a recent overview of systematic reviews found that restricting opening hours was effective for reducing alcohol consumption when implemented regionally, nationally or in isolated communities, however, two other reviews found that these policies had mixed effects when implemented in less isolated areas (6)</li> <li>• Another recent overview of systematic reviews supported this finding, reporting conflicting evidence on the effect of limiting hours of operation, as the effectiveness of these policies depends largely on the availability and hours of operation in surrounding jurisdictions (7)</li> <li>• One older systematic review and a recent rapid synthesis found an association between hours of sale of alcohol and increases in alcohol-related harms, including drinking and driving and road accidents, but the association was less clear for the effects on alcohol consumption or health harms (49; 51)</li> <li>• Two older reviews found significant increases in alcohol-related motor casualties and assaults with increased temporal availability (13; 18)</li> <li>• An older review noted that one study found significant increases in weekly alcohol consumption by men, but a nonsignificant change was noted in women who drank (13)</li> <li>• An older review noted that four studies that assessed the effect of increasing the days of sales at off-premises locations found that alcohol sales and/or consumption increased (13)</li> <li>• Two reviews reported that later evening hours significantly increased alcohol sales and consumption (18; 19)</li> <li>• One older rapid synthesis cautioned that strict regulations on the availability of alcohol may create an opportunity for an illicit market, notably in jurisdictions where large illicit markets already exist (50)</li> </ul>

### *Selling through government monopolies*

Two overviews of systematic reviews, one systematic review and one rapid review on government monopolies were identified in the literature search. Two of the 52 included systematic reviews from the overview of systematic reviews concluded that privatization led to increased excessive consumption with re-monopolization showing the reverse.(52) The other overview of systematic reviews found two systematic reviews that suggested that government monopolization significantly benefits consumption-related harm, as well as reducing drinking and driving.(6) These findings were supported by another systematic review in which 12 different privatization events were evaluated and a mean increase of 44% in per capita sales of privatized beverages was noted, suggesting that there was a population-level increase in the consumption of alcohol.(16) However, the impact of privatization extended to non-privatized alcohol beverages as well. The

review noted a decrease in sales of non-privatized beverages, yet the net effect of privatization was maintained as an overall increase in sales, as the decrease in non-privatized beverages was not enough to counter the increase in sales of privatized beverages.(16) The findings from the rapid synthesis suggested that government monopolies can reduce alcohol-related harm as there tends to be fewer stores with less hours of service in this system.(21) The evidence suggested that government monopolies may be an effective intervention to limit the sales and consumption of alcoholic beverages, although caution was required as the form of privatization varied across studies.

#### *Establishing a minimum purchase age*

We found two overviews of systematic reviews, three systematic reviews and a rapid review that focus on the effects of the minimum legal drinking age on alcohol consumption and alcohol-related risks and harmful outcomes. The first overview of systematic reviews included two systematic reviews which found that in combination with government monopolization of sales, enforcement of minimum drinking-age limits significantly benefit consumption-related harm and reduces drinking and driving.(6) The second overview of reviews similarly indicated that enforcing minimum legal drinking ages was found to have small meaningful benefits, however, other strategies such as taxation were found to be more effective in reducing use.(7)

All three systematic reviews found that increasing the minimum purchase age for alcoholic beverages was effective for reducing overall alcohol consumption. For instance, an older review (i.e., conducted more than five years ago) found a statistically significant inverse relationship between the legal drinking age and alcohol consumption in 35% of their included analyses. Furthermore, they found in 45% of analyses that a higher legal drinking age was associated with decreased alcohol consumption.(20) A more recent review (i.e., conducted within the last five years) focused on the effect of reducing the minimum legal drinking age in the United States from 21 to 18 years old, and found that allowing people who are 18-20 years of age to legally purchase alcohol statistically significantly increased drinking participation by six percentage points.(12) In addition, the majority of studies included in an older systematic review found evidence indicating that a higher minimum legal drinking age was associated with lower levels of alcohol consumption.(14) The rapid review also noted that minimum age laws were effective in combination with other approaches (e.g., increasing price, changing outlet density and reducing hours of sales) in limiting availability and reducing drunk driving.(50)

The two more recent reviews both concluded that lowering the minimum legal drinking age from 21 in the United States would likely increase the alcohol-related harm to the drinker, including drug dependence, traffic crashes, and mortality.(12; 14) Furthermore, the same two reviews concluded that lowering the minimum legal drinking age would increase overall alcohol-related traffic crashes.

#### *Regulating outlet density*

We found five systematic reviews and two rapid reviews that focused on the association between outlet density and alcohol consumption. Three of the systematic reviews, found that increased outlet density was associated with increased alcohol consumption.(11; 18; 19) Two older systematic reviews reported mixed results.(10; 17) It was noted in the literature that the magnitude of the effects was difficult to calculate due to the cross-sectional nature of many studies, and variations in exposure and outcome measures. However, a study included in one of the reviews specifically found that a 1.0% increase in take-away alcohol-outlet density was associated with a 0.15% increase in total alcohol consumption.(10; 19) Nonetheless, the included literature also suggested the need for more longitudinal and qualitative studies to elucidate the relationship between alcohol availability and use, and to examine causal pathways.(10) As noted in the previous section, one rapid review indicated that a combination of approaches (e.g., minimum-age laws, increasing price, changing outlet density and reducing hours of sales) were effective in limiting availability and reducing drunk driving.(50) The other rapid review indicated that, generally, the evidence supports that higher outlet density is related to higher levels of social disorder, however, the relationship is less clear for alcohol consumption or health harms.(49)

### *Setting days and hours of sale*

Three overview of reviews, four systematic reviews (including a recent meta-analysis) and two rapid syntheses were found to evaluate the effect of temporal availability on alcohol use. Three reviews concluded that controlling days of sale reduced alcohol consumption.(13; 18; 19) The meta-analysis indicated that an additional day of sale was associated with a 3.4% increase in total per capita consumption.(19) One review found that increasing the hours when alcohol may be sold by more than two hours increased alcohol-related harms.(15) Another review indicated that four studies, which assessed the effect of increasing the days of sales at off-premises locations, found that alcohol sales and/or consumption increased.(13) Two reviews also noted significant increases in alcohol-related motor casualties and assaults with increased temporal availability.(13; 18)

It is important to note that much of the included literature largely focused on the effectiveness of policies, rather than on their cost-effectiveness. However, two systematic reviews included in a recent rapid synthesis found that reducing opening hours of bars and restaurants in densely populated areas with simultaneous enforcement across areas may be cost-effective.(49) It was, however, noted in the literature that some caution was needed in the implementation of policies that curb availability of alcohol, suggesting that it may result in increases in the illicit market.(50) Two systematic reviews included in a recent overview of systematic reviews suggested that restricting days or hours of sale and setting a minimum age of purchase were cost-effective when implemented regionally, nationally or in isolated communities.(6) However, the overview of systematic reviews suggested that these policies had mixed effects when implemented in less isolated areas.(6) These findings were supported by a recent overview of systematic reviews which found that the effectiveness of these policies depended largely on the availability and hours of operation in surrounding jurisdictions.(7) Lastly, a recent modelling study carried out for 16 countries that investigated the “best buys” for alcohol control (e.g., increase excise taxes on alcoholic beverages, enactment and enforcement of bans or comprehensive restrictions on exposure to alcohol advertising and/or of restrictions on the physical availability of alcohol in retail sources) concluded that availability restrictions were “highly cost effective.”(53)

### **Addressing marketing of alcoholic beverages**

Restricting the marketing of alcohol, particularly to adolescents and young adults, is important for reducing the demand (and future demand) among younger populations. The Global Strategy to Reduce the Harmful Use of Alcohol reports that marketing techniques have grown in their sophistication, including linking alcohol brands to cultural activities, sponsorships and an increased social-media presence.(5) These techniques mean that stopping the marketing of alcohol at national borders or restricting marketing to certain ages, hours or locations is becoming increasingly difficult and is an emerging concern in many jurisdictions.

We have grouped possible policy options for addressing alcohol availability according to the following four approaches:

- regulating the volume of advertising from alcohol manufacturers;
- requiring plain packaging for alcohol and/or adding warning labels to alcohol packaging;
- establishing self-regulation for alcohol marketing; and
- advertising from government authorities to minimize harm of alcohol use.

We included three overviews of systematic reviews, 23 systematic reviews and two rapid reviews that provide key findings in relation to one or more of these policy options. We provide key findings below and in Table 3, which is followed by a summary of the highlights from the table. For those who want to know more about the included syntheses in this section, a fuller description is provided in Appendix 3.

**Table 3: Summary of key findings about the effectiveness or cost-effectiveness of policies addressing alcohol marketing**

Policy options	Key findings
Regulating volume of advertising from alcohol manufacturers	<p><b><i>Key findings related to effectiveness or cost-effectiveness of policy options</i></b></p> <ul style="list-style-type: none"> <li>• One systematic review included in an overview found that an advertising ban will be more cost-effective than other alcohol-misuse policies in areas with a low prevalence of hazardous drinkers (8)</li> <li>• Modelling studies included in one rapid review found that complete marketing bans could be one of the most effective and cost-effective approaches to prevention, however there are significant losses in both effectiveness and cost-effectiveness as a complete ban moves to a partial ban (49)</li> <li>• Out of the 12 reviews identified, eight found a positive association between alcohol advertising on portrayal in media on alcohol use, where advertising included digital media, television or film, or traditional advertisements (i.e., billboards) (23-25; 29; 31; 37; 38; 54)</li> <li>• Although the effect size was not clear across reviews, a single meta-analysis reported that viewing alcohol advertisements increased immediate alcohol consumption relative to viewing non-alcohol advertisements by approximately 1.6 alcohol units (95 % CI 0.39, 2.67) by the average male drinker, or an increase of 1.0 alcohol units (95% CI 0.3, 1.7) by the average female drinker, on the heaviest drinking day (38)</li> <li>• Four reviews found no or inconclusive evidence for the association between alcohol advertising and use</li> <li>• Two of these reviews specifically commented on the methodological limitations of the included studies and suggested that longitudinal studies that focus on the causal relationship were needed (10; 27)</li> <li>• Two reviews further discussed that other marketing factors, such as product, price and placement, also influence alcohol consumption</li> <li>• One review suggested that these factors may dynamically interact with advertising to influence alcohol use, while the second found that the relationship between promotion and alcohol use was the strongest amongst these other marketing components (price, product, placement) (27; 34)</li> </ul> <p><b><i>Additional key findings related to benefits and harms of policy options</i></b></p> <ul style="list-style-type: none"> <li>• One recent overview of systematic reviews found that restrictions or bans on alcohol advertising may be effective at reducing alcohol consumption, however limitations in the methods used in four systematic reviews prevented making a strong conclusion (7)</li> <li>• One recent review found that persuasive advertising campaigns to discourage drinking were more effective than alcohol labelling (42)</li> <li>• Modelling studies included in a recent rapid synthesis found evidence for the benefits of addressing marketing of alcohol beverages</li> <li>• In particular, the synthesis found an association between exposure to advertising and alcohol consumption, estimating that each 10% increase in advertising results in a 0.3% increase in consumption (49)</li> <li>• The same synthesis noted that the strongest evidence for the effect of marketing on alcohol consumption came from longitudinal studies of youth, which found that increased exposure to alcohol advertising during childhood increased the consumption of alcohol throughout their youth and early-adult years (49)</li> </ul>
Requiring plain packaging for alcohol and/or adding warning labels to alcohol packaging	<ul style="list-style-type: none"> <li>• One recent overview of systematic reviews found mixed results for the effects of counter-advertising, suggesting that it may not be a cost-effective option for reducing consumption levels (6)</li> <li>• Five reviews and one study found that alcohol warning labels had little or no effect on drinking behaviours of both young and older adults (26; 33; 35; 39; 40; 42)</li> </ul>

Policy options	Key findings
	<ul style="list-style-type: none"> <li>Two of these reviews point out that while warning labels can be a useful source of information for alcohol consumers, their impact on behavioural change can be limited by cultural norms about alcohol, such as public opinion on the positive benefits of alcohol (26; 40)</li> <li>One review included three randomized controlled trials which evaluated health warning labels that targeted alcohol products, with two studies findings that alcohol was consumed at a faster rate for those in the control condition compared to those exposed to image-and-text and text-only warning labels, and the other study found lower acceptability ratings of alcoholic drink with a health warning label as compared with the control condition (22)</li> </ul>
Establishing self-regulation for alcohol marketing	<p><b>Key findings related to effectiveness or cost-effectiveness of policy options</b></p> <ul style="list-style-type: none"> <li>One review on self-regulation concluded that alcohol advertising contained inappropriate themes for vulnerable populations which violated content guidelines, and youth exposure to alcohol advertising was high, which provided the basis for recommending a total ban or strict regulation of alcohol marketing (32)</li> </ul> <p><b>Additional key findings related to benefits and harms of policy options</b></p> <ul style="list-style-type: none"> <li>One review noted that self-regulation had did not have an impact on the content of alcohol advertising over time, and that the use of attractive models, physical success, health and humour has been maintained (32)</li> </ul>
Advertising from government authorities to minimize harm of alcohol use	<p><b>Key findings related to effectiveness or cost-effectiveness of policy options</b></p> <ul style="list-style-type: none"> <li>A recent review of social-marketing interventions for minimizing harm from alcohol consumption examined the evaluation of 23 social-marketing interventions</li> <li>Although none of the interventions seeking to minimize harm from alcohol employed a complete application of social-marketing principles, social-marketing interventions were found to be largely effective in creating positive effects through changing behaviours and policies to affect short-term or immediate changes, and also attaining longer-term change via attitudes, behavioural intentions, and/or increased awareness (30)</li> </ul> <p><b>Additional key findings related to benefits and harms of policy options</b></p> <ul style="list-style-type: none"> <li>A recent review of the effectiveness of mass-media campaigns for reducing alcohol-impaired driving and alcohol-related crashes could not conclude that media campaigns reduced the risk of alcohol-related injuries or crashes (41)</li> </ul>

#### *Regulating the volume of advertising alcohol by manufacturers*

We identified two overviews of systematic reviews, 12 systematic reviews and two rapid reviews that investigated the association between alcohol advertising and alcohol use. Overall, the literature suggests that exposure to alcohol advertisements or promotion can lead to higher consumption or increased risk of initiation.

One of the overview of reviews found that restrictions or bans for alcohol advertising lacked methodological consistency across four included systematic reviews, and the poor methodological quality reviews made it difficult to assess if such approaches are effective in reducing alcohol consumption.(7) The other overview of reviews (which was older) found one systematic review suggesting that in areas with a low prevalence of hazardous drinkers, an advertising ban will be more cost-effective than other alcohol-misuse interventions.(8)

Of the 12 systematic reviews, eight (five recent and three older) found a positive association between alcohol advertising or portrayal in media on alcohol use, where advertising included digital media, television or film,

or traditional advertisements (e.g., billboards).(23-25; 29; 31; 37; 38; 54) Four reviews found no or inconclusive evidence for the association between alcohol advertising and use. Two of these reviews specifically commented on the methodological limitations of the included studies and suggested that longitudinal studies that focus on the causal relationship were needed.(10; 27; 34; 36) Although the effect size was not clear across reviews, a meta-analysis reported that viewing alcohol advertisements increased immediate alcohol consumption relative to viewing non-alcohol advertisements by approximately 1.6 alcohol units (95 % CI 0.39, 2.67) by the average male drinker, or an increase of 1.0 alcohol units (95% CI 0.3, 1.7) by the average female drinker, on the heaviest drinking day.(38) In addition, an old rapid review indicated that evidence has generally shown a weak relationship between advertising and consumption of alcoholic beverages.(50) However, the other rapid review (which was more recently conducted) indicated that while there is relatively little evidence to assess the impact of marketing on alcohol consumption, the evidence that does exist reports that for each 10% increase in advertising expenditure there is a 0.3% increase in consumption.(49)

We did not identify any reviews that specifically examined the cost-effectiveness of advertising and marketing restrictions. However, a recent modelling study carried out for 16 countries that investigated the “best buys” for alcohol control concluded that marketing restrictions were “highly cost effective”.(53) One of the rapid reviews also indicated that the literature generally agrees, but noted that as these bans move towards partial bans they may decrease substantially in effectiveness and cost-effectiveness.(49)

#### *Requiring plain packaging for alcohol and/or adding warning labels to alcohol packaging*

With regards to the implementation of warning labels, one recent overview of systematic reviews found mixed results for the effects of counter-advertising, suggesting that it may not be a cost-effective option for reducing consumption levels.(6) In addition, six systematic reviews found that alcohol warning labels had little or no effect on drinking behaviours of both young and older adults.(26; 33; 39; 40; 42; 55) Two of these reviews point out that while warning labels can be a useful source of information for alcohol consumers, their impact on behavioural change can be limited by cultural norms about alcohol, such as public opinion on the positive benefits of alcohol.(26; 40) One of the reviews found that labelling of alcohol units was helpful in supporting individuals to understand their consumption.(42) However, the review found that while warning labels are beneficial for increasing knowledge, they do not mitigate drinking behaviours.(42) Another review included three randomized controlled trials which evaluated health warning labels that targeted alcohol products, with two studies findings that alcohol was consumed at a faster rate for those in the control condition compared to those exposed to image-and-text and text-only warning labels, and the other study found lower acceptability ratings of alcoholic drink with a health warning label as compared with the control condition.(22)

#### *Establishing self-regulation for alcohol marketing*

We identified one recent systematic review which evaluated 96 publications on the content of alcohol advertising, the adherence to advertising codes, and alcohol advertising exposure to determine the effectiveness of self-regulation of alcohol marketing. Nineteen studies assessed the content of alcohol advertising and all studies noted evidence of code violations. It was also found that guidelines associated with social or sexual success or guidelines to protect youth were most violated. The review concluded that alcohol advertising contained inappropriate themes for vulnerable populations which violated content guidelines, and youth exposure to alcohol advertising was high, which provided the basis for recommending a total ban or strict regulation of alcohol marketing.(32)

#### *Advertising from government authorities to minimize harm of alcohol use*

A recent review of social marketing interventions for minimizing harm from alcohol consumption examined the evaluation of 23 social-marketing interventions. Although none of the interventions seeking to minimize harm from alcohol employed a complete application of social-marketing principles, social-marketing

interventions were found to be largely effective in creating positive effects through changing behaviours and policies to affect short-term or immediate changes, and also to attain longer-term change via attitudes, behavioural intentions, and/or increased awareness.(30) Additionally, a recent review of the effectiveness of mass-media campaigns for reducing alcohol-impaired driving and alcohol-related crashes could not conclude that media campaigns reduced the risk of alcohol-related injuries or crashes.(41) Lastly, an older review noted that it was not able to conclude whether the use of social marketing for alcohol prevention changes alcohol-related attitudes and behaviours.(28)

## Pricing policies

Given that consumers are sensitive to changes in the price of drinking, pricing policies are among the most extensively researched public-health approaches to reduce alcohol consumption. They can be used in a variety of different ways including targeting select at-risk groups, reducing the progression towards drinking large volumes of alcohol, or changing population drinking preferences towards beverages with lower alcohol content.(5) However, the success of these policies is context specific, and is largely determined by a jurisdiction's tax system (e.g., ability to effectively and efficiently collect and enforce taxation), alcohol preferences and drinking norms, income, and what sources for alcohol exist in nearby jurisdictions.

We have grouped possible policy options for pricing policies according to the following two approaches:

- increasing the price of alcohol products; and
- incentivizing the purchase of non-alcoholic beverages.

We included one overview of systematic reviews and six systematic reviews that provide key findings in relation to one or more of these policy options. We provide key findings below and in Table 4, which is followed by a summary of the highlights from the table. For those who want to know more about the included syntheses in this section, a fuller description is provided in Appendix 4.

**Table 4: Summary of key findings about the effectiveness or cost-effectiveness of policies addressing pricing**

Policy options	Key findings
Increasing the price of alcohol products	<p><b><i>Key findings related to effectiveness or cost-effectiveness of policy options</i></b></p> <ul style="list-style-type: none"> <li>• An up-to-date overview of reviews which analyzed findings from 30 reviews (including six overview of reviews, seven meta-analyses, three meta-regressions and 14 narrative reviews) concluded that there was indisputable evidence that higher alcohol prices were associated with lower alcohol consumption (9) <ul style="list-style-type: none"> <li>○ Overall, reviews suggested short- and long-run total own-price elasticity for alcohol of about -0.5 and -0.8 and own-price elasticities of about -0.3 for beer, -0.6 wine, and -0.5 to -0.8 for spirits</li> <li>○ Reviews generally concluded that higher taxes and prices were associated with less frequent harmful drinking practices such as heavy episodic drinking, although the magnitude of these associations was generally unclear</li> <li>○ The evidence reviewed suggested that non-tax price strategies such as minimum pricing likely reduce alcohol consumption</li> <li>○ One review specifically examined the effect of minimum-unit pricing on alcohol consumption and concluded that such price-based alcohol policy interventions were likely to reduce alcohol consumption</li> </ul> </li> <li>• Increasing the price of alcohol by increasing taxes can also be expected to increase tax revenue, as the demand for alcohol is most certainly inelastic (9)</li> <li>• A systematic review aimed to identify and assess the cost-effectiveness of public-health interventions concluded (based on 12 studies evaluated alcohol</li> </ul>



Policy options	Key findings
	<p>prevention) that excise tax increases, minimum pricing, and off-trade discounts bans were cost-effective or dominant (i.e., cost-saving) (47)</p> <ul style="list-style-type: none"> <li>• A recent review examined the associations between drink specials, drink special laws, and alcohol-related outcomes and found a consistent positive association between drink specials and increased alcohol consumption, heavy drinking, and alcohol intoxication (48)</li> </ul> <p><b><i>Additional key findings related to benefits and harms of policy options</i></b></p> <ul style="list-style-type: none"> <li>• Reviews provided no evidence that alcohol price responsiveness differed by socio-economic status, mixed and contradictory evidence with respect to age and sex, and no evidence about the potential impact of higher prices or taxes on alcohol initiation or cessation (9)</li> <li>• Reviews suggested potentially policy-relevant substitution among alcohol beverages within a given category, but little substitution across beverage categories and between alcohol and other harmful products such as tobacco and psychoactive drugs (9)</li> <li>• Alcohol taxes, as most consumption taxes, are regressive (i.e., a tax that imposes a greater burden on lower-income individuals than on individuals with higher incomes) and, as a result, the lack of evidence of socio-economic differences in alcohol-price responsiveness suggests that alcohol-tax increases may disproportionately affect lower-income individuals</li> <li>• Revenues generated by these taxes can, however, be used to support programs that disproportionately benefit the poor</li> <li>• Additionally, in as much as the poor consume more alcohol, their health burden is greater and tax increases will have a progressive health impact (9)</li> </ul>
Incentivizing the purchase of non-alcoholic beverages	<p><b><i>Key findings related to effectiveness or cost-effectiveness of policy options</i></b></p> <ul style="list-style-type: none"> <li>• No reviews were identified that investigated interventions that incentivize the substitution from alcohol to non-alcohol beverages</li> <li>• A recent review of pricing strategies to encourage availability, purchase and consumption of healthy foods and beverages concluded that pricing interventions generally increased stocking, sales, purchasing and consumption of promoted foods and beverages (45)</li> </ul> <p><b><i>Additional key findings related to benefits and harms of policy options</i></b></p> <ul style="list-style-type: none"> <li>• A review examined evidence from field interventions on the effectiveness of monetary subsidies in promoting healthier food purchases and consumption, and all but one study found subsidies on healthier foods to significantly increase the purchase and consumption of promoted products (44)</li> </ul>

### *Increasing the price of alcohol products*

An up-to-date overview of reviews which analyzed findings from 30 reviews (including six overviews of reviews, seven meta-analyses, three meta-regressions and 14 narrative reviews) concluded that there is indisputable evidence that higher alcohol prices are associated with lower alcohol consumption.(9)

Overall, reviews suggested short- and long-run total own-price elasticity for alcohol of about -0.5 and -0.8, and own-price elasticities of about -0.3 for beer, -0.6 wine, and -0.5 to -0.8 for spirits. Put differently, a 1% increase in the price of alcohol products was associated with a decrease of 0.3, 0.6 and 0.8% in beer, wine, and spirits consumption, respectively. Reviews generally concluded that higher taxes and prices were associated with less frequent harmful drinking practices such as heavy episodic drinking, although the magnitude of these associations was generally unclear. Additionally, there was evidence that non-tax price strategies such as minimum pricing likely reduced alcohol consumption. One of the included reviews

specifically examined the effect of minimum unit pricing on alcohol consumption and concluded that price-based alcohol-policy interventions such as minimum-unit pricing were likely to reduce alcohol consumption.(56)

A recent review examined the associations between drink specials, drink special laws, and alcohol-related outcomes and found a consistent positive association between drink specials and increased alcohol consumption, heavy drinking, and alcohol intoxication.(48)

Increasing the price of alcohol by increasing taxes can also be expected to increase tax revenue, as the demand for alcohol is most certainly inelastic (i.e., the change in demand is proportionally smaller than the change in price). A systematic review which aimed to identify and assess the cost-effectiveness of public-health interventions concluded (based on 12 studies evaluating alcohol prevention) that excise tax increases, minimum pricing, and off-trade discount bans were cost-effective or dominant (i.e., cost-saving).(47) A recent modelling study carried out for 16 countries that examined the “best buys” for alcohol control concluded that pricing policies represented a “highly cost-effective” use of resources.(53)

Reviews provided no evidence that alcohol-price responsiveness differed by socio-economic status, mixed and contradictory evidence with respect to age and sex, and no evidence about the potential impact of higher prices or taxes on alcohol initiation or cessation.(9) Alcohol taxes, as most consumption taxes, are regressive (i.e., a tax that imposes a greater burden on lower-income individuals than on individuals with higher incomes). As a result, the lack of evidence of socio-economic differences in alcohol price responsiveness suggests that alcohol-tax increases may disproportionately affect lower-income individuals (i.e., if lower-SES individuals are not more sensitive to price than higher-SES individuals).(9) Revenues generated by these taxes can, however, be used to support programs that disproportionately benefit the poor. Additionally, if higher-SES individuals consume more alcohol, as is the case in most high-income countries including Canada,(57) an increase in alcohol taxes may, on net, be progressive.(9)

#### *Incentivizing the purchase of non-alcoholic beverages*

No reviews were identified that investigated interventions that incentivized the substitution from alcohol to non-alcohol beverages. A recent review of pricing strategies to encourage availability, purchase, and consumption of healthy foods and beverages concluded that pricing interventions generally increased demand and consumption of promoted foods and beverages.(45)

## **Discussion**

Much of the research included in this rapid synthesis focused on average effects (with the exception of age) with scarce discussion of the potential of policies to have heterogeneous effects between groups (e.g., sex/gender, SES). For example, the weak evidence base regarding socio-economic differences in price responsiveness warrants more research. Moreover, although there is overwhelming evidence that higher prices reduce alcohol consumption, little research has been conducted, or at least synthesized, on the optimal tax structure to reduce alcohol use and improve health. In addition, COVID-19 has led to the enactment of policies that both increased and decreased the availability of alcohol. For example, Ontario has allowed restaurants to sell alcohol with food takeout and delivery (a policy change that appears to be permanent) and Vancouver has allowed alcohol consumption in public parks. Ontario has also introduced temporary measures to prohibit alcohol sales at licensed establishments after 11 p.m. The overall impact of these policies on alcohol use and ultimately health is difficult to assess and represent a novel avenue of research.

Some potential limitations of this rapid synthesis are worth noting. First, although the focus of the rapid synthesis was to examine effectiveness or cost-effectiveness of policies targeted at reducing alcohol consumption, some of the included evidence did not specifically investigate alcohol policies, and instead

focused on exposure. For example, reviews have indicated that exposure to advertisements or promotion was associated with higher alcohol consumption or increased risk of initiation. Such evidence does not necessarily imply that restricting advertising would lead to lower alcohol consumption or initiation. Second, much of the research examined focused on the effectiveness rather than the cost-effectiveness of policies to reduce alcohol use. This is, at least in part, because all policies examined are population-level interventions. Population-level interventions such as taxes, and alcohol availability and marketing restrictions do not require substantial initial or continuing investments while targeting a very wide net. Third, in the context of addressing the marketing of alcoholic beverages, much of the literature has focused on the effectiveness of partial restrictions and not total and comprehensive bans. In the tobacco-control context, there is substantial evidence that comprehensive bans on the marketing activities of tobacco companies are effective in reducing tobacco use, but partial marketing bans have little or no effect.<sup>(58)</sup> Fourth, many of the overview of reviews and reviews included in this rapid synthesis are based on a similar pool of primary studies and as such cannot be considered independent from one another (analyzing the individual studies of included reviews was beyond the scope of this synthesis). Fifth, most interventions in each of the policy options examined are not amenable to experimental design. Consequently, reviews that look exclusively at, or put more weight on, evidence from randomized controlled trials may conclude that the evidence base is weak. Lastly, data extraction from included reviews was not independently conducted by two reviewers. Data extraction was conducted by one reviewer, and then verified by a second reviewer.

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## APPENDIX

The following tables provide detailed information about the overviews of systematic reviews, systematic reviews, and rapid reviews identified in the rapid synthesis. From these documents, we extracted the focus of the review, key findings, last year the literature was searched, and the proportion of studies conducted in Canada.

In the appendix tables, the fourth column presents a rating of the overall quality of each review. The quality of each review has been assessed using AMSTAR (A Measurement Tool to Assess Reviews), which rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. It is important to note that the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to delivery, financial or governance arrangements within health systems. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, a review that scores 8/8 is generally of comparable quality to a review scoring 11/11; both ratings are considered “high scores.” A high score signals that readers of the review can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the review should be discarded, merely that less confidence can be placed in its findings and that the review needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1):S8).

All of the information provided in the appendix tables was taken into account by the authors in describing the findings in the rapid synthesis.



## Appendix 1: Details of search strategy used to identify relevant syntheses

### 1) Cochrane Library

((Alcohol AND harm) OR alcohol abuse OR alcoholic OR alcoholism OR alcohol misuse OR alcohol addiction OR alcohol consumption OR alcohol dependence OR alcohol drinking OR drinking behaviour OR alcohol drinking patterns OR alcohol-related disorders) AND

(marketing OR social marketing OR advertising OR packaging OR product packaging OR package OR warning OR health warning label OR health warnings OR warning label OR self-regulation OR alcohol trading hours OR alcohol outlet density OR alcohol outlet OR alcohol sales OR alcohol availability OR closing time OR outlet density OR hours of sale OR drinking hour OR operating hours OR privatization OR monopolization OR monopoly OR minimum age OR drinking age OR legal age OR purchase age)

limited to topic area: “tobacco, drugs alcohol”, “alcohol”

### 2) EconLit

((Alcohol AND harm) OR alcohol abuse OR alcoholic OR alcoholism OR alcohol misuse OR alcohol addiction OR alcohol consumption OR alcohol dependence OR alcohol drinking OR drinking behaviour OR alcohol drinking patterns OR alcohol-related disorders) AND

(marketing OR social marketing OR advertising OR packaging OR product packaging OR package OR warning OR health warning label OR health warnings OR warning label OR self-regulation OR alcohol trading hours OR alcohol outlet density OR alcohol outlet OR alcohol sales OR alcohol availability OR closing time OR outlet density OR hours of sale OR drinking hour OR operating hours OR privatization OR monopolization OR monopoly OR minimum age OR drinking age OR legal age OR purchase age)

AND

Review

limits: last 15 years, reviews

### 3) HealthEvidence ([www.healthevidence.org](http://www.healthevidence.org))

alcohol AND (marketing OR availability)

limits; last 15 years, topic area limited to addiction/substance use and alcohol abuse/use

### 4) Health Systems Evidence ([www.healthsystemsevidence.org](http://www.healthsystemsevidence.org))

Alcohol (searched for overviews of systematic reviews, systematic reviews of effects and systematic reviews addressing other questions)

### 5) Medline

(Alcohol AND harm) OR alcohol abuse OR alcoholic OR alcoholism OR alcohol misuse OR alcohol addiction OR alcohol consumption OR alcohol dependence OR alcohol drinking OR drinking behaviour OR alcohol drinking patterns OR alcohol-related disorders AND

marketing OR social marketing OR advertising OR packaging OR product packaging OR package OR warning OR health warning label OR health warnings OR warning label OR self-regulation OR alcohol trading hours OR alcohol outlet density OR alcohol outlet OR alcohol sales OR alcohol availability OR closing time OR outlet density OR hours of sale OR drinking hour OR operating hours OR privatization OR monopolization OR monopoly OR minimum age OR drinking age OR legal age OR purchase age

limits: reviews, published within the past 15 years

#### **6) PubMed**

(policy and (economic evaluation or cost-effective\* or economic analys\*) and ((Alcohol and harm) or "alcohol abuse" or "alcohol use" or "alcoholic" or "alcoholism" or "alcohol misuse" or "alcohol addiction" or "alcohol consumption" or "alcohol dependence" or "alcohol use disorder"))

Filters: From 2018/1/1 to 2020/10/30 (to update the search conducted in a previous version of this rapid synthesis)

#### **7) PsychInfo**

(Alcohol AND harm) OR alcohol abuse OR alcoholic OR alcoholism OR alcohol misuse OR alcohol addiction OR alcohol consumption OR alcohol dependence OR alcohol drinking OR drinking behaviour OR alcohol drinking patterns OR alcohol-related disorders AND

marketing OR social marketing OR advertising OR packaging OR product packaging OR package OR warning OR health warning label OR health warnings OR warning label OR self-regulation OR alcohol trading hours OR alcohol outlet density OR alcohol outlet OR alcohol sales OR alcohol availability OR closing time OR outlet density OR hours of sale OR drinking hour OR operating hours OR privatization OR monopolization OR monopoly OR minimum age OR drinking age OR legal age OR purchase age

limits: reviews, published within the past 15 years

#### **8) Social Systems Evidence ([www.socialsystemsevidence.org](http://www.socialsystemsevidence.org))**

alcohol AND (marketing OR availability)

limits: last 15 years

## Appendix 2: Summary of findings from systematic reviews about the effectiveness or cost-effectiveness of policies addressing alcohol availability

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
<b>Selling through government monopolies</b>					
Overview of systematic reviews	Effectiveness alcohol-control interventions included in the 2010 World Health Organization Global Strategy to Reduce the Harmful Use of Alcohol (59)	Fifteen reviews evaluated availability interventions including licensing restrictions on trading times, minimum drinking age, outlet density and distance, retail privatization and dram shop liability with significant overlap between reviews. The evidence was deemed uncertain for licensing restrictions (including banning sales, and making changes to the hours, days and volumes of alcohol sales) but that reducing outlet density was deemed possibly beneficial.	2017	No rating tool available for overviews of systematic reviews	0/42
Overview of systematic reviews	Effectiveness of public-health interventions to reduce alcohol-related harm (6)	<p>This overview of systematic reviews examined evidence on the effectiveness of population-level interventions in non-clinical settings to reduce alcohol consumption or related health or social harm. Evidence was collected and analyzed based on key policy areas: alcohol server setting, availability, illicit alcohol, taxation, mass media, drinking and driving, schooling, higher education, family and communities, and workplace. The majority of studies examining server setting, which included interventions such as server training, community nightlife interventions and driver-home services, found mixed effects of these interventions on alcohol consumption, suggesting this policy area may not be entirely cost-effective or feasible in all contexts. The next policy area, availability, included interventions such as restricting opening hours and government monopolization of sales. Two of the eight reviews in this area found that such interventions would be cost-effective if implemented regionally or in isolated communities, and two other studies found that government monopolization and enforcing minimum drinking age limits significantly benefit consumption-related harm and drinking and driving.</p> <p>All three reviews examining taxation found clear and consistent evidence that increasing alcohol price or taxation reduces overall consumption and related harm. Of the three reviews examining the effects of mass media, two meta-analyses calculated an overall beneficial effect of mass-media campaigns on alcohol use or behaviour; however, both lack primary study details. One review found conflicting evidence regarding the effectiveness of counter-advertising, suggesting this may not be a cost-effective technique to reduce harm. Eleven reviews examined the policy area of drinking and driving, with three high and medium-quality reviews concluding that driver checkpoints and enforcing lower blood-alcohol concentrations have the greatest effect on reducing fatal accident rates. One review also found that alcohol-themed road safety campaigns were more effective at reducing harms compared to non-alcohol themed interventions. Overall,</p>	2013	No rating tool available	23/52

*Examining the Costs and/or Cost-effectiveness of Policies for Reducing Alcohol Consumption*

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p>based on 11 reviews, results for policy interventions in schools demonstrated mixed results; the study concludes that such interventions are highly population- and setting-specific.</p> <p>Regarding higher-education settings, only one review out of four was of high quality; nonetheless, the results from all studies indicated indeterminate effects of social-norm interventions and alcohol-consumption-restriction policies for fraternity-based student housing. Three reviews focused on family and community interventions and found that parenting interventions, rather than those between various health workers and families, were the most effective in reducing alcohol use and initiation. Regarding the policy focus within the workplace, two studies found that general workplace alcohol-based interventions such as mandatory testing, staff training and health information mail-outs indicated a beneficial effect on alcohol consumption or harm. However, the review urges caution in applying the effectiveness of these findings broadly, as heterogeneity of study setting and design as well as a lack of intervention replication may impinge on the generalizability of these results.</p>			
Systematic review	Effectiveness of alcohol privatization on alcohol consumption (16)	<p>This review focused on studies which evaluated the effects of privatizing alcohol retail sales on excessive alcohol consumption. Three key points were addressed in this review: will retail privation of a specific type of alcohol beverage lead to increased excessive consumption; can privatization reduce excessive consumption of alcohol beverages which are not privatized; and will there be a reduction of excessive consumption if state control over retail sales is re-established. Per capita alcohol consumption was used as a proxy for excessive alcohol consumption which is a common practice. Seventeen studies were found examining the effects of 12 different privatization events in seven U.S. states, two Canadian provinces, and Finland. Higher prices of alcohol beverages in a privatized setting were reported in most of the studies.</p> <p>The mean increase in per-capita sales of privatized beverages was 44.4%, with an interquartile interval of 4.5% to 122.5%. Differences were noted between some studies with regard to the public-health outcome and privatization relationship. One study in Iowa found an increase in wine consumption after privatization which contrasted with another study in which a non-significant wine sale increase was observed following privatization. Only one study assessed alcohol consumption through self-report, finding an overall increase in alcohol consumption after privatization. In seven settings, the effect of privatization on non-privatized alcoholic beverages was noted. Although the sales of non-privatized beverages decreased, it was not enough to counter the increase of privatized beverage sales. Of the 20 cross-sectional and panel studies, 17 studies found that privatization was associated with greater consumption of alcohol, however, four studies observed decreased consumption. Overall, the evidence showed that population-level consumption increased after privatization.</p> <p>The review indicated a need for clarification on the association between privatization and several patterns of excessive alcohol consumption, such as binge drinking. The degree of government regulation also varies, producing different forms of privatization, which the study suggested would be useful to examine.</p>	2010	5/10 (AMSTAR rating from McMaster Health Forum)	3/13

# McMaster Health Forum

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
Rapid review	Effectiveness and cost-effectiveness of policies to reduce alcohol-related harms (50)	<p>The review examines the effects various policies have on alcohol-related harms. These policies include: information and education; health-sector programs; community programs; drunk-driving policies; addressing the availability of alcohol; addressing the marketing of alcohol; pricing policies; harm reduction; and reducing the public-health effect of illegally and informally produced alcohol.</p> <p><u>Information and education</u></p> <p>Evidence has generally found that information and education campaigns do not lead to sustained behaviour change, though they may serve to increase knowledge about alcohol and its use, such as in the case of classroom education. Similarly, mandated health warnings have been found to increase the intention to change, but have not been found to effect long-term behaviour change. No findings were available on the effectiveness of publicizing drinking guidelines.</p> <p><u>Health-sector programs</u></p> <p>Early identification and brief advice has been found to be the most effective evidence-based treatment for those with hazardous or harmful alcohol use, but who are not severely dependent. Furthermore, the treatment has been found to be effective for this population regardless of the level of intensity.</p> <p>For those with severe dependence, effective treatments include behavioural therapies and pharmacological therapies.</p> <p><u>Community programs</u></p> <p>Community programs include: education and information campaigns; media advocacy; counter-advertising and health promotion; controls on selling and consumption venues; enhanced law enforcement; and community organization and coalition development.</p> <p>Evidence has found that media advocacy may lead to reframing solutions to alcohol-related problems, and as a result increase attention to alcohol on political and public agendas.</p> <p>Generally, interventions that control access such as changing where alcohol is sold and distributed are effective in reducing alcohol-related fatalities and violence.</p> <p><u>Drunk-driving policies</u></p> <p>Evidence on policies to reduce drunk driving have generally found the following to be effective: increase in the price of alcohol; minimum purchase age laws; changing the outlet density; establishment of a legal concentration of alcohol in the blood; and use of ignition locks.</p>	2009	No rating tool available	Not reported

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p><u>Availability of alcohol</u></p> <p>Government monopolies on the sale of alcohol may help to reduce alcohol-related harms, however, when that policy option is not available implementing licensing systems (with collection fees) for retailers to sell alcohol, can mimic the retail control and have some of the same benefits as a government monopoly.</p> <p>Other policies that control the availability of alcohol including implementing minimum drinking age, restricting the density of outlets, and reducing times of sale, have been found to lead to fewer alcohol-related problems, including homicides and assaults.</p> <p>One caution however, is that strict availability of alcohol can create an opportunity for an illicit market. This policy challenge can usually be managed on a small scale through enforcement, however, these policies should be implemented cautiously in places where a large illicit market already exists.</p> <p><u>Marketing of alcoholic beverages</u></p> <p>Evidence has generally shown a weak relationship between advertising and consumption of alcoholic beverages. The strongest evidence however comes from longitudinal studies which show an association between advertising and youth drinking.</p> <p><u>Pricing policies</u></p> <p>Alcohol has been shown to be a fairly inelastic good, however, increases in prices do result in some reduction in consumption, and also serve to increase government revenue. There is however, a need to consider overall consumption levels, beverage preferences and time period for tax increases as each of these will have an impact on the implementation of the policy and may dictate the extent to which there is a boom in the illicit market.</p> <p><u>Harm reduction</u></p> <p>Safety-oriented environments and employment of security staff have both been shown to be effective in reducing alcohol-related harm. While interventions modifying the behaviour of people serving alcohol have not on their own been effective, when coupled with additional enforcement these have also been shown to reduce harms.</p> <p><u>Illegally and informally produced alcohol</u></p>			

# McMaster Health Forum

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		Policy options for curbing the illegally and informally produced alcohol market include banning methanol from all products and introducing tax stamps to show that a duty has been paid. Generally, the banning of methanol has been found to be effective in reducing morbidity and mortality in jurisdictions with high use of illegal or informally produced alcohol.			
<b>Establishing a minimum purchase age</b>					
Overview of systematic reviews	Effectiveness of public-health interventions to reduce alcohol-related harm (6)	Key findings provided above under the policy option for selling through government monopolies.	2013	No rating tool available	23/52
Overview of reviews	Examining the effectiveness of prevention, early interventions, harm reduction and treatments of substance abuse in young people (7)	This systematic review of reviews focused on policy strategies that aim to address the use of tobacco, alcohol and illicit drugs in young people. It identified structural, school- and family-based universal interventions, screening and brief interventions and harm reductions, as well as local treatment strategies. The review found that restrictions or bans for alcohol advertising lacked methodological consistency across four reviews; poor quality reviews therefore make it difficult to assess if such approaches are effective in reducing alcohol consumption. Enforcing minimum legal drinking ages was found to have small meaningful benefits, however, other strategies such as taxation were found to be more effective in reducing use. High-quality evidence from four reviews indicated that educational interventions in colleges or university were found to have no effect on consumption. Furthermore, screening and brief interventions in primary-care settings and emergency departments or hospitals were also found to have insufficient evidence or small meaningful benefits, respectively. Overall, it was found that taxation, consumption bans, advertising restrictions and minimum legal age are effective in reducing alcohol use. However, the review emphasizes the lack of research and high-quality evidence on interventions among young people, making it difficult to draw strong conclusions from this review.	2015	No rating tool available	Not reported
Systematic review	Effectiveness of minimum legal drinking age (MLDA) laws (20)	<p>This review examined the literature to summarize the existing knowledge regarding the effectiveness of minimum legal drinking age (MLDA) policies. Empirical studies of the MLDA were included from 1960 to 1999 and the following three variables were coded for each study: (1) sampling design; (2) study design; and (3) presence or absence of comparison group. Overall, 241 empirical analyses of the MLDA were identified.</p> <p>Forty-eight of the studies assessed the effects of changes in the legal minimum drinking age on alcohol consumption, With 35% of the analyses finding a statistically significant inverse relationship between the legal drinking age and alcohol consumption (i.e., as the drinking age was lowered, alcohol consumption increased, and vice versa), and 45% of all analyses showed that a higher legal drinking age is associated with decreased alcohol consumption.</p>	1999	3/9 (AMSTAR rating from McMaster Health Forum)	10/132

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p>The review looked at 57 studies assessing the effects of drinking age on driving after drinking and traffic crashes, and 51% of the analyses from these studies found a statistically significant inverse relationship between the legal drinking age and traffic crashes (i.e., as the drinking age was lowered, the number of crashes increased, and vice versa).</p> <p>Twenty-four studies that focused on drinking age and other health and social problems were also identified. From these, 16% of the analyses found a statistically significant inverse relationship between the legal drinking age and the number of health and social problems (i.e., as the drinking age was lowered, the number of problems increased, and vice versa).</p> <p>Overall, the review concluded that the MLDA has an inverse relationship with alcohol consumption and traffic crashes.</p>			
Systematic review	Effect of minimum legal drinking age on alcohol consumption, and determining the optimal minimum legal drinking age (12)	<p>This review summarized empirical evidence regarding the minimum legal drinking age of 21 in the United States. It looked at the relationship between the minimum legal drinking age and alcohol consumption, and used existing evidence to determine what the optimal minimum legal drinking age should be. The evidence strongly suggests that setting the minimum legal drinking age at 21 is better from a cost and benefit perspective than setting it at 18, and that any proposal to reduce the drinking age should face a very high burden of proof.</p> <p>In addition to the review of evidence, data from the Fatality Analysis Reporting System for 1975-1993 showed that in the seven years after the increase in drinking age, there was a substantial reduction in deaths among 18-20-year-olds due to motor vehicle accidents. The estimates of the effect of the MLDA on mortality were consistent with previous research, showing that MLDA has economically significant effects on the motor vehicle mortality rates of young adults. This study also estimated the effect of the minimum legal drinking age on alcohol consumption using regression discontinuity design. They found that the probability of individuals at age 21 consuming 12 or more drinks in the past year increases by about 6.1 percentage points, which was statistically significant.</p> <p>Overall, the evidence strongly suggests that setting the minimum legal drinking age at 21 is better from a cost and benefit perspective than setting it at 18, and that any proposal to reduce the drinking age should face a very high burden of proof.</p>	Not reported	2/9 (AMSTAR rating from McMaster Health Forum)	Not reported
Systematic review	Public health impact of the minimum legal drinking age in the United States (14)	<p>This study focused on evidence published after 2006, which was when “Choose Responsibility” led to the lowering of minimum legal drinking age (MLDA) of 21 in the United States and allowing states to lower their MLDA to 18 years.</p> <p>“Recent research on the age 21 MLDA has reinforced the position that the current law has served the nation well by reducing alcohol-related traffic crashes and alcohol consumption among youths, while also</p>	Not reported	1/9 (AMSTAR rating from McMaster Health Forum)	Not reported



McMaster Health Forum

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		protecting drinkers from long-term negative outcomes they might experience in adulthood, including alcohol and other drug dependence, adverse birth outcomes, and suicide and homicide.”			
Rapid review	Effectiveness and cost-effectiveness of policies to reduce alcohol-related harms (50)	Key findings provided above under the policy option for selling through government monopolies.	2009	No rating tool available	Not reported
<b>Regulating outlet density</b>					
Systematic review	Effect of alcohol-outlet density on alcohol consumption and alcohol-related problems (17)	<p>This narrative review examined the evidence on alcohol-outlet density and alcohol consumption, violence, and other alcohol-related harms including the impact on motor-vehicle accidents and rates of sexually transmitted diseases. The studies were stratified by their design, including cross-sectional studies, natural experiments and time-series.</p> <p>The cross-sectional studies found mixed results on the relationship between outlet density and alcohol consumption at the local community level. One study found that neighbourhood-level outlet density, but not individual-level measures of accessibility, was related significantly to both drinking norms and consumption levels in a New Orleans census tracts. However, another study from California reported that bars and off-premise outlets were more concentrated in disadvantaged neighbourhoods, but consumption was highest in advantaged neighbourhoods. Lastly, three studies focusing on college students found strong associations between outlet density and binge-drinking and related problems.</p> <p>The natural experiments were primarily concentrated in Nordic countries and some studies generally found that introducing alcohol outlets to rural villages and permitting grocery stores to sell beer increased consumption, particularly among marginalized and heavy drinkers, and teenagers. However, other studies found no change in alcohol consumption when outlet density changed, or found only changes to illegal alcohol consumption with no changes in overall consumption.</p> <p>Relatively few time-series analyses have been conducted in comparison to cross-sectional studies and natural experiments, and the evidence was mixed. One study from the U.K. found that licensing stimulated more demand for beer, but not for wine and spirits, and similarly, another study from the U.S. found that outlet densities were significantly related to sales for both wine and spirits. However, another study based in California did not support this conclusion, and a time-series conducted using data from four Canadian provinces also found that price was the strongest predictor of sales, with physical availability significant in only two of 20 analyses, suggesting at most a small effect of outlet density.</p>	Not reported	0/10 (AMSTAR rating from McMaster Health Forum)	Not reported

*Examining the Costs and/or Cost-effectiveness of Policies for Reducing Alcohol Consumption*

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		The studies, both cross-sectional and longitudinal, focusing on other alcohol-related problems found positive relationships between outlet density and rates of violence, motor-vehicle accidents, and sexually transmitted diseases.			
Systematic review	Effectiveness of limiting alcohol-outlet density as a means of reducing excessive alcohol consumption and alcohol-related harms (11)	<p>This systematic review examined the effect of outlet density on alcohol consumption and related harms using primary evidence from interrupted time-series studies, and secondary evidence from correlational studies. Overall, the primary evidence found that increased outlet density was associated with increased population-level alcohol consumption. The studies also found that increased outlet density was also associated with increased rates of suicide or interpersonal violence, hospitalizations due to assaults, and violent crimes. The impact on motor-vehicle accidents was, however, mixed.</p> <p>Other studies investigating licensing-policy changes on alcohol use reported that more permissive licensing procedures increased the number of on- and off-premises alcohol outlets, which in turn led to increases in alcohol consumption. Secondary evidence from cross-sectional studies found that increases in outlet density were associated with increases in both alcohol consumption and alcohol-related harm, including violent crime, injury, child abuse and liver disease.</p> <p>This review did not find any studies evaluating the cost-effectiveness of limiting alcohol-outlet density, but postulated that the cost of restricting access to alcohol by limiting the number of alcohol outlets was likely to be small relative to the societal cost of excessive alcohol consumption in the U.S. In 1998, the societal cost of excessive alcohol consumption in the U.S. was \$185 billion including medical-care costs, loss of productivity due to morbidity, criminal-justice costs, property damage, lost earnings due to crime, and loss of future earnings due to premature death. In 2006, alcoholic beverage licences accounted for only \$406 million (0.9%) of the \$45 billion that state governments received from all licensing fees, and alcohol taxes accounted for only 0.7% of all taxes (\$4.9 billion of \$706 billion) collected by state governments.</p>	2006	4/9 (AMSTAR rating from McMaster Health Forum)	Not reported
Systematic review	To examine the effect of alcohol availability, including hours and days of sale, and outlet density, on alcohol consumption and damage (18)	<p>This systematic review provided an overview of studies investigating the association between alcohol-outlet density and hours and days of sale on alcohol consumption and related harm. Forty-four studies focusing on outlet density were identified. Most studies were from the U.S., followed by Australia, Canada, New Zealand and Switzerland, and employed a cross-sectional design.</p> <p>Generally, alcohol-outlet density was associated with higher overall consumption, frequency of drinking, and number of drinks consumed in college parties. Studies focusing on alcohol damage found that higher alcohol-outlet density was associated with greater rates of alcohol-related problems including alcohol-related pedestrian collisions, self-reported injuries, suicide, alcohol-related crashes, rates of gonorrhea, child maltreatment, and violent crime.</p> <p>The authors also discussed that most of the evidence focused on how easily individuals can access alcohol (proximity effect), but there were also secondary effects to take into account, including the “amenity</p>	2012	4/10 (AMSTAR rating from McMaster Health Forum)	5/59

McMaster Health Forum

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p>effect” which considers how outlets influence the quality and characteristics of the surrounding community (i.e., violence, street disturbances), and how increasing outlet density can result in competitive price reductions and subsequently increase levels of alcohol consumption.</p> <p>The authors conclude that restricting the availability of alcohol (through reduced outlet density and hours and days of sale) can prevent alcohol-related harm.</p>			
Systematic review	Impact of the availability and marketing of alcohol on alcohol use at the community level (10)	<p>This review focused on evidence from high-income countries, with studies primarily conducted in the U.S., Canada, the Netherlands, New Zealand and Switzerland. Thirteen of the 26 included studies reported on outlet density and alcohol consumption. The studies investigating the association between outlet density and alcohol use found mixed results, but the evidence did suggest that greater outlet density may have been associated with higher levels of alcohol consumption. The authors noted that alcohol outlets may not be the only source of alcohol and that individuals may drive to out-of-town establishments or shop on use internet stores for alcohol. The authors also stated that effect estimates could not be calculated due to the cross-sectional nature of most studies and the variation in exposure and outcome measures examined. Consequently, this review concluded that more longitudinal and qualitative studies were needed to elucidate the relationship between alcohol availability and use and to examine causal pathways.</p>	2010	8/10 (AMSTAR rating from McMaster Health Forum)	1/27
Systematic review	Effects of temporal (days and hours of sale) and spatial availability (outlet density) of take-away alcohol on alcohol consumption (19)	<p>The review conducted two separate systematic reviews to determine the effect of policies regulating temporal availability (days and hours of sale) and spatial availability (outlet density) of take-away alcohol on alcohol use, where take-away alcohol was defined as alcohol that cannot be consumed on-premise.</p> <p>For spatial availability, four studies were included, three of which found that restricting outlet density reduced per capita alcohol consumption. Three of the included papers were population-level studies from Canada, and one individual-level study was from the U.S. One included study from British Columbia specifically found that a 1.0% increase in take-away alcohol-outlet density was associated with a 0.15% increase in total alcohol consumption.</p> <p>The results suggest that restricting physical availability of take-away alcohol may be an effective strategy to reduce alcohol consumption. Spatial availability can be restricted by stricter licensing laws or government monopoly of alcohol retail stores.</p>	2015	6/11 (AMSTAR rating from McMaster Health Forum)	1/7
Rapid review	Effectiveness and cost-effectiveness of policies to reduce alcohol-related harms (50)	Key findings provided above under the policy option for selling through government monopolies.	2009	No rating tool available	Not reported

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
Rapid review	Effectiveness and cost-effectiveness of alcohol control policies (49)	<p>The rapid review included 216 studies and systematic reviews examining the effectiveness and cost-effectiveness of: taxation and price regulation; regulating marketing; regulating availability; providing information and education; managing the drinking environment; preventing drunk-driving; and brief interventions and treatment on alcohol-related harms.</p> <p><u>Taxation and price regulation</u></p> <p>With respect to the effects of taxation and price regulation on consumption, findings generally show that an increase in alcohol price is consistently associated with a decrease in its consumption. Specifically, reviews have found that a 10% price increase is associated with a 5% decrease in consumption. Beer was found to be less price elastic than wine or spirits, but when purchased off-market (e.g., supermarkets) the price elasticity of beer increased. Moderate drinkers are more susceptible to price change than heavy drinkers, but in absolute terms the reduction in alcohol consumption among heavy drinkers is higher. Heavy drinkers however, have a greater tendency to substitute for cheaper alternatives when faced with a price increase.</p> <p>Taxation and price increases were also found to lead to significant improvements in health, with one meta-analysis finding that doubling the tax rate led to an average 35% reduction in alcohol-related mortality, as well as significant reductions in violence, crime, road fatalities and sexually transmitted infections.</p> <p>The rapid review found that to bring about these reductions in harm (and societal benefits), both taxes and price increases need to be passed directly to the consumer through an increase in the price of the product or through legislating a minimum price. These two policies can be implemented together, with British literature finding that the most effective combination is phased duty taxes (annual increases tied to inflation) with a minimum unit price.</p> <p><u>Regulating marketing</u></p> <p>The review found relatively little publicly available information from which to assess the impact of marketing on alcohol consumption. However, the existing evidence reports that for each 10% increase in advertising expenditure there is a 0.3% increase in consumption.</p> <p>While complete marketing bans are rarely implemented, modelling studies have found that they are one of the most effective and cost-effective approaches to prevention, with significant losses in effectiveness as a complete ban moves to a partial ban. A policy alternative to a complete ban is either to implement legislation that restricts what types of media advertisers are permitted to use, and the content of the ads, or the implementation of a watershed ban (e.g., time restrictions). Generally, evidence suggested that reduced exposure to advertising and marketing is expected to benefit prevention and cessation efforts by reducing environmental cues to drink.</p>	2016	No rating tool is available	2/216

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p><u>Regulating availability</u></p> <p>Regulating the availability of alcohol can occur on two levels, either the retail level (e.g., determining where and when it can be sold) or the production level (e.g., encouraging the marketing of lower-alcohol products). These policies have been found to have mixed results. Generally, the evidence supports that higher outlet density is related to higher levels of social disorder, however, the relationship is less clear for alcohol consumption or health harms. Reviews have found that increases in the time and days in which alcohol is sold increases consumption and some harms, such as road accidents. Similarly, reducing late-night hours has been found to reduce violence.</p> <p><u>Providing information and education</u></p> <p>The evidence generally supports the use of well-executed campaigns with high public exposure, and finds these sufficient for raising awareness, particularly for the links between alcohol consumption and cancer. Industry sponsored messages and campaigns are reported to be ineffective, however, temporary, voluntary campaigns such as “dry January” have shown a tendency towards healthier drinking behaviour. The larger findings though, are that providing information and education do not produce sustained behavioural changes, but this may be due to the widespread and unrestricted marketing of alcohol.</p> <p><u>Managing the drinking environment</u></p> <p>Select community-based multi-component programs aim to increase enforcement activity and improve serving practices and standards of licensed facilities. The existing literature is sparse and has a number of methodological challenges.</p> <p>Policies that can help to manage the drinking environment, include server training, changing glassware and bottles, and changes to public drinking laws. Small effects have been reported from server training, however larger effects have been reported for the implementation of server liability, which holds servers legally responsible for harm caused by their customers. Evidence has not supported switching to glass alternatives, as it has not been found to reduce violence or police-recorded crime. Finally, public drinking bans were found to have some negative consequences on marginalized groups, particularly homeless peoples, and resulted in their displacement to more covert and less safe places.</p> <p><u>Preventing drinking and driving</u></p> <p>Substantial evidence supports setting and enforcing a legal blood-alcohol concentration limit for drivers and applying a penalty if the law is broken. Estimates have reported that lowering the legal blood-alcohol concentration from 80mg/100ml to 50mg/100ml would avert 25 deaths and 100 serious injuries in Britain each year. While relatively few cost-effectiveness studies were found, those that were report benefit-cost ratios of 2:1 to 57:1. Similarly, using mass-media campaigns to inform drivers of new regulations and punishments have also been found to be cost-effective.</p>			

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p>Setting graded limits on alcohol based on driving experience has also been found to be effective, with median reductions of 8-14% among young drivers. Mixed effects, however, have been found for the use of incentive programs for designated-driver programs, with studies showing that the programs increased the propensity to use a designated driver, but did not change the prevalence of people driving after drinking or riding with someone who has been drinking.</p> <p><u>Brief interventions and treatment</u></p> <p>Reviews and meta-analyses have found that in England alone, delivery of identification and brief advice would reduce alcohol-related deaths by 25,000, and alcohol-related hospital admissions by 125,000. These gains benefit those in low socio-economic groups who demonstrate the greatest absolute reduction in harm. Further, one systematic review included in the rapid synthesis found this treatment to be cost-saving. The treatment also has been found to be effective in emergency departments, reducing weekly alcohol consumption after six months and 12 months. There has been little evidence however, to support its use in community pharmacies.</p>			
<b>Setting days and hours of sale</b>					
Overview of systematic reviews	Effectiveness of public-health interventions to reduce alcohol-related harm (6)	Key findings provided above under the policy option for selling through government monopolies.	2013	No rating tool available	23/52
Overview of reviews	Examining the effectiveness of prevention, early interventions, harm reduction and treatments of substance abuse in young people (7)	Key findings provided above under the policy option for establishing a minimum purchases age.	2015	No rating tool available	Not reported
Overview of reviews	Cost-effectiveness of macro-economic policies to reduce alcohol-related harms (8)	<p>The overview reported findings from 62 studies and two meta-analyses on three issues of cost-effectiveness: 1) price controls; 2) managing alcohol availability; and 3) alcohol promotion.</p> <p>Relatively few papers assessing the cost-effectiveness of pricing interventions were found. However, one review reported that in areas with a high prevalence (greater than 5%) of hazardous drinkers, taxation will be more cost-effective than other interventions.</p>	2008	No rating tool available	0/64

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p>Similarly, relatively little evidence was found that reports on the cost-effectiveness of promotion controls. One review suggests that in areas with a low prevalence of hazardous drinkers, an advertising ban will be more cost-effective than other alcohol-misuse interventions.</p> <p>Finally, relatively more information was found on the cost-effectiveness of availability restrictions. One study found that an alcohol taxation policy levied on young people had an equivalent consumption effect as a minimum legal age of alcohol purchase policy, however, a tax levied is likely preferable as it may result in lower societal losses due to reduced consumer surplus. Three studies were found that address the cost-benefit of server interventions designed to stop alcohol sales to intoxicated people, however, they all resulted in mixed effects whereby it was difficult to determine whether crime was actually reduced or simply displaced. One study examined licensed hours and days of alcohol sales and found that reducing the licensed hours provided quality of life benefits, but that these were relatively small. However, as the intervention was very low-cost it was found to be cost-effective when compared to no intervention.</p>			
Systematic review	Effectiveness of restricting hours of alcohol sales in preventing alcohol-related harms (15)	The review included six studies, reported in 10 papers, which resulted in a change of less than two hours of sale. The review found that increasing the hours when alcohol may be sold by more than two hours increased alcohol-related harms. Since no studies examined whether reducing hours of sales reduced alcohol-related harms, only inferences can be made. The review found insufficient evidence and no consistent effect on excessive alcohol consumption or related harms from increasing the hours of sales by less than two hours.	2008	5/10 (AMSTAR rating from McMaster Health Forum)	1/10
Systematic review	Effect of hours and days of sale of alcohol (18)	This review identified 15 studies between 2000 and 2008 evaluating the impact of alcohol availability changes on overall alcohol consumption. Alcohol consumption was defined as the average volume consumed by respondent and/or the total alcohol sales. Extended hours were associated with a greater volume of alcohol purchased in an Australian study. Alcohol availability on Saturdays in monopoly outlets also led to an increase in alcohol sales in Sweden. Generally, the included studies supported the conclusion that controlling hours and days of sale can be an effective intervention, which was concordant with the recommendations by the WHO to limit hours and days of sale. However, the authors cautioned that alcohol sales could be influenced by several overlapping changes, such as increased marketing and lower prices, which makes it difficult to isolate and interpret the effects of one variable – the hours and days of alcohol availability.	2008	4/10 (AMSTAR rating from McMaster Health Forum)	5/59
Systematic review	Effectiveness of restricting days of alcohol sales on alcohol consumption (13)	The included studies in this review evaluated long-term policy changes related to days of sale to determine the impact on excessive alcohol consumption in high-income countries. Fourteen studies assessing changes from 1967 to 2004 were identified as meeting the criteria. Intervention effects in the studies were estimated using a variety of methods, and 13 studies had a comparison condition or population. Only one of the 14 studies evaluated the impact of a change in the days of sale for on-premises outlets on consumption. This study identified four major cities in Scotland that had allowed Sunday alcohol sales, and they found an	2008	6/10 (AMSTAR rating from McMaster Health Forum)	0/14

*Examining the Costs and/or Cost-effectiveness of Policies for Reducing Alcohol Consumption*

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p>increase in the average weekly consumption of alcohol by men who drank. The results were only significant for men aged 18-45; the other results in this study were nonsignificant.</p> <p>Four studies assessed the effect of increasing the days of sales at off-premises locations. One study in Sweden analyzed the impact of removing a 20-year ban on Saturday alcohol sales in Stockholm first, followed by the whole country. Significant increases in alcohol sales were noted in both phases of the study. A time-series analysis using U.S. data in 13 states which repealed bans on Sunday alcohol sales found per capita spirits consumption was 3.5% higher in states allowing sales of spirits on Sunday. Beer consumption was 2.4% higher in the six states that allowed Sunday sales of beer.</p> <p>Three studies evaluated the impact of imposing bans on days of sale of alcoholic beverages for off-premises purchases. An experimental ban by the Norwegian government in 1984 resulted in a 3.1% decrease in ethanol consumption, however a 6.4% increase in beer consumption was noted. Combined effects showed a total alcohol consumption increase of 0.7%.</p> <p>Overall, alcohol consumption increased if the days of sale were increased, especially if alcohol sales were allowed on Saturdays or Sundays. Thus, the authors concluded that existing limits on Saturday and Sunday should be maintained.</p>			
Systematic review	Effect of changes in alcohol availability on per capita alcohol consumption (19)	<p>This review assessed the effect of restricting the days and hours of sale on per capita alcohol consumption. All seven included studies concluded that limiting the temporal availability of alcohol reduces consumption. Six of the studies analyzing the effect of an additional day of sale were from Sweden, the U.S. and Canada. A Swedish study observed an increase of 3.3% in per capita consumption with an additional day of sale. A study assessing the effect of Sunday sale bans in the U.S. found an increase per capita consumption of total alcohol by 2.8%, and a 4.0% increase in beer consumption. A natural experiment in Russia reported a 7.9% significant increase in alcohol sales with each additional hour of sale in the evening.</p> <p>The authors completed a meta-analysis on the effect of days of sale on per capita consumption of total and beverage-specific alcohol. Results showed that one additional day of sale was associated with a 3.4% increase in total per capita consumption. Beverage-specific results, for beer, wine, and spirits, were also positive and significant.</p> <p>In general, the evidence supports the conclusion of increased consumption with an additional day of sale. The authors noted a high level of agreement between studies with the majority demonstrating a similar effect.</p>	2018	6/11 (AMSTAR rating from McMaster Health Forum)	1/7
Rapid review	Effectiveness and cost-effectiveness	Key findings provided above under the policy option for selling through government monopolies.	2009	No rating tool available	Not reported



Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
	of policies to reduce alcohol-related harms (50)				
Rapid review	Effectiveness and cost-effectiveness of alcohol control policies (49)	Key findings provided above under the policy option for regulating outlet density.	2016	No rating tool is available	2/216

### Appendix 3: Summary of findings from systematic reviews about the effectiveness or cost-effectiveness of policies addressing alcohol marketing

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
<b>Regulating the volume of advertising from alcohol manufacturers</b>					
Overview of reviews	Examining the effectiveness of prevention, early interventions, harm reduction, and treatments of substance abuse in young people (7)	Key findings provided in Appendix 1 under the policy option for establishing a minimum purchases age.	2015	No rating tool available	Not reported
Overview of reviews	Cost-effectiveness of macro-economic policies to reduce alcohol-related harms (8)	Key findings provided in Appendix 1 under the policy option for setting days and hours of sale.	2008	No rating tool available	0/64
Rapid review	Effectiveness and cost-effectiveness	Key findings provided in Appendix 1 under the policy option for selling through government monopolies.	2009	No rating tool available	Not reported

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
	of policies to reduce alcohol-related harms (50)				
Rapid review	Effectiveness and cost-effectiveness of alcohol control policies (49)	Key findings provided in Appendix 1 under the policy option for regulating outlet density.	2016	No rating tool is available	2/216
Systematic review	Content of alcohol advertising and the effect of alcohol advertising on drinking behaviour and drinking attitudes among youth (24)	<p>This review summarized the evidence on the content of alcohol advertising in films, television, the internet, music videos, and magazines, and also reviewed studies reporting on the association between youth exposure to these advertisements on drinking beliefs and behaviour.</p> <p><b>Portrayals in the media</b></p> <p><i>Television.</i> The evidence on youth exposure to alcohol drinking on television and subsequent beliefs was inconclusive. A single longitudinal study and two experiment studies provided evidence for an association between youth exposure to drinking on television and favourable attitudes and beliefs about drinking, however, the effects were often small and varied across different measures (i.e., gender, genre of television).</p> <p><i>Film.</i> The evidence on youth exposure to alcohol drinking in film and subsequent beliefs was mixed. There is some evidence that exposure to alcohol portrayals in films led to favourable attitudes about drinking, but the evidence was limited, and these effects can be minimized by parental control and restrictions on viewing such content in films.</p> <p><i>Music videos.</i> Only two studies reported on the association between music-video viewing and alcohol use. One found that for each one hour increase in watching music videos, there was a 31% increased risk of initiating drinking over 18 months. Another study found a positive association between exposure to rap music videos and increased likelihood of alcohol consumption in African American female youth.</p> <p><i>Internet and magazine.</i> No studies reported on the association between exposure to alcohol portrayals on the internet or in magazines and alcohol use among youth.</p> <p><b>Alcohol advertising</b></p> <p><i>Experimental studies.</i> Evidence on the association between alcohol advertising and drinking beliefs and consumption was mixed and limited. Some studies found no effects whereas others found small or short-term effects.</p>	Not reported	0/10 (AMSTAR rating from McMaster Health Forum)	Not reported

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p><i>Advertising expenditures and restrictions.</i> This review found no substantial association between advertising expenditures and aggregate alcohol sales, consumption and problems. There was some evidence to suggest that restricting alcohol advertising reduced consumption and related problems, but the findings did not consider effects on youth.</p> <p><i>Survey and correlational studies.</i> Overall, these studies found significant, albeit small, associations between exposure to and recall of alcohol advertising and positive beliefs about drinking, and increased likelihood alcohol consumption among youth.</p> <p>Summary: Overall, the effect of alcohol advertising on youth alcohol consumption was modest and alcohol advertising policies should be incorporated in a broader framework of strategies to prevent underage drinking.</p>			
Systematic review	Effects of advertising on alcohol consumption in young people by reviewing both econometric and consumer studies (27)	<p>Overall, econometric studies suggested that there was minimal to no effect of alcohol advertising on aggregate alcohol consumption. However, other studies noted that past econometric studies have inherited methodological weaknesses that prevented them from finding effects, such as using datasets with insufficient variation. These studies in particular used population-level data and did not focus on particular sub-groups, like youth.</p> <p>On the other hand, consumer studies suggested that there was an association between alcohol advertising and young people's drinking. It was also noted that the association between alcohol advertising and consumption was multifactorial and complex, since consumers and marketers were in a dynamic relationship and advertising was just a single component of marketing, and other factors, such as price, were also important and had an impact on young people's behaviour. However, the others concluded that there was sufficient evidence to suggest that alcohol marketing overall had an impact on youth alcohol consumption.</p>	Not reported	1/9 (AMSTAR rating from McMaster Health Forum)	Not reported
Systematic review	Effects of alcohol advertising and exposure in mass media on future consumption by adolescents (54)	<p>This systematic review summarized longitudinal studies that assessed the association between alcohol advertising or alcohol portrayal in mass media and adolescent drinking, where adolescents were defined as individuals 18 years of age or younger or 21 years of age or younger in U.S. studies. Of the 13 included studies, 10 were conducted in the U.S., one in Belgium, one in New Zealand, and one in Germany.</p> <p>Of the 13 included studies, 12 reported that alcohol advertising and portrayal in mass media predicted the onset of drinking in non-drinkers and increased consumption among existing drinkers. The strength and consistency of the associations found, as well as the temporality between exposure and drinking, gave the authors the reason to conclude that alcohol advertising and promotion increased adolescents' likelihood of drinking alcohol or increased the likelihood of higher consumption if they were existing drinkers.</p>	2008	4/10 (AMSTAR rating from McMaster Health Forum)	0/16

*Examining the Costs and/or Cost-effectiveness of Policies for Reducing Alcohol Consumption*

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
Systematic review	Effects of alcohol advertising or promotion on future alcohol use in young people (37)	<p>This systematic review summarized evidence from prospective cohort studies on the effect of alcohol advertising and portrayals in media on future drinking behaviour. This review found nine published studies covering seven unique prospective cohort studies. Five prospective studies were from the U.S., one from Belgium, and one from New Zealand. The studies included young people from 10-26 years of age.</p> <p>All included studies reported finding of an association between alcohol advertising or portrayal in the media and subsequent risk of starting to drink. Youth who were non-drinkers at baseline were significantly more likely to start drinking at follow-up with greater exposure to alcohol advertisements, whereas in youth who were already drinkers at baseline, it was unclear whether being exposed to alcohol advertisements changed drinking frequency at follow-up.</p> <p>It was concluded that exposure to alcohol advertising in young people influenced their future drinking behaviour. A consistent effect was found across all studies, temporality between the exposure and outcome was shown, and a dose-response relationship was also demonstrated in three studies. The results of this review were further supported by evidence from cross-sectional studies. However, the authors cautioned against concluding that this review demonstrated that limiting alcohol advertising will have an effect on future consumption in young people, as there are many other factors at play (i.e., residual confounding, price, availability, etc.).</p>	2006	5/9 (AMSTAR rating from McMaster Health Forum)	0/9
Systematic review	Effects of alcohol advertising and availability on alcohol use (10)	<p>This review summarized both observational and intervention studies on community-level availability and marketing of alcohol on consumption. Advertising exposures included both local advertising (i.e., billboards, in-store adverts) and local protective messaging (i.e., alcohol awareness). All of the included studies were from high-income countries, with the majority from the U.S. followed by Australia, Canada, the Netherlands, New Zealand and Switzerland. However, all of the studies on advertising were conducted in the U.S.</p> <p>Seven of the 26 included studies assessed the relationship between advertising and alcohol consumption. The findings from these studies were inconclusive, although there was some evidence to suggest that greater exposure to exterior and interior advertising may be associated with increased drinking or having ever tried alcohol in adolescents.</p> <p>The authors also noted that it was difficult to report effect estimates due to the cross-sectional nature of most studies, the variation in exposure and outcome measures, and the variation in the prevalence of drinking and heavy drinking in the study populations. It was also suggested that more longitudinal studies that focused on causal relationships between the exposure and outcome were needed.</p>	2010	8/10 (AMSTAR rating from McMaster Health Forum)	1/27
Systematic review	Effects of banning or restricting	This review of intervention studies assessed the impact of restricting or banning of any format of alcohol advertising on alcohol use in adults and adolescents. Four studies were found: one randomized	2014	8/11	3/4

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
	alcohol advertising on alcohol use (36)	control trial (RCT) from the Netherlands and three interrupted time-series from Canada. None of the included studies provided conclusive evidence either for or against the banning or restricting of alcohol advertising. It was concluded that there was no robust evidence to support or oppose the implementation of alcohol advertising restrictions.		(AMSTAR rating from McMaster Health Forum)	
Systematic review	Effects of alcohol-related content viewed on the internet on alcohol consumption by young people (25)	<p>This review summarized studies assessing the relationship between exposure to alcohol-related content on the internet and young people's drinking behaviours. Fifteen studies were identified and were comprised of cross-sectional, experimental, and longitudinal studies. Ten studies were from the U.S., two from the U.K., two from Australia, and one from New Zealand. Participants in these studies were aged 12-25 years. Types of exposure included both alcohol advertising on the internet and user-generated online alcohol-related content (i.e., pictures of friends drinking alcohol, alcohol-related status updates, etc.).</p> <p>The included studies reported significant associations between exposure to alcohol-related content on the internet and intentions to drink or positive attitudes towards drinking in youth. Overall, it was concluded that exposure to alcohol-related content on the internet can predispose young people to patterns of drinking. However, the authors also cautioned that this was a new and emerging area of research and more longitudinal studies were needed to establish temporality between the exposure and outcome.</p>	2015	7/10 (AMSTAR rating from McMaster Health Forum)	0/15
Systematic review	Effect of alcohol marketing on alcohol use and related cognitions (38)	<p>This review summarized evidence from experimental studies on the effect of alcohol advertisements or alcohol portrayals in programs or film on alcohol use. Eleven studies included focused on alcohol consumption and were conducted in participants between 16 and 45 years of age. A meta-analysis of seven studies found that viewing alcohol advertisements increased immediate alcohol consumption relative to viewing non-alcohol advertisements (summary effect size 0.20, 95 % CI 0.05, 0.34). A summary effect size of 0.20 is equivalent to an increase of 1.57 (95 % CI 0.39, 2.67) alcohol units consumed by the average male drinker, or an increase of 0.99 (95 % CI 0.25, 1.69) units consumed by the average female drinker, on the heaviest drinking day.</p> <p>A meta-analysis of six studies assessing alcohol portrayals did not find that viewing alcohol portrayals in television programs or films increased alcohol consumption (summary effect size 0.16, 95 % CI - 0.05, 0.37).</p> <p>It was concluded that exposure to alcohol advertisements may increase immediate alcohol consumption, but more high-quality experimental and quasi-experimental studies were needed to assess the effects of alcohol marketing in a variety of mediums other than broadcast, in diverse populations, and with significant power to detect sub-group differences.</p>	2015	10/11 (AMSTAR rating from McMaster Health Forum)	3/24

*Examining the Costs and/or Cost-effectiveness of Policies for Reducing Alcohol Consumption*

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
Systematic review	Effects of alcohol marketing on alcohol consumption in youth (29)	<p>This study reviewed longitudinal studies published since 2008 on the effect of alcohol marketing, including television content known to contain alcohol advertising, advertisements, and internet marketing on alcohol consumption in youth. Twelve longitudinal studies from nine unique cohorts were found. The studies were conducted in Germany, Italy, the Netherlands, Poland, Scotland, Taiwan, the U.K. and the U.S.</p> <p>All 12 studies found positive associations between either exposure to, awareness of, engagement with, and/or receptivity to alcohol marketing at baseline and initiation of alcohol use, initiation of binge drinking, drinking in the previous 30 days and/or alcohol problems at follow-up. Some studies reported odds ratios (OR) between 1.0 and 1.7 for youth exposure to alcohol marketing and initiation of use, and OR between 1.4 and 2.2 for exposure and binge drinking, with some finding statistically significant associations. The review also found that the association between exposure to marketing and alcohol use was mediated by factors including marketing receptivity, positive expectancies about alcohol use, and brand recognition, or identifying as a “brand drinker”.</p> <p>It was concluded that young people were more likely to initiate alcohol use or engage in binge or heavy drinking following exposure to alcohol marketing.</p>	2016	7/10 (AMSTAR rating from McMaster Health Forum)	0/12
Systematic review	Effects of alcohol marketing in digital media on alcohol use (31)	<p>This review narratively reviewed studies that focused on alcohol marketing from brand owners on digital-media platforms and their effect on use, as well as the different methods of promotional marketing that were used, and if there were any marketing code violations being promoted.</p> <p>Forty-seven studies were identified, of which five focused on alcohol consumption. Four of the five studies used individual interviews to evaluate the association between the recognition of digital marketing and self-reported alcohol-consumption patterns. In all four studies, drinking behaviour, including increased consumption, regular consumption, risky behaviour, and binge drinking, was associated with exposure to internet marketing. However, none of these studies employed a longitudinal study design and thus cannot imply causality. The fifth study investigated the association between internet marketing and alcohol use in states where regular marketing was restricted, and found that exposure to internet marketing increased the proportion of residents (adults) in the restricted states who said they would purchase alcohol and reduced the effect of a traditional ban by 62%.</p> <p>It was concluded that digital marketing of alcohol likely has an impact on drinking behaviour, and therefore there was evidence to support the use of public-health policies that restrict this method of alcohol promotion.</p>	2015	5/9 (AMSTAR rating from McMaster Health Forum)	0/47
Systematic review	Effects of alcohol marketing components on	This review summarized evidence on the effect of different marketing exposures (product, price, placement, and promotion) on alcohol use in youth aged 9-17. Forty-eight publications were identified of which 20 focused on promotion. The majority of the published literature was from the U.S. The	2015	8/10 (AMSTAR rating from	0/48

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
	alcohol consumption in adolescents (34)	<p>outcomes of interest included drinking initiation, drinking continuation, drinking frequency, and drinking intensity.</p> <p><i>Drinking initiation.</i> Nine studies assessed the effect of alcohol promotion on drinking initiation. All studies found, to some extent, that alcohol promotion influenced drinking initiation. However, the exposure and outcomes measured differed between studies, and included studies found positive, negative and null results.</p> <p><i>Drinking continuation.</i> Eight studies assessed the effect of alcohol promotion on drinking continuation. Results were mixed and inconclusive, with studies finding positive, negative and null results.</p> <p><i>Drinking frequency.</i> Nine studies assessed the effect of alcohol promotion on drinking frequency. All studies found, to some extent, that alcohol promotion influenced drinking frequency. However, results were mixed, with studies finding positive, negative and null results.</p> <p><i>Drinking intensity.</i> Ten studies assessed the effect of alcohol promotion on drinking intensity. Results were mixed and inconclusive, with studies finding positive, negative and null results.</p> <p>Overall, it was concluded that current research was inconclusive and further work was needed to clarify the relationship between alcohol marketing and alcohol use to better inform intervention and policies. However, the relationship between promotion and alcohol use was the strongest amongst the other marketing components (price, product, placement) and was enough to suggest a relationship between promotional marketing and some early-life drinking behaviours.</p>		McMaster Health Forum)	
Systematic review	Effects of alcohol marketing on alcohol consumption in young people (23)	<p>This review assessed cross-sectional studies on alcohol marketing and alcohol use in adolescents. Alcohol marketing exposures included alcohol advertising (i.e., seeing ads, marketing awareness), alcohol promotion (i.e., receiving sponsorship or attending alcohol-sponsored events), and ownership of alcohol-related merchandise. Outcome measures included lifetime, past-year, past-month, or current, and heavy or problematic alcohol use. Thirty-eight studies were included in this review, with the majority from the U.S. followed by Europe.</p> <p><i>Lifetime alcohol use.</i> Ten studies assessed marketing exposure and lifetime alcohol use. Thirty-two different associations were investigated: 21 positive relationships were found compared with 11 null relationships between alcohol advertising across different media types and lifetime alcohol use. Six studies assessed the association between alcohol promotion and owning alcohol-related merchandise and lifetime alcohol use. Overall, only positive associations were found providing strong evidence for this exposure and lifetime alcohol use.</p>	2017	9/10 (AMSTAR rating from McMaster Health Forum)	0/38

*Examining the Costs and/or Cost-effectiveness of Policies for Reducing Alcohol Consumption*

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p><i>Past-year alcohol use.</i> Five studies assessed 19 associations between alcohol marketing exposure and past-year alcohol use. Of the 19 associations, nine found positive relationships whereas 10 found null relationships, thus suggesting that evidence in this area was inconclusive. None of the included studies examined the relationship between ownership of alcohol-related merchandise and past-year alcohol use. One study assessed the association between alcohol promotion and past-year alcohol use and found a null association.</p> <p><i>Past-month and current alcohol use.</i> Twenty-one studies assessed 52 associations between alcohol marketing and past-month or current alcohol use: 31 positive associations and 20 null associations were reported across 21 studies. It was concluded that there was moderate evidence to support the association between marketing exposure and past-month or current alcohol use. Four studies assessed the association between alcohol promotion and past-month or current alcohol use. One study found a negative association, one study found a positive association and two found null associations between alcohol promotion and past-month or current alcohol use. The findings from these studies were limited and mixed. Two studies assessed the association between owning alcohol-related merchandise and past-month alcohol use, and both found positive associations.</p> <p><i>Heavy or problematic alcohol use.</i> Eighteen studies assessed 61 associations between alcohol marketing and heavy or problematic alcohol use: 32 positive and 28 null associations were found, thus, the evidence on the association between alcohol marketing and heavy or problematic alcohol use was mixed. There was considerable evidence to support the association between alcohol promotion or owning of alcohol-related merchandise and heavy or problematic alcohol use. Several positive associations were found, whereas only three null associations were found.</p> <p>It was concluded that alcohol marketing may be associated with young people's alcohol-use behaviours, however, the relationship was strongest for the association between alcohol promotion or owning alcohol-related merchandise and alcohol use. Public health interventions that target alcohol marketing exposure may be important to reduce young people's alcohol use.</p>			
<b>Requiring plain packaging for alcohol and/or adding warning labels to alcohol packaging</b>					
Overview of systematic reviews	Effectiveness of public-health interventions to reduce alcohol-related harm (6)	Key findings provided in Appendix 1 under the policy option for selling through government monopolies.	2013	No rating tool available	23/52



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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
Systematic review	Impact of alcohol warning labels on attitudes and behaviors of different population groups (39)	<p>This review summarizes published international research on alcohol and tobacco labelling and assesses the overall implications of the available evidence for alcohol and public-health policy in Canada.</p> <p>Three review papers and 10 reports that focused on the effectiveness of alcohol warning labels were identified using a systematic search strategy, and three additional papers along with 18 reports were identified by the author. Only papers that reported on the latest outputs from a series of studies or offered something unique on the impacts of labels were included.</p> <p>Reviews of alcohol policy strategies revealed that, overall, the introduction of alcohol warning labels results in little to no measurable change in drinking behaviour.</p> <p>One major primary study evaluating the effects of warning labels in the United States using a series of national surveys indicated growing public support for warning labels on alcoholic beverages. It also reported an increase in discussions about the content of warning labels. However, the results did not indicate any change in behaviour.</p> <p>Two reviews funded by alcohol-industry bodies concluded that the evidence is negative and that alcohol warning labels should not be used. Four additional reviews that were conducted by independent academics reported an increase in awareness of the labels and discussions about their content, but no evidence of a change in risk behaviours was found.</p> <p>Researchers of one review concluded that the ability of warning labels to influence behaviour is dependent on their design, the content of the messages and how targeted they are to their intended audience.</p> <p>Studies evaluating the impact of alcohol labels on the behaviours of adolescents and pregnant women concluded that there were no beneficial changes to drinking behaviours that could be attributed to alcohol labels.</p> <p>A review of the evidence on the use of standard drink labelling in Australia and New Zealand concluded that the evidence is “promising” but not conclusive.</p>	Feb 2016 (publication date)	3/9 (AMSTAR rating from McMaster Health Forum)	Not reported
Systematic review	International experience with and the effects of warnings on alcohol containers and advertisements (40)	<p>This review reports that there is neither international consensus on the use of alcohol warning labels nor consistency in formatting or wording, but there seems to be an increase in warnings concerning pregnancy internationally. The authors point out that the framing of the issue of warning-label effectiveness is measured in published work at the individual level over a relatively short term, but the impact of warning labels can inherently be susceptible to cultural norms concerning alcohol that are more challenging to measure.</p>	Last year literature searched not reported (published July 2009)	1/9 (AMSTAR rating from McMaster Health Forum)	Number of included studies not reported

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p>With regards to the effectiveness of alcohol warning labels, the primary studies reviewed were conducted mostly in the United States and suggested that while exposure to warning labels resulted in more awareness of their messages and conversations about drunk driving and drinking during pregnancy, no effect on behaviour was found.</p> <p>The review highlights that studies typically conclude that warning labels can contribute positively to a larger range of proven strategies for alcohol reduction at very low costs, and that they can prompt discussions on the risks of drinking alcohol, with high-risk drinkers more likely to recall warning-label messages.</p> <p>The experience with tobacco warning labels points to a greater chance of alcohol warning labels being more effective in changing behaviour by addressing social as well as health and injury problems, and being attention-grabbing.</p> <p>Note that the research methodology used was not described in this review.</p>			
Systematic review	Effectiveness of alcohol warning labels on the beliefs and behaviours of adolescents (33)	<p>In this review, literature on the impact of alcohol warning labels on adolescent drinking, knowledge and behaviour was reviewed with the aim of identifying evidence to address alcohol-related harms amongst adolescents in Australia.</p> <p>The article mentions a similar study done previously in Australia examining the potential impact of alcohol warning labels on young adults. In this study the researchers determined that alcohol warning labels were found to be ineffective because participants did not perceive themselves to be personally vulnerable to the long-term effects of alcohol use, or that these effects were relevant to them at the time.</p> <p>Ten research articles utilizing adolescent participant samples in grades 10 to 12 were included in this review.</p> <p>Increased exposure to warning labels and increased awareness of the law were consistently reported in the studies identified. However, there was no significant change in beliefs about the health risks of alcohol or drinking behaviours following exposure to warning labels.</p> <p>One longitudinal study found that early exposure to alcohol warning labels had no effect on alcohol consumption, suggesting that alcohol labels had neither beneficial nor harmful impact on the consumption behaviours of adolescents.</p> <p>Another longitudinal study reported that individual characteristics of adolescents such as gender, socio-economic status, and familiarity with alcohol influence the impact of alcohol warning labels, but overall awareness of adolescents levelled off after three or four years after exposure to warning labels.</p>	Last year literature searched not reported (published May 2012)	2/9 (AMSTAR rating from McMaster Health Forum)	0/10

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		<p>The articles reviewed suggest that adolescents generally support alcohol warning labels being on containers and perceive higher believability of their messages relative to older adults.</p> <p>Overall, there was a lack of empirical studies on the impact of alcohol warning labels among adolescents. Lack of generalizability of the conclusions drawn was a major limitation of this review given that most of the studies reviewed were based on U.S. populations and the adolescent samples were primarily older.</p>			
Systematic review	Effects of exposure to “low alcohol” and equivalent labelling on the selection and consumption of alcohol, food and tobacco products (35)	<p>This review aims to synthesize the available evidence to inform potential policy changes to alcohol labelling regulations. The review was extended to studies on equivalent food and tobacco labelling after a limited number of results from the initial scoping search for studies focused on alcohol labelling.</p> <p>Twenty-six studies were included in this review: 12 randomized controlled trials and 14 non-randomized studies. There was only one study on alcohol labelling (non-randomized) and it was not possible to derive a clear result from that study on any effect of exposure to alcohol bottles labelled as ‘light’ on participants’ intention to consume.</p> <p>Included studies consistently indicated that adults exposed to ‘low fat’ (food) or ‘light’ (tobacco) labels believed these products to be less harmful to health or to contain less of something harmful. However, there was no conclusive evidence that this changed consumption behaviours.</p> <p>The transferability of the findings about food and tobacco “low” descriptors has not been established in this review.</p>	2014	6/10 (AMSTAR rating from McMaster Health Forum)	3/26
Systematic review	Efficacy of alcohol warning labels (26)	<p>Fifteen articles were identified for this review evaluating the available literature on the effectiveness of alcohol warning labels. The articles showed that alcohol warning labels may vary in theme (health, social or other negative consequences), tone and structure (posing a question versus making statements). They can act as an information source for consumers and on-product warnings can exert greater influence on consumers than alternatives because they are viewed close to the time of consumption. However, there was no evidence in the studies reviewed that variations in warning labels had an effect on drinking intentions.</p> <p>The authors commented that there is a temptation to generalize research findings on the use of graphic warnings on tobacco control and adopt this approach for alcohol warning labels in order to have an impact on consumption behaviour. But the outcomes may not be the same for alcohol warnings because of some public perception and debate about positive benefits of alcohol, and because negative warnings about alcohol can provoke defensive avoidance responses in consumers, according to the literature.</p>	2015	5/9 (AMSTAR rating from McMaster Health Forum)	0/15

*Examining the Costs and/or Cost-effectiveness of Policies for Reducing Alcohol Consumption*

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		Overall, there is not enough evidence to determine whether alcohol warning labels effect behavioural compliance. Numerous research gaps were identified in this review emphasizing the need for more research in this area.			
Systematic review	Impact of warning labels on selection and consumption of food and alcohol products (22)	<p>This review aimed to estimate the impact of image-and-text or text-only health warning labels (HWL) placed on product packaging on the selection and consumption of food and alcohol products. A secondary aim was to measure the impact on cognitive and emotional outcomes.</p> <p>Fourteen randomized controlled trial studies from 15 articles were included, three of which targeted alcohol products. One study measured acceptability of an alcoholic drink with a HWL in different label conditions and found that there were significantly lower ratings for the image-and-text HWL compared with the control condition. Another study measured speed of consumption of alcohol and found that alcohol was consumed at a faster rate for those in the control condition compared to those exposed to image-and-text and text-only warning labels. Results from the third study targeting alcohol products were inconclusive.</p> <p>Authors of this review concluded that HWLs have significant potential to reduce the selection of the products in question. The results of this review, however, are limited by both quality and quantity. None of the studies included were conducted in field settings and none measured impact on volume of consumption. Also, most of the evidence reviewed was on non-alcoholic products.</p>	2019	9/10 (AMSTAR rating from McMaster Health Forum)	0/14
Systematic review	Examining the likelihood of the alcohol pledges taken by the Public Health Responsibility Deal in improving public health (42)	<p>The Public Health Responsibility Deal (RD) is a public-private partnership intended to improve public health through voluntary pledges between government, industry and other stakeholders. Pledges specific to alcohol consumption in the RD included alcohol labelling, awareness of alcohol units in clubs and bars, awareness of alcohol units, calories and other information in supermarkets and off-licensed locations, tackling underage alcohol sales, support for Drinkaware (an independent alcohol information source), responsible advertising of alcohol, community actions to tackle alcohol harms, and actions to reduce alcohol unit consumption. This review sought to examine the likelihood of the pledges of the RD on improving public health.</p> <p>After identifying the range of policy options, this evidence synthesis compared the evidence of potential policy effects against those advocated for by the RD approach. Overall, 14 reviews were included. It was found that alcohol labelling mainly concerning impairment information to consumers would not be as effective as more persuasive advertising campaigns to discourage problematic drinking habits. Two of the included reviews found that unit alcohol content is helpful in assisting drinkers to determine the quantity of alcohol being consumed. Five studies on the effects of warning labels generally supported the finding that such information is generally beneficial for warning consumers, but is not likely to mitigate drinking behaviours of “at risk” consumers, including pregnant women.</p>	2013	6/11 (AMSTAR rating from McMaster Health Forum)	0/14

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		Four reviews concluded that responsible drinking statements have significant subjectivity in their interpretations, owing to the different types of consumers. Four reviews summarized the evidence on the effectiveness of age verification, concluding that policy campaigns and other enforcement approaches of alcohol sales laws (such as underage sales checks) were shown to be largely effective at reducing alcohol use and associated harms.			
<b>Establishing self-regulation for alcohol marketing</b>					
Systematic Review	Effectiveness of self-regulation of alcohol marketing (32)	<p>This review evaluated 96 publications on the content of alcohol advertising, the adherence to advertising codes, and alcohol advertising exposure to determine the effectiveness of self-regulation of alcohol marketing. Nineteen studies assessed the content of alcohol advertising and all studies noted evidence of code violations. Among the studies using a random sample of advertisements or a total survey approach, guidelines associated with social or sexual success or guidelines to protect youth were most violated. Many of the studies also identified content that may be appealing to youth, which was a relevant observation to determine whether alcohol advertising was harmful to this population.</p> <p>Five major areas of media were considered to evaluate alcohol advertisement exposure, and 79% of the studies on exposure described youth exposure to alcohol marketing. Many of the studies conducted in the U.S. indicated that exposure to alcohol marketing from the television was common for underage youth. Although, the FTC reports high compliance with the industry's exposure threshold, youth exposure to alcohol advertisements on television, in magazines, and on the radio had increased over time. Additionally, data from 18 studies in nine different countries showed that Australian and U.S. youths reported seeing several billboards for alcohol beverages, with similar results in several other countries such as Scotland and Brazil. The review concluded that alcohol advertising contained inappropriate themes for vulnerable populations which violated content guidelines, and youth exposure to alcohol advertising was high. A total ban or strict regulation of alcohol marketing was recommend.</p>	Not reported	4/9 (AMSTAR rating from McMaster Health Forum)	1/96
<b>Advertising from government authorities to minimize harm of alcohol use</b>					
Systematic review	Effectiveness of social marketing alcohol-prevention interventions (28)	This review evaluated the effect of social marketing principles in alcohol prevention for changing attitudes and behaviours related to alcohol drinking. Six studies were included. "One study relates to participation in a drinking event, four to alcohol drinking behaviour, two to driving a car while under the influence of alcohol, two to recognition of campaign messages or campaign logo, and one to awareness of the campaign." For each of the six included studies, information regarding the social-marketing intervention and the criteria applied was extracted, along with the methods, outcomes, results and biases for each paper.	2012	4/10 (AMSTAR rating from McMaster Health Forum)	1/6

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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
		The primary outcome assessed for all studies was a change in the occurrence of alcohol-related protective behaviour. For two studies, there seemed to be an effect: one study showed an effect on alcohol-impaired driving incidents (including being under the influence while driving) or having an impaired driver, while the second study showed an effect of the campaign logo on alcohol-drinking behaviour. Despite some effects and associations however, there were also “no effects” found. Thus, the review overall was not able to conclude whether applying social marketing in alcohol prevention changes alcohol-related attitudes and behaviours.			
Systematic review	Social-marketing interventions to minimize alcohol harm (30)	<p>This study reviewed social-marketing interventions for minimizing harm from alcohol consumption and their evaluations, published from January 2000 to May 2014. A total of 42 articles with 23 different social-marketing interventions were identified.</p> <p>Behaviour change was used as an indicator of social marketing intervention. “Twelve studies reported some positive behavioral effects, with several studies indicating a significant intervention effect, three studies reported some negative effects, and five reported no behavioral effects in at least one of the aspects of the intervention.” Behavioural changes included reduction in alcohol consumption, reduction in drunk driving and an increase in the use of designated drivers.</p>	Not reported	4/9 (AMSTAR rating from McMaster Health Forum)	0/42
Systematic review	Effectiveness of mass-media campaigns for reducing alcohol-impaired driving and alcohol-related crashes (41)	<p>This systematic review assessed recent evidence on the effectiveness of mass-media campaigns for reducing alcohol-impaired driving (AID) and alcohol-related crashes. A total of 19 studies were included. The primary outcomes included alcohol-related crashes and alcohol-related crash injuries and deaths. The degree of change in these outcomes as a result of mass media campaigns was calculated using the difference in pre- and post-intervention means.</p> <p>Studies that evaluated the impact of mass media independently showed reduction more consistently (median -15%, range -29 to 0%), whereas results of studies that had concomitant enforcement activities were more variable (median -8.6%, range -36 to +15 %). Summary effects calculated from seven studies showed no evidence of media campaigns reducing the risk of alcohol-related injuries or fatalities (RR 1.00, 95%CI 0.94, 1.06).</p>	Not reported	6/11 (AMSTAR rating from McMaster Health Forum)	0/19

#### Appendix 4: Summary of findings from systematic reviews about the effectiveness or cost-effectiveness of policies addressing pricing

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
<b>Increasing the price of alcohol products</b>					
Overview of reviews	Examining the impact of taxes and prices on alcohol use (9)	<p>This overview of reviews included 30 reviews: six umbrella reviews, seven meta-analyses, three meta-regressions, and 14 narrative reviews.</p> <p>Overall, the reviews suggested short- and long-run total own-price elasticity for alcohol of about -0.5 and -0.8, and own-price elasticities of about -0.3 for beer, -0.6 wine, and -0.5 to -0.8 for spirits. Reviews generally concluded that higher taxes and prices were associated with less frequent harmful drinking practices such as heavy episodic drinking, although the magnitude of these associations was generally unclear.</p> <p>Reviews provided no evidence that alcohol price responsiveness differed by socio-economic status, mixed and contradictory evidence with respect to age and sex, and no evidence about the potential impact of higher prices or taxes on alcohol initiation or cessation.</p> <p>Reviews suggested potentially policy-relevant substitution among alcohol beverages within a given category, but little substitution across beverage categories and between alcohol and other harmful products such as tobacco and psychoactive drugs.</p> <p>The evidence reviewed suggested that non-tax price strategies such as minimum pricing likely reduce alcohol consumption. One review specifically examined the effect of minimum unit pricing on alcohol consumption, and concluded that price-based alcohol policy interventions such as minimum unit pricing were likely to reduce alcohol consumption. The review, however, provided little discussion of the magnitude of effects of minimum pricing and did not discuss any differential effects by sub-groups.</p> <p>Increasing the price of alcohol by increasing taxes can also be expected to increase tax revenue, as the demand for alcohol is most certainly inelastic.</p>	2020	No rating tool available	Not applicable

*Examining the Costs and/or Cost-effectiveness of Policies for Reducing Alcohol Consumption*

Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
Systematic review	Economic evaluations of public health interventions targeting alcohol, tobacco, illicit drug use and problematic gambling (47)	<p>This systematic review aimed to identify and assess the cost-effectiveness of public-health interventions targeting the use of alcohol, illicit drugs and tobacco, as well as problematic gambling behaviour. Of the 39 included studies, 12 studies evaluated alcohol prevention.</p> <p>For alcohol prevention, excise tax increases, minimum pricing, and off-trade discounts bans were assessed as cost-effective or dominant (i.e., cost-saving).</p>	2018	6/9 (AMSTAR rating from McMaster Health Forum)	1/39
Methodological review	Methodological review of economic evaluations of alcohol-prevention interventions (46)	<p>This review aimed to identify the methods of evaluation being used to appraise interventions to prevent excessive alcohol consumption and establish whether published studies provide sufficient information to meet the requirements of public-health decision-makers.</p> <p>Seven included studies examined tax increases, one minimum pricing, four advertising restrictions, and four retail sales limitation.</p> <p>The review identified a lack of consideration of methodological challenges associated with evaluating public-health interventions, and limited use of methods such as cost-benefit analysis (CBA) and cost-consequence analysis (CCA) which have been recommended as potentially useful for economic evaluation in public health.</p>	2016	5/9 (AMSTAR rating from McMaster Health Forum)	0/27
Systematic review	Examining the associations between drink specials, drink special laws, and alcohol-related outcomes (48)	<p>Twelve studies examined the effect of drink specials in six countries (Australia, Brazil, Canada, Japan, the Netherlands and the U.S.) between 1978 and 2018. Of these, 11 found a consistent positive association between drink specials and increased alcohol consumption, heavy drinking, and alcohol intoxication. Drink specials also increased reports of driving under the influence, fighting, and unprotected sex. Drink specials were also associated with expectations of higher consumption, and modified attitudes and behaviours towards favourable views of drink specials. Effect sizes ranged from 1.8 to 4.4 increased odds for the examined alcohol-related outcomes.</p> <p>The only study examining the effects of a drink special law revealed mixed findings between prohibiting happy hours and three alcohol-related outcomes.</p>	2019	7/10 (AMSTAR rating from McMaster Health Forum)	1/13



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Type of review	Focus of review	Key findings	Year of last search	AMSTAR	Proportion of studies that were conducted in Canada
<b>Incentivizing the purchase of non-alcoholic beverages</b>					
Systematic review	Pricing strategies to encourage availability, purchase, and consumption of healthy foods and beverages (45)	<p>The review examined the following: 1) real-world experimental studies (randomized controlled trials, quasi-experimental studies, and natural experiments); 2) population studies of people or retail stores in middle-income and high-income countries; 3) pricing interventions alone or in combination with other strategies (price promotions, coupons, taxes, or cash-back rebates), excluding studies of vending-machine or online sales; and 4) outcomes studies at the retail (stocking, sales) and consumer (purchasing, consumption) levels. A total of 65 articles representing 30 studies were included.</p> <p>Sixteen pricing intervention studies that sought to improve access to healthy food and beverage options reported increased stocking and sales of promoted food items. Most studies (n = 23) reported improvement in the purchasing and consumption of healthy foods or beverages, or decreased purchasing and consumption of unhealthy foods or beverages. Most studies assessed promotions of fresh fruits and vegetables (n = 20).</p>	2016	7/10 (AMSTAR rating from McMaster Health Forum)	1/30
Systematic review	Evidence from field interventions on the effectiveness of monetary subsidies in promoting healthier food purchases and consumption (44)	<p>This review examined evidence from field interventions on the effectiveness of monetary subsidies in promoting healthier food purchases and consumption. Twenty-four articles on 20 distinct experiments were included with study quality assessed using predefined methodological criteria. Interventions were conducted in seven countries: the U.S. (n = 14), Canada (n = 1), France (n = 1), Germany (n = 1), Netherlands (n = 1), South Africa (n = 1) and the U.K. (n = 1). Subsidies applied to different types of foods such as fruits, vegetables and low-fat snacks sold in supermarkets, cafeterias, vending machines, farmers' markets or restaurants.</p> <p>All but one study found subsidies on healthier foods to significantly increase the purchase and consumption of promoted products. Study limitations include small and convenience samples, short intervention and follow-up duration, and lack of cost-effectiveness and overall diet assessment.</p>	Not reported	7/10 (AMSTAR rating from McMaster Health Forum)	1/24
Systematic review, meta-analysis	To quantify the prospective effect of changes in food prices on dietary consumption (43)	The review included 23 interventional studies and seven prospective cohorts with 37 intervention arms. In pooled analyses, a 10% decrease in price (i.e., subsidy) increased consumption of healthful foods by 12% (95%CI 10, 15%); N = 22 studies/intervention arms).	2014	7/11 (AMSTAR rating from McMaster Health Forum)	0/26



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