M TORONTO

HL18.1 REPORT FOR ACTION

Municipal Alcohol Policy Update on Alcohol and Caffeinated Energy Drinks

Date: February 16, 2017 To: Board of Health From: Acting Medical Officer of Health Wards: All

SUMMARY

The Toronto Municipal Alcohol Policy (MAP) promotes health and safety at events held on City property by reducing alcohol-related risks. The MAP was updated in 2014 to reflect health evidence and best practices to reduce alcohol-related harm. At that time, City Council approved the updates to the MAP with the exception of a policy statement restricting the sale of caffeinated energy drinks (CED) with alcohol. This report responds to the directive by City Council to the Medical Officer of Health to conduct consultations with third party operators and other stakeholders regarding the sale of CEDs at events where alcohol is served on City properties.

Toronto Public Health (TPH) has consulted with festival and event organizers, the Canadian Beverage Association, Health Canada and other related agencies and organizations. Results from the consultations with event organizers and the Canadian Beverage Association provide mixed views on the impact of prohibiting the sale of CEDs at events where alcohol is served on City properties. Toronto Public Health also received input from City divisions including the City Manager's Office, Legal Services, Economic Development & Culture, Parks, Forestry and Recreation, and Facilities Management.

The practice of mixing CEDs with alcohol is increasingly common, especially among youth and young adults. Toronto Public Health consulted Health Canada and reviewed the current evidence on the health risks associated with the consumption of alcohol with CEDs to inform this report. Since 2012, Health Canada has advised consumers not to mix CEDs with alcohol and has banned the use of CEDs as an ingredient in pre-mixed commercially available alcoholic beverages. Health Canada has confirmed that the advice not to mix alcohol with CEDs remains unchanged. Emerging evidence indicates adverse outcomes such as an increased likelihood of injuries following the consumption of alcohol combined with CEDs.

This report recommends that City Council approve amendments to the MAP to increase awareness of Health Canada's caution statement not to mix energy drinks with alcohol among event organizers and workers at Special Occasion Permit (SOP) or Catering Endorsement events on property that is occupied, leased or licensed by the City in its sole capacity. Furthermore, it is recommended that event organizers consider not allowing the sale or distribution of CEDs at SOP or Catering Endorsement events on City property. The report also recommends that the Alcohol and Gaming Commission of Ontario (AGCO) consider updating the Smart Serve® mandatory server training program so as to increase awareness of Health Canada's recommendation not to mix alcohol with CEDs.

Toronto Public Health will continue to monitor evidence on this issue, including the progress on federal regulations, and will update the MAP as required. Toronto Public Health will also continue targeted public education about the risks of consuming alcohol mixed with CEDs.

RECOMMENDATIONS

The Acting Medical Officer of Health recommends that:

- 1. City Council amend the Municipal Alcohol Policy (MAP):
- a. in the Roles and Responsibilities and Requirements sections of the MAP, to:

1. require event organizers to be familiar with Health Canada's caution statement "do not mix with alcohol" pertaining to caffeinated energy drinks,

2. require event organizers to raise awareness of Health Canada's caution statement with event bartenders, and

3. request event organizers to consider not selling and/or not distributing caffeinated energy drinks with alcohol; and

b. to clarify that the Municipal Alcohol Policy only applies to events held on property that is occupied, leased or licensed by the City in its sole capacity.

2. The Acting Medical Officer of Health continue to monitor the research regarding mixing CEDs and alcohol.

3. This report be forwarded to the City's agencies for their information and request them to take into consideration the City's Municipal Alcohol Policy.

4. The Alcohol and Gaming Commission of Ontario and Smart Serve Ontario consider updating the Smart Serve® server training program to increase awareness of Health Canada's caution statement not to mix alcohol with caffeinated energy drinks.

FINANCIAL IMPACT

There are no financial impacts arising from this report.

DECISION HISTORY

In 2001, City Council adopted the Harmonized Municipal Alcohol Policy and requested City agencies, boards and commissions to consider adopting policies on alcohol risk management.

http://www.toronto.ca/legdocs/2001/agendas/council/cc010424/edp3rpt/cl003.pdf

Concerns related to the health risks associated with consuming alcohol mixed with caffeinated energy drinks (CED) were brought forward to the Board of Health by the Toronto Drug Strategy Implementation Panel (TDS IP) at its meeting on February 11, 2013. The Board endorsed the recommendations from the TDS IP and requested the federal and provincial governments to develop a regulatory framework for CEDs and to increase awareness of the health risks associated with consuming CEDs or alcoholic beverages mixed with CEDs.

http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.HL19.12

On August 18, 2014, the Board of Health endorsed the revised Toronto Municipal Alcohol Policy (MAP) and recommended that City Council approve it. On August 25, 2014, City Council adopted the revised MAP with amendments to remove a statement restricting the sale of energy drinks in conjunction with alcohol. Further, City Council directed the Medical Officer of Health to consult with third party operators and other stakeholders and report back on the proposed restrictions on the sale of energy drinks. http://app.toronto.ca/tmmis/viewAgendaltemHistory.do?item=2014.HL33.3

COMMENTS

Purpose of the Municipal Alcohol Policy

The Municipal Alcohol Policy (MAP) is a comprehensive approach to promote the health and safety of participants at events held on City properties where alcohol is served by holders of a Special Occasion Permit (SOP) or a valid liquor sales licence with a Catering Endorsement which allows alcohol service at an unlicensed location. This report clarifies that the MAP only applies to SOP and Catering Endorsement events hosted in or on property that is occupied, leased or licensed by the City in its sole capacity, including buildings, recreation centres, parks, stadiums, public squares, and public right-of-ways. This includes properties that are leased or licensed solely to the City and properties that are leased or licensed out solely by the City to a third party.

City agencies independently develop operational policies such as policies related to alcohol service. This report clarifies that the MAP does not apply to property under the operational management of the City's agencies such as Exhibition Place, civic theatres, Community Centre Boards (such as the Waterfront Neighbourhood Centre) and Yonge-Dundas Square. A complete list of the City's agencies can be found in Attachment 1. Similarly, the report clarifies that the MAP does not apply to City corporations such as

Toronto Port Lands Company and Lakeshore Arena Corporation. City corporations are established under the City of Toronto Act in compliance with the *Ontario Business Corporations Act* and operate independently from the City.

Excessive consumption of alcohol is associated with increased injuries, violence and crime, including motor vehicle crashes and death.¹ The MAP outlines actions to be taken by event organizers and event workers to prevent problems arising from excessive alcohol consumption on municipal property and to reduce liability. Prevention strategies specify requirements in a number of areas, including for example:

- Safe transportation
- Drink monitoring
- Event security and supervision
- Requirements for server training for event organizers and workers, and Best practices to encourage responsible consumption of alcohol (e.g. free water for drinking, prohibiting the sale of high alcohol beers).

Health protective policies in the MAP have the potential to reduce liability risk for the City and the event organizers.

In 2014, the Medical Officer of Health (MOH) conducted a comprehensive review of the MAP and recommended enhancements to reflect health evidence and best practices to reduce alcohol-related harm. All but one recommendation was approved by City Council and the revised MAP came into effect in January 2015.

In the 2014 update to the MAP, the MOH recommended a restriction on the sale of caffeinated energy drinks (CED) as a prevention strategy to reduce alcohol-related harm. Caffeinated energy drinks are beverages containing high levels of naturally occurring and/or added caffeine, sweeteners and other stimulants as described in the attached technical report, *Caffeinated Energy Drinks: Technical Report on Public Health Concerns and Regulation in Canada* (Attachment 2).

Emerging Concerns Related to Alcohol Mixed with Caffeinated Energy Drinks

An expert panel on CEDs convened by Health Canada² in 2010 drew attention to the consumption of CEDs with alcohol and the increasing reports of health harms linked to this practice. While comparable Canadian data are not publicly available, data from calls made to the United States (US) National Poison Data System in 2010/11 due to CED consumption indicate a higher proportion of serious adverse effects were related to consuming alcoholic CEDs compared to non-alcoholic CEDs.³ US data have also indicated that emergency room visits linked to CED consumption doubled between 2007 and 2011.⁴ Citing public health concerns (e.g. masks alcohol intoxication, individuals drink more per drinking session) associated with the consumption of caffeinated alcoholic beverages in the market for sale in 2010.⁵

The public health community in Ontario has raised concerns related to the likelihood of excessive drinking when consuming alcohol mixed with CEDs and the suggestion that caffeine in energy drinks can mask the symptoms of intoxication, accounting for increased risk-taking behaviour such as impaired driving and violence. In 2012, the

Association of Local Public Health Agencies (alPHa) passed a resolution (Resolution A12-6) sponsored by the Ontario Society of Nutrition Professionals in Public Health that identified concerns related to consuming energy drinks with alcohol and the related increased risks of drinking above the Low Risk Alcohol Drinking Guidelines, binge drinking and intoxication.⁶ Detailed information on the regulation of CEDs and public health concerns regarding the consumption of alcohol mixed with CEDs can be found in Attachment 2.

Health Risks Linked to Consuming Alcohol Mixed with Caffeinated Energy Drinks

The consumption of alcohol mixed with CEDs is relatively common as noted in population surveys (see Attachment 2). Consumption patterns in Canada have most commonly been assessed among youth and students who are underage. A recent study by researchers at the University of Waterloo identified that nearly three-quarters of Canadian youth and young adults (age 12-24 years) report "ever" having consumed an energy drink and one in six (15.6%) report consumption in the past week.⁷ While this large study did not ask specifically about consumption of alcohol mixed with CEDs, responses to questions about why respondents drink CEDs included a number of alcohol-related reasons such as: to mix with alcohol; for going out or partying; to cope with a hangover; or to sober up after drinking alcohol. Importantly, of the subsample of 20-24 year olds surveyed, nearly 27% reported consuming CEDs for mixing with alcohol. The 2015 Ontario Student Drug Use and Health Survey found that 14% of Ontario students in grades 7 -12 (23% of grade 12 students) report consuming alcohol mixed with energy drinks within the past year.⁸

The evidence on the safety of consuming alcohol mixed with CEDS is still emerging (see Attachment 2). Reviews of published research on consumption of alcohol in combination with CEDs, conducted by several health organizations and associations, have noted an increase in adverse events following the consumption of alcohol mixed with CEDs.^{9,10,11} The most commonly cited adverse events are increased likelihood of injuries and risk-taking behaviours following consumption of CEDs with alcohol. Some studies suggest that a combination of alcohol and CEDs masks the depressant effects of alcohol and signs of intoxication.¹² The results of a recent systematic review support an association between consumption of alcohol mixed with CEDs and an increased risk of injury.¹³ Further research is required to determine if this is a causal relationship.

Health Canada's assessment of evidence noted there are limited data on the toxicological interaction between caffeine and alcohol, however, it found that adverse events involving co-consumption of energy drinks and alcohol were most common among young adults, a group that is relatively inexperienced as alcohol consumers. The 2015 European Food Safety Authority's opinion on the safety of combining CEDs with alcohol differs from that of Health Canada and other health agencies by noting a 'safe' limit for the consumption of CEDs mixed with alcohol.¹⁴ In contrast, Health Canada's scientists argue that it is a prudent safety measure to recommend not mixing energy drinks and alcohol.

A number of authoritative health agencies and associations identify public health concerns related to the consumption of alcohol in combination with CEDs including, the US Centers for Disease Control and Prevention, US National Institutes of Health,

Centre for Addiction and Mental Health, the Canadian Centre for Substance Abuse, the Chief Public Health Officer of Canada, British Columbia Ministry of Health, Institut national de santé publique du Québec, Doctors Nova Scotia, and the Office of the Chief Medical Officer for New Brunswick[,] among others (see Attachment 2).

Regulatory Framework for the Sale and Marketing of Caffeinated Energy Drinks in Canada

Health Canada regulates the sale and marketing of CEDs. Health Canada's 2012 health risk assessment was undertaken to inform its development of an evidence-based risk management approach for the sale and marketing of CEDs.¹⁰ In its assessment, Health Canada considered how CEDs are actually consumed by Canadians, the increase in the practice of drinking alcohol mixed with CEDs and the research evidence exploring adverse health events associated with this practice. Health Canada took the following steps regarding this issue:

- prohibited the sale of pre-packaged, premixed alcoholic caffeinated energy drinks
- required the following cautionary labelling on all CEDs: "Do not mix with alcohol"
- advised consumers to not mix alcohol with CEDs

Health Canada staff have recently confirmed to TPH that the requirements for cautionary labelling to not mix CEDs with alcohol are still required as part of the "Temporary Market Authorization" (TMA) and will be maintained until federal regulations for the sale and marketing of CEDs are drafted. Currently, Health Canada regulates CEDs as a food product using a "Temporary Market Authorization" under the authority of the *Food and Drugs Act*. Final regulations are not expected to be in place for a number of years and will involve significant public consultation. See Attachment 2 for details on the federal management approach for CEDs, including how Canada's approach compares internationally.

Approaches in Other Jurisdictions

In Ontario, the Liquor Control Board of Ontario does not sell CEDs and has sponsored health promotion literature for parents on the potential harms of CEDs and of mixing CEDs and alcohol. Several municipalities in Ontario have restricted the sale of CEDs at events where alcohol is served on municipal property, through a policy statement in their municipal alcohol policies. For example, the <u>City of Brampton</u>, <u>City of Waterloo</u> and the <u>City of Oshawa</u> prohibit the sale, serving or consumption of energy drinks in their MAPs. See Attachment 2 for additional detail.

Other jurisdictions have taken different approaches to restrict the sale of alcohol mixed with CEDs. For example, in the state of Western Australia there are prohibitions, through the Department of Racing, Gaming & Liquor, on the sale of alcohol mixed with CEDs during extended hours or when selling alcohol by special permit.¹⁵ In Alberta, the province's liquor and gaming authority prohibits the sale of energy drinks in retail liquor stores.¹⁶

In 2009, the City of Thousand Oaks, California, passed an ordinance to protect public health, safety and welfare by requiring those who own, operate, manage, lease or rent a premise that offers alcoholic beverages and CEDs for sale to post signs at the venue with the following information: "*Warning: Consuming energy drinks that contain or are mixed with alcohol may mask the signs of impairment and increase risk of injury*".¹⁷

Stakeholder Consultations

Toronto Public Health conducted stakeholder consultations from February, 2015 to the end of summer 2016. The consultations included an online survey of event organizers from the Festivals and Events Network (FEN) maintained by the City's Event Support Unit, Economic Development and Culture Division, and in-depth interviews with the Canadian Beverage Association and a number of organizers of large events that are held on City properties. The online survey was open for 19 weeks between October 16, 2015 and March 1, 2016.

Toronto Public Health commissioned Ipsos to conduct the online survey and in-depth telephone interviews. The purpose of the survey and interviews was to better understand the perceptions of event organizers about the practice of mixing energy drinks and alcohol and the impacts of a restriction on the sale and distribution of CEDs at events where alcohol is served on City property. Detailed results of the consultation can be found in Attachment 3 and in the report by Ipsos titled *MAP Consultation, July 2016*.

http://www1.toronto.ca//City%20Of%20Toronto/Toronto%20Public%20Health/Healthy% 20Public%20Policy/Report%20Library/PDF%20Reports%20Repository/Municipal%20Al cohol%20Policy%20Final%20Report%20August%202016DM_SS.pdf

Relevant findings from the online survey and telephone interviews are listed below. The survey, despite multiple reminders, garnered 27 responses (approximately 15 percent response rate) and therefore the results of the survey were treated as qualitative by Ipsos. Nine in-depth interviews were conducted to complement the online survey.

- Almost half of those completing the survey reported that they serve CEDs at events they organize; however, most say drinks that mix alcohol with CEDs are not on their menu and are never served at events held on City property. Stakeholders have mixed views as to the risks from mixing CEDs with alcohol that is, some were concerned while others were not concerned about this as a health issue.
- Many respondents to the survey suggested not having beverages containing alcohol mixed with CEDs on bar menus and serving alternative non-alcoholic beverages as ways to prevent the consumption of alcohol mixed with CEDs.
- Most of the survey respondents did not anticipate an impact on event attendance or their ability to meet the needs and expectations of their clients should there be a ban on CEDs at events where alcohol is served on City property.
- Most event organizers responding to the online survey also indicated that their events are not sponsored by CED companies or their representatives.
- Most participants of the in-depth interviews (i.e. larger event operators and associations) said there would be negative impacts, mostly financial (e.g. from loss of sponsorship dollars) if the sale of CEDs were banned within the designated alcohol service area.

 Those disagreeing with a ban on CED sales suggested alternative policy options to address the issue such as: providing signage or education to increase awareness on the potential health risks associated with consuming alcohol mixed with CEDs, instituting maximum limits for energy drink sales per person, training service staff, or providing alcohol-free zones where CEDs can be purchased and consumed.

Additional details and summary findings of the consultations are found in Attachment 3.

Enhancing the Municipal Alcohol Policy to Promote Health and Safety

Alcohol continues to be one of the leading causes of disease and disability in Canada.¹⁸ The MAP is a tool to reduce alcohol-related harm, promote health and safety and reduce liability risk for the event organizer and the City. Several municipalities in Ontario have included health protective approaches in their MAPs to prevent the consumption of alcohol mixed with CEDs at events held on municipal property. Health Canada advises consumers not to mix alcohol with CEDs, a policy direction supported by other public health organizations such as the Ontario Society of Nutrition Professionals in Public Health, the Canadian Centre on Substance Abuse (CCSA) and the Association of Local Public Health Agencies among others. Toronto Public Health's review of the state of evidence supports the precautionary approach recommended by Health Canada.

The existing City of Toronto MAP does not include information on Health Canada's recommendation regarding not mixing CEDs with alcohol. This report proposes an incremental health protective approach to the serving and consumption of alcoholic beverages, in keeping with Health Canada's precautionary approach. Hence it is recommended that the City of Toronto MAP include text that requires event organizers to be familiar with Health Canada's cautionary advice not to mix CEDs with alcohol and to promote awareness of this precaution during training sessions with event bartenders. Toronto Public Health also recommends that the MAP be amended to request that event organizers consider not allowing the sale and/or the distribution of CEDs with alcohol when hosting SOP or Catering Endorsement events held on City properties where the MAP is applicable.

This report also recommends that the City's agencies consider adopting policies found in MAP.

Additionally, it is recommended that the Alcohol and Gaming Commission of Ontario (AGCO) and Smart Serve Ontario consider updating the AGCO-approved Smart Serve® training program to increase awareness of Health Canada's recommendation not to mix alcohol with CEDs. Event organizers and all event workers are required by the Toronto MAP to hold Smart Serve® certificates. The Smart Serve® training program provides information on preventing alcohol-related problems and covers topics such as the effects of alcohol, responsible serving techniques and legal issues. The Smart Serve® training material delivered currently does not include information on Health Canada's current risk management approach and advice regarding the practice of mixing alcohol and CEDs.

Toronto Public Health will continue targeted public education about the risks of consuming alcohol mixed with CEDs. Toronto Public Health provides advice not to mix

alcohol with energy drinks through existing programming such as the "Party in the Right Spirit" program which reaches university and college students and youth leadership initiatives which reach students in grades 7 to 12.

CONTACT

Monica Campbell Director, Healthy Public Policy Toronto Public Health Tel: 416-338-0661 E-mail: <u>monica.campbell@toronto.ca</u> Loren Vanderlinden Manager, Healthy Public Policy Toronto Public Health Tel: 416-338-8094 E-mail: loren.vanderlinden@toronto.ca

SIGNATURE

Dr. Barbara Yaffe Acting Medical Officer of Health

ATTACHMENTS

Attachment 1: List of City Agencies

Attachment 2: Caffeinated Energy Drinks: Technical Report on Public Health Concerns and Regulation in Canada.

Attachment 3: Summary of Consultations for Updating the Municipal Alcohol Policy

REFERENCES

1. Canadian Public Health Association. 2011. Position Paper: Too High a Cost. A Public Health Approach to Alcohol Policy in Canada; December, 2011. Available from:

http://www.cpha.ca/uploads/positions/position-paper-alcohol_e.pdf

2. Health Canada. 2010. Report by the Expert Panel on Caffeinated Energy Drinks. Available from: http://www.hc-sc.gc.ca/dhp-mps/prodnatur/activit/groupe-expert-panel/report_rapport-eng.php

3. Seifert SM, Seifert SA, Schaechter J, Bronstein AC, Benson BE, Hershorin ER, Arheart KL, Franco VI & Lipshultz SE, et al. 2013. An analysis of energy-drink toxicity in the National Poison Data System. Clinical Toxicology. 51:566–574.

4. Substance Abuse and Mental Health Services Administration (SAMHSA). 2013. The Drug Abuse Warning Network (DAWN) report: Update on Emergency Department Visits involving Energy Drinks: A Continuing Public Health Concern; January 10, 2013. Available from:

http://archive.samhsa.gov/data/2k13/DAWN126/sr126-energy-drinks-use.pdf

5. United States Food and Drug Administration, U.S. Department of Health and Human Services. 2010. Consumer Health Information: Serious Concerns over Alcoholic Beverages with Added Caffeine. Available from <u>http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm233987.htm</u>

6. Association of Local Public Health Agencies (aIPHa). 2012. aIPHa RESOLUTION A12-6, Energy Drink Regulations. Available from: <u>http://c.ymcdn.com/sites/www.alphaweb.org/resource/collection/1BA1FB32-FCDB-48B1-8DE8-8E50E023FADA/A12-6_EnergyDrinks.pdf</u>

7. Reid JL, McCory C, White CM, Martineau C, Vanderkooy P, Fenton N, Hammond D, et al. 2016. Consumption of Caffeinated Energy Drinks Among Youth and Young Adults in Canada. Preventive Medicine Reports. 05: 65-70. Available from:

http://www.sciencedirect.com/science/article/pii/S2211335516301450.

8. Boak A, Hamilton HA, Adlaf EM, Mann RE. 2015. Drug use among Ontario students; 1977-2015. Detailed OSDUHS findings. 41st ed. Toronto, ON: Centre for Addiction and Mental Health. Available from: <u>https://www.camh.ca/en/research/news_and_publications/ontario-student-drug-use-and-health-survey/Documents/2015%20OSDUHS%20Documents/2015OSDUHS_Detailed_DrugUseReport.pdf</u>

9. Brache, K., Thomas, G.,and Stockwell, T. (2012). Caffeinated alcoholic beverages in Canada: Prevalence of use, risks and recommended policy responses. Ottawa, ON: Canadian Centre on Substance Abuse. Available from: http://www.ccsa.ca/Resource%20Library/CCSA-Caffeinated-Alcoholic-Beverages-in-Canada-2012-en.pdf

10. Rotstein J, Barber J, Strowbridge C, Hayward S, Huang R & Godefroy SB, et al. 2013. Energy Drinks: An Assessment of the Potential Health Risks in the Canadian Context. International Food Risk Analysis Journal. 3:1-29

11. Centers for Disease Control and Prevention. Fact Sheet- Caffeine and Alcohol. Available at https://www.cdc.gov/alcohol/fact-sheets/caffeine-and-alcohol.htm

12. Peacock A, Pennay A, Droste N, Bruno R, Lubman DI. 'High' risk? A systematic review of the acute outcomes of mixing alcohol with energy drinks. Addiction. 2014;109(10):1612-33.

13. Roemer A and Stockwell T. Alcohol Mixed with Energy Drinks and Risk for Injury: A Systematic Review. J Stud Alcohol Drugs. Forthcoming 2017.

14. Panel on Dietetic Products, Nutrition and Allergies (European Food Safety Authority). 2015. Scientific Opinion on the safety of caffeine. EFSA Journal. 13(5):4102-120pp. Available from: https://www.efsa.europa.eu/en/efsajournal/pub/4102.

15. Government of Western Australia, Department of Racing, Gaming & Liquor; August 2015. Policy: Extended Trading Hours – Sunday Trading on Long Weekends for Nightclubs, Hotels, Taverns, Small Bars and Special Facility Licences. Available from: <u>http://www.rgl.wa.gov.au/docs/default-</u>

source/rgl/extended-trading-hours---sunday-trading-on-long-weekends-for-nightclubs-hotels-tavernssmall-bars-and-special-facility-licences.pdf?sfvrsn=2 16. Alberta Gaming & Liquor Commission. Retail Liquor Store Handbook. Available from: http://aglc.ca/pdf/handbooks/retail liquor stores.pdf

17. The City of Thousand Oaks, California Municipal Code, Title 5, Chapter 27 "Alcohol Energy Drink". Available from:

http://library.amlegal.com/nxt/gateway.dll/California/thousandoaks_ca/thecityofthousandoakscaliforniamu nicipal?f=templates\$fn=default.htm\$3.0\$vid=amlegal:thousandoaks_ca

18. Rehm J, Mathers C, Popova S, Thavorncharoensap M, Teerawattananon Y & Patra J, et al. 2009. Alcohol and Global Health 1: Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. Lancet. 373: 2223–33.