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REGIONAL STATUS REPORT ON ALCOHOL AND HEALTH IN THE AMERICAS 2020

Regional Status Report on Alcohol and Health 2020

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FOREWORD

IIn September 2018, the World Health Organization (WHO) published an updated version of the *Global Status Report on Alcohol and Health*, which provided an in-depth situation analysis of alcohol consumption, alcohol-related harms, and control policies at the global level. It also presented country profiles that included key indicators.

This regional report complements the WHO 2018 *Global Status Report on Alcohol and Health* by presenting a comprehensive picture of alcohol consumption in the Region of the Americas, the related health and social consequences of harmful alcohol use, and how countries are responding. This regional report discusses the impact of the harmful use of alcohol on population health and identifies evidence-based strategies to protect and promote the health and well-being of communities the Americas. The data have been validated by each country of origin for the WHO global report, and this regional report additionally includes subsequent studies that were not discussed in the earlier global report. The overarching goal of the analyses presented is to provide an update on alcohol policies in the Americas and identify gaps and challenges, as well as to discuss how countries can improve current trends in alcohol consumption and attributable harm, in expeditious and cost-effective ways.

Alcohol-related harms have been neglected for too long in the Americas, while lives are being lost and individuals, families and communities continue to suffer the direct or indirect consequences. The harmful use of alcohol worsens the already large and growing social and economic disparities in our Region. It is clear that strong political commitment is needed to bring all sectors together, to ensure that health is placed ahead of commercial interests. Urgent action must be taken to prevent current and future generations from suffering the high health, economic and social costs of harmful alcohol consumption. It is time to deliver and make our communities SAFER, by implementing cost-effective policies and protecting the public health.

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Pamela Trangenstein, Department of Health Behavior at the University of North Carolina at Chapel Hill, reviewed the available literature and authored a significant portion of the text and graphs.

Maristela Monteiro, Department of Noncommunicable Diseases and Mental Health (NMH) of the Pan American Health Organization (PAHO), developed the outline, oversaw the development process, and provided guidance and expertise throughout the process.

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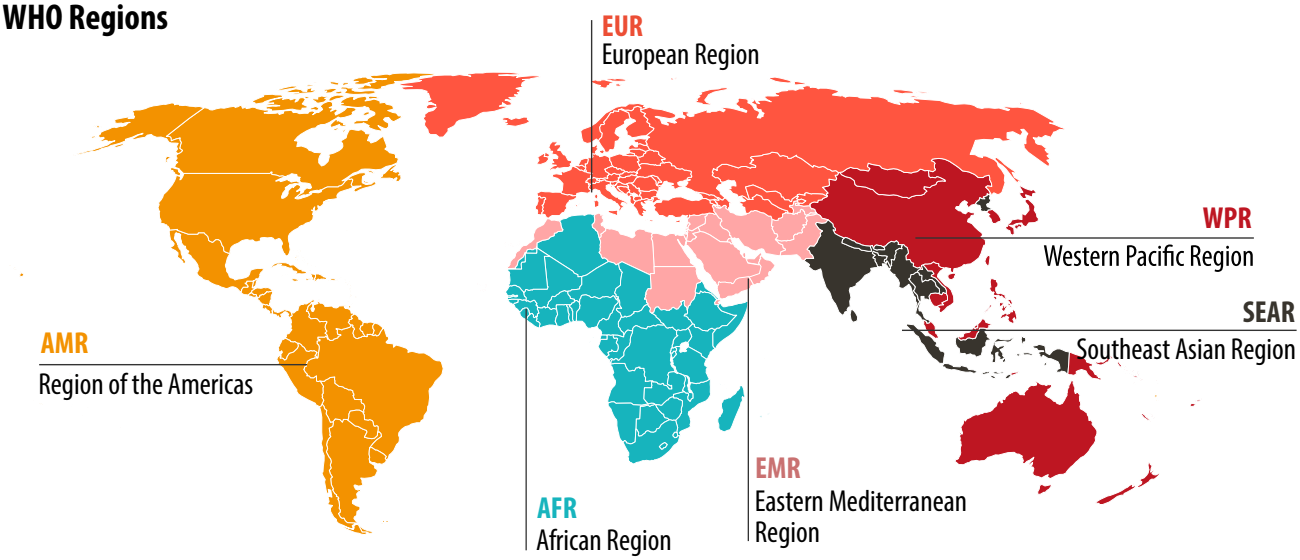
Ivneet Sohi, consultant to the Pan American Health Organization, edited the report and incorporated suggestions made by the reviewers Roberta Caixeta, Maria Neufeld, and Kevin Shield.

LIST OF ACRONYMS

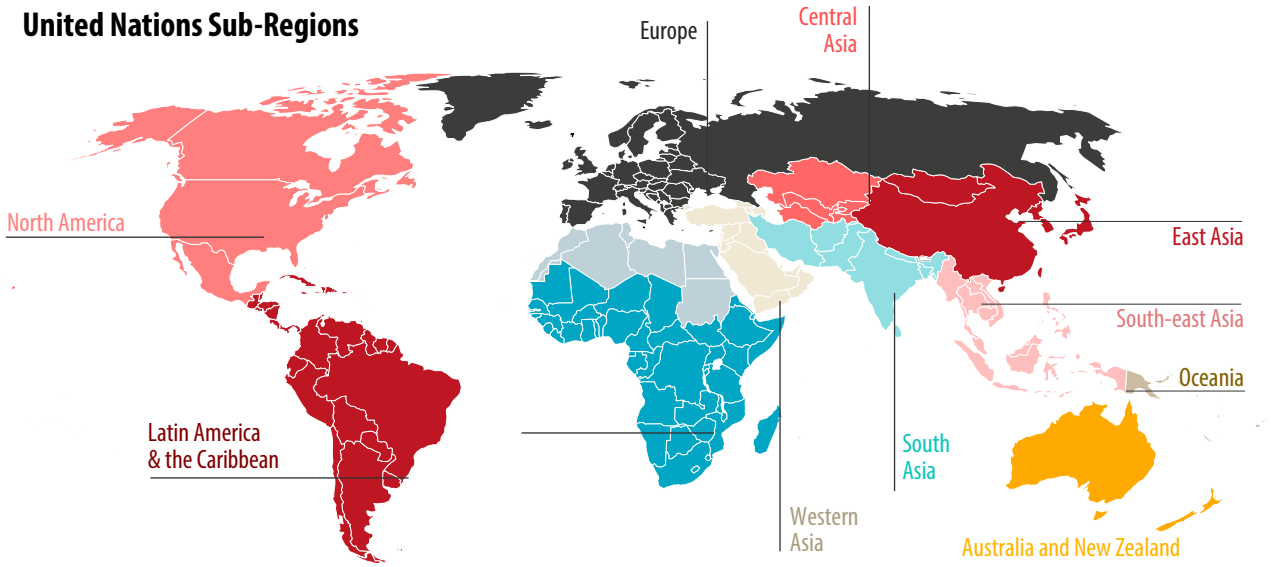
AAF	Alcohol-attributable fraction
APC	Alcohol per capita consumption
AUDs	Alcohol use disorders
BAC	Blood alcohol concentration
DALY	Disability-adjusted life year
FAS	Fetal alcohol syndrome
FASD	Fetal alcohol spectrum disorder
GBD	Global Burden of Disease Study
GHO	Global Health Observatory
GISAH	Global Information System on Alcohol and Health
GSR 2018	WHO Global Status Report on Alcohol and Health 2018
HED	Heavy episodic drinking
IAC	International Alcohol Control
IHME	Institute for Health Metrics and Evaluation
IWSR	International Wine and Spirits Record
MOH	Ministry of Health
NCDs	Noncommunicable Diseases (also referred to as “chronic diseases”)
NGOs	Nongovernmental Organizations
NIAAA	National Institution on Alcohol Abuse and Alcoholism
NMH	Department of Noncommunicable Diseases and Mental Health
OIV	International Organization of Vine and Wine
PAHO	Pan American Health Organization
SDGs	Sustainable Development Goals
UN	United Nations
USD	United States dollars
WHO	World Health Organization
YLD	Years lived with disability
YLL	Years of life lost

WORLD REGIONS AND SUB-REGIONS

WHO Regions



United Nations Sub-Regions

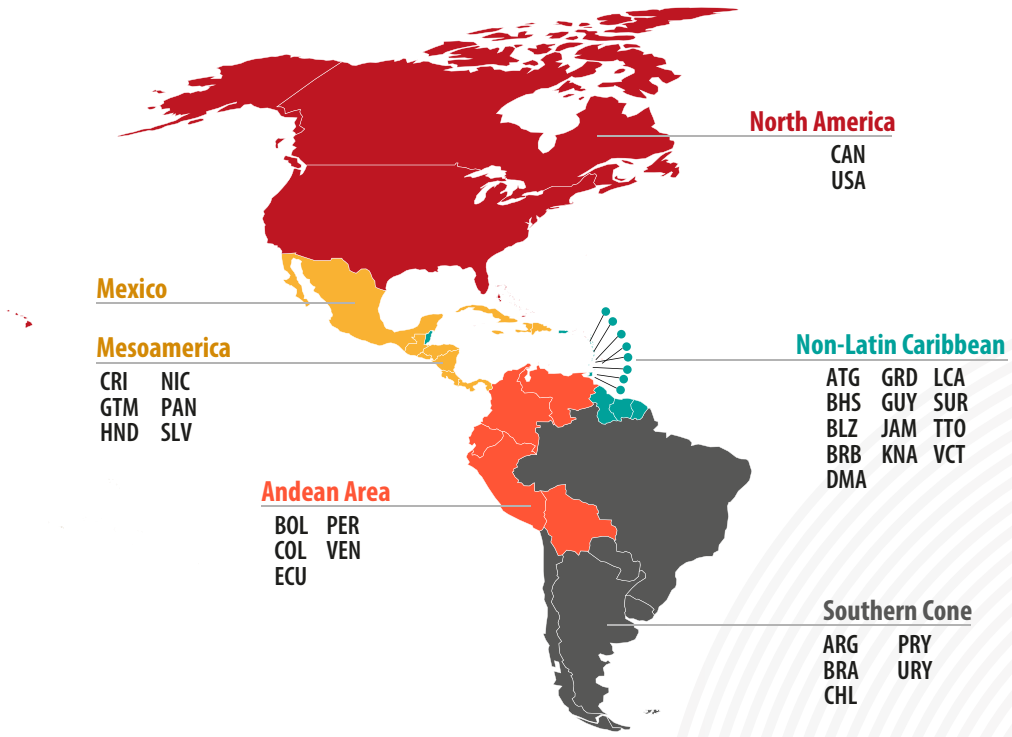


COUNTRIES AND SUB-REGIONS IN THE AMERICAS

Countries

ARG	Argentina	**DOM**	Dominican Republic	**NIC**	Nicaragua
ATG	Antigua and Barbuda	**ECU**	Ecuador	**PAN**	Panama
BHS	Bahamas	**GRD**	Grenada	**PER**	Peru
BLZ	Belize	**GTM**	Guatemala	**PRY**	Paraguay
BOL	Bolivia (Plurinational State of)	**GUY**	Guyana	**SLV**	El Salvador
BRA	Brazil	**HND**	Honduras	**SUR**	Suriname
BRB	Barbados	**HTI**	Haiti	**TTO**	Trinidad and Tobago
CAN	Canada	**JAM**	Jamaica	**URY**	Uruguay
CHL	Chile	**KNA**	St Kitts and Nevis	**USA**	United States of America
COL	Colombia	**LCA**	Saint Lucia	**VCT**	St Vincent and the Grenadines
CRI	Costa Rica	**MEX**	Mexico	**VEN**	Venezuela (Bolivarian Republic of)
DMA	Dominica				

Sub-Regions in the Americas



EXECUTIVE SUMMARY

Consumption

In 2016, 46.1% of the adult population (15+) drank in the past year, a proportion that decreased from 57.8% in 2010. Among drinkers, the proportion of those who drink heavily was 40.5%, thus two out of five drinkers engaged in a drinking pattern that is considered to be particularly harmful to health. Since 2012, the alcohol per capita consumption among adults remained stable with the slightest decrease from 8.2 to 8.0 liters of pure alcohol. Unfortunately, this drop is likely insufficient to decrease risk in the region. Due to population growth, the number of drinkers remained unchanged, and rates of heavy episodic drinking among drinkers increased by 12%. This means that current drinkers are drinking more, which is evidenced by the alcohol per capita consumption among drinkers increasing from 14.7 to 15.1 liters of pure alcohol.

Harms

Morbidity – disease and injury

Alcohol caused 6.7% of all disability-adjusted life years (i.e., years of life lost due to premature mortality plus years lost to disability stemming from alcohol) in the Americas in 2016. The Americas had some of the highest rates of alcohol use disorders (AUDs) and fetal alcohol spectrum disorders in the world. In 2016, nearly 1 in every 12 adults (8.2%) in the Americas met criteria for an alcohol use disorder (AUD), which is almost double the world average (5.1%).

Mortality – deaths

Alcohol was responsible for over 379,000 deaths in 2016, which equaled roughly one life lost every 100 seconds. The types of alcohol-attributable deaths that claimed the most lives included cancers (83,351), self-harm and interpersonal violence (65,880), and digestive diseases (62,668). Alcohol was the second leading behavioral risk factor for death for males and the fifth leading behavioral risk factor for females. If these trends remain unchanged, over 1 million more people will die from alcohol use in the Americas by 2025.

Alcohol policies and interventions

Pricing and taxation

While many countries in the Americas report having alcohol excise taxes, only one quarter of those countries adjust those taxes for inflation. However, even with these pricing policies in place, alcohol remains highly affordable in many countries; beer is the most affordable in the Latin Caribbean, Central American Isthmus, and non-Latin Caribbean.

Physical availability

Most countries in the Americas use licensing systems to regulate retail alcohol sales (78.1%) and have established a minimum legal purchase age (90.9% for

off-premise[1] and 100.0% for on-premise[2]). In addition, most countries (65.6% for hours and 58.1% for locations) impose restrictions on the hours of alcohol sales and locations of alcohol outlets for at least one beverage and premise type. However, most countries do not regulate the days during which alcohol may be sold (74.2% for on and off-premise) nor the density of alcohol outlets (74.2% for off-premise,[1] 67.7% for on-premise[2]).

Marketing and advertising

Alcohol marketing is largely unregulated in the Americas. Only two countries have a ban on at least one type of media, and just two countries have restrictions of any type on digital marketing. When summarized using restrictiveness scores, Latin America and the Caribbean (6.7) and North America (9.0) were the sub-regions with the least restrictive marketing policies in the world.

Drink-driving countermeasures

One in seven persons in the Americas lives in a country that has not yet established a blood alcohol concentration (BAC) limit for the general population, and another one in three persons lives in a country where the BAC limit is above the WHO recommended 0.05% threshold. Only eight countries in the Region comply with WHO recommendations for BAC limits for both the general population and for novice drivers.

Health Service's Response

In 2016, 27.5% of the people living in the Americas lived in a country where the treatment coverage for alcohol use disorders was unknown, and another 39.4% lived in a country where less than 10% of persons who need treatment for an AUD received it. Screening and brief interventions in primary health care has not been scaled up in most countries despite being considered an effective policy.

1 Off-premise: alcohol is purchased but not consumed at premise/site, e.g., liquor stores.

2 On-premise: alcohol is purchased and consumed at premise/site, e.g., restaurants/bars.

INTRODUCTION: CONTEXT FOR ALCOHOL PREVENTION

This regional report is designed to complement the WHO's 2018 *Global Status Report on Alcohol and Health* by providing greater detail on the current status, barriers, and breakthroughs related to alcohol and the burden of alcohol-related harms in the Region of the Americas. This report uses the data provided, validated and accepted by each country for the global reports and includes specific examples and studies done in countries of the region recently that were not discussed in the global report. The overarching goal of the analyses presented in this publication is to provide an update on alcohol consumption, harms, and policies being implemented in the region and identify the gaps and challenges found, as well as discuss how countries can reverse current trends in a cost-effective and expedited way.

This report is produced within the context of several international goals, frameworks and action plans that encompass goals and priorities for interpreting levels of alcohol consumption. In recent years, Member States of the World Health Organization (WHO) and United Nations (UN) have agreed to make a concerted effort to achieve a series of carefully designed targets. These targets are defined in Global Action Plan for the Prevention and Control of NCDs 2013-2020 (hereafter referred to as "NCD Action Plan") and the UN's Sustainable Development Goals. The level of progress toward meeting these shared goals will be measured using a series of indicators that are defined in this section and will be described in greater detail later in this report.

NCD Global Monitoring Framework

In May 2013, the World Health Assembly adopted a global framework to track progress in reducing and preventing the major NCDs and their risk factors. This framework included one mortality target, six risk factor targets, and two national systems targets. Across these foci, Member States agreed on 25 priority indicators to measure progress, and three of these focus on alcohol use. The overall target for alcohol use is to reduce the harmful use of alcohol by 10% by 2025, and progress will be determined using the following three indicators:

- **Population-level consumption:** Total (recorded and unrecorded) alcohol per capita (aged 15+ years) consumption within a calendar year in liters of pure alcohol, as appropriate, within the national context
- **High-risk drinking:** Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context
- **Burden of alcohol:** Alcohol-related morbidity and mortality among adolescents and adults, as appropriate, within the national context

Sustainable Development Goals

Another recent development that reinforced alcohol's place on the international public health agenda was the UN's 17 **Sustainable Development Goals (SDGs)** adopted in 2015. In an act of solidarity, all 193 UN Member States agreed to endeavor to achieve the 169 targets included in the SDGs by 2030. While the SDGs envisage

a scope of work that is broader than traditional definitions of public health, SDG 3 (Ensure healthy lives and promote wellbeing for all at all ages) comprises a series of health-related targets. Of these, Target 3.5 (Strengthen the prevention and treatment of substance use, including narcotic drug abuse and harmful use of alcohol) explicitly mentions alcohol. However, harmful alcohol use also threatens development, and poses a preventable obstacle to many of the problems that are the foci of other targets (e.g., poverty, inequality, violence), including Target 3.4, related to NCDs. Target 3.5 is comprised of two indicators:

- **Treatment coverage:** Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance use disorders (including alcohol use disorders)
- **Harmful use of alcohol:** Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in liters of pure alcohol

Data Sources

Global Survey on Alcohol and Health

Through the **Global Survey on Alcohol and Health**, WHO collects information for all key alcohol-related indicators included in the 2030 Agenda for Sustainable Development and in global monitoring frameworks for noncommunicable diseases (NCDs), namely those on alcohol consumption (recorded, unrecorded, tourist, heavy episodic drinking and alcohol drinking status), interventions and policies at the national level from member states every four years. National counterparts are nominated by their respective ministries of health, and usually complete the survey data collection tool online. In the scenario where this was not feasible, a hard copy of the tool was forwarded directly to those who requested it. The questionnaire has 44 questions which are divided into three sections. Section A addressed alcohol policy; Section B addressed alcohol consumption and Section C addressed surveillance system and health services responses on alcohol and drugs. The original English questionnaire was translated into French, Portuguese, and Spanish. If the information was incomplete or in need of clarification, the questionnaire was returned to the focal point or national counterpart in the country concerned for revision, and revisions to the survey responses were resubmitted by email or electronically. The Global Survey on Alcohol and Health is focused primarily at national level situation in a given country, however, does inquire and provide space for comments to gain information on the subnational specificities. If a country did not respond to a particular question, the country was excluded from the analysis for that question.

In 2016, 175 of 194 WHO Member States responded to the Global Survey on Alcohol and Health, for an overall 90% response rate. Within the Americas, 33 of the 35 Member States responded, for a response rate that was slightly higher at 94%. Trend analyses presented in this report only use data from the 28 countries (80%) in the Americas that responded to the Global Survey of Alcohol and Health in all three years (2008, 2012, and 2016), and each question only uses data from countries that answered for all three years. Currently, the 2019 WHO Global Survey on Alcohol and Health has been completed however, the validated data are not yet available.

These data are made available to the public on the **Global Information System on Alcohol and Health (GISAH)** website, which is part of the **Global Health Observatory**, and countries and researchers are encouraged to use them to survey alcohol use and study the potential benefits of alcohol policies. In addition, countries who are considering new policies may also use GISAH data to identify other countries that have already implemented the policy of interest. In this sense, other member states may share "lessons learned" about the implementation process. Along these lines, this section will highlight several member states in the Americas that have enacted meaningful policy changes in recent years.

Additional data sources for alcohol consumption

Data on recorded adult per capita consumption (APC) of alcohol for most countries in the Region of the Americas are provided by the Food and Agricultural Organization of the United Nations, GlobalData, International Organization of Vine and Wine (OIV), International Wines and Spirits Record (IWSR), and the Wine Institute. Adult per capita consumption data based on the Food and Agricultural Organization have been shown to be inaccurate (*1, 2*). The estimation methods for all other organizations are not transparent and thus are not in line with the Guidelines for Accurate and Transparent Health Estimates Reporting (*3*). Recorded APC data are provided for Argentina (National Institute of Statistics and Census of Argentina; Instituto Nacional de Estadística y Censos República Argentina), Canada (Statistics Canada), Mexico (Secretariat of Health of Mexico; Secretaría de Salud), United States (Institute on Alcohol Abuse and Alcoholism (NIAAA) of the United States), and Uruguay (Directorate General Tax and National Institute of Viticulture of Uruguay; Dirección General Impositiva and Instituto Nacional de Vitivinicultura)) on a yearly basis. These estimations are transparent and in compliance with the Guidelines for Accurate and Transparent Health Estimates Reporting.

Data sources for unrecorded alcohol consumption

Unrecorded alcohol consumption was estimated as a percentage of total alcohol consumption. Country-level proportions of unrecorded alcohol consumption were estimated using a regression analysis.

Data sources for tourist consumption

Data for tourist estimations were obtained from the Institute for Health Metrics and Evaluation (IHME). The liters of alcohol consumed by tourists in a country were established based on the number of tourists who visited a country, the average amount of time spent in the country, and how much these individuals drink on average in their countries of origin. In addition, tourist alcohol consumption also took into consideration the peoples of the country who are consuming alcohol while visiting other countries. The estimations took the following into consideration: 1) that people drink the same amounts of alcohol when they are tourists as they do in their home countries, and 2) that tourist consumption can be either net negative or positive).

Data sources for alcohol drinking status and heavy episodic drinking

Data on alcohol drinking status and heavy episodic drinking (HED) were obtained from various surveys (published survey reports, multi-country reports and nationally representative surveys) in the general population including but not limited to the STEPwise approach to surveillance and Gender, Alcohol and Culture: an international study. The main sources of data on young persons (15-19 years of age) were the Global School-based Student Health Survey (GSHS).

Data source for morbidity and mortality

Data from the Global Burden of Disease (GBD) Study were used to estimate alcohol-attributable morbidity and mortality. As of 2016, incorporated data from 195 countries and 592 prospective and retrospective cohort studies on the risks associated with alcohol use (*4*). Researchers performed a systematic review and meta-analysis on this wealth of data to develop curves that estimate populations' relative risk of health outcomes based on levels of alcohol consumption (*4*).

IHME provides access to custom country- and region-level reports through a series of online tools, including the GBD Results Tool and GBD Compare. The GBD Results Tool allows users to enter specific search criteria, including a location, outcome, and risk factor of interest, and download a CSV file of results. GBD Compare is IHME's most comprehensive visualization, which is why it was used for the majority of the morbidity and mortality figures in this report. GBD Compare allows users to analyze and download levels and trends in alcohol-attributable health outcomes. Users can also compare these levels and trends by age, gender, or location.

ALCOHOL CONSUMPTION

Overview

The Region of the Americas has some of the highest prevalence rates of drinking in the world. Detecting patterns in alcohol consumption and harms data often requires mapping a complex web of individual-level (e.g., age, gender, genetics, income, and religion) and societal-level factors (e.g., development level, policies) that interact to shape how if and how people drink alcohol. These contextual data document which groups of people drink and how they drink, which often reveals important information about how alcohol-related harms concentrate in society. There are several well-established alcohol indicators that can be used in combination to paint a more complete picture of the people, places, and times associated with alcohol use. This section describes these indicators and uses them to understand the levels and patterns of alcohol use in the Americas in 2016.

Factors that affect alcohol consumption

Sex and gender

Across the Americas and the rest of the world, men generally drink considerably more alcohol than women. Men drink alcohol more frequently and with greater intensity than women *(5, 6)*. Recently, research and discussion of alcohol consumption trends sheds light on the convergence of men's and women's rate of binge drinking *(5, 7)*. Data from high-income countries suggest that the proportion of heavy-drinking women is growing faster than that for heavy-drinking men *(7-12)*, and men may be slowing down how often they drink heavily faster than women *(8)*. While these data suggest that the drinking patterns of the two groups are become more alike, it is unlikely that this finding would hold true across all people and places. For example, the gender gap may be closing faster among the young than it is among older drinkers with more entrenched drinking patterns *(13)*.

One reason why women may be drinking more in recent years has to do with the increasing focus of alcohol advertising on women and mothers. Historically, many societies and cultures have viewed alcohol consumption as more appropriate for men than women, but the emergence of women and mothers in a new style of alcohol advertising may begin to counteract these cultural trends and normalize alcohol use among women. While alcohol ads have often sexualized women over the years, these new ads equate women's liberation and empowerment with heavy drinking. They also depict alcohol as a means to cope with traditionally female stressors like raising children. "Pinkwashing" is another example of a recent female-centric tactic used by the alcohol industry. By distributing pink-colored alcoholic beverages or paraphernalia, the alcohol industry may be attempting to demonstrate a commitment to women's issues. One of the most common women's issues that the alcohol industry features in pinkwashing campaigns is breast cancer. The industry has used promotions that donate portions of the revenue to breast cancer research and prevention even though alcohol use causes breast cancer *(14, 15)*.

Age

Alcohol use among young people mirrors the alcohol consumption of the total population. In addition, the way people drink as adolescents (12-17 years old) can shape their trajectory of drinking behavior as they age *(16)*, including their risk for developing problematic drinking patterns and alcohol use disorders *(17)*. More specifically, youth who begin drinking before the age of 15 are four times more likely to become dependent on alcohol *(18)*, and the risk of developing an AUD peaks in adolescence and young adulthood (18-25 years old) *(17)*.

Income and inequality

For many health risks, the poor are more likely to engage in dangerous behaviors; but this is not the case with alcohol. At the country level, drinkers who live in countries with higher incomes drink more frequently *(19)*. In contrast, drinkers who live in middle-income countries tend to drink less frequently but consume greater overall quantities of alcohol *(19)*. One potential reason for these findings is that high-income countries[1] tend to have higher commercial availability of alcohol, which can further normalize alcohol use *(19)*. Among high-income countries, low-income persons drink less often but consume larger volumes of alcohol when they drink, compared to high-income drinkers *(20)*.

Generally, the percentage of a population who drinks and the frequency with which they drink tends to be greater in locations where people have higher disposable incomes. This means that in low- and middle-income countries, abstention is more common than it is in their high-income counterparts *(21)*. However, there are other mitigating factors (e.g., religion, policy) that can change these trends. It is also important to note that the association between alcohol consumption and wealth can be bidirectional. Alcohol use can impede the type of sustainable development that is envisaged in the SDGs, particularly in resource-challenged settings. Although alcohol is only explicitly mentioned in SDG 3 on health and well-being (SDG target 3.5), alcohol adversely impacts 13 of 17 SDGs and a total of 52 targets, effectively affecting all the three dimensions of the 2030 Agenda. It is a significant obstacle to sustainable human development, cross-cutting in many areas of the 2030 Agenda: the economic, social and environmental. It has a direct impact on many health-related targets of the Sustainable Development Goals, including those for maternal and child health (SDG targets 3.1 and 3.2), infectious diseases (HIV, viral hepatitis, tuberculosis - SDG target 3.3), noncommunicable diseases (NCDs) and mental health (SDG target 3.4), and road injuries (SDG target 3.6).

Alcohol indicators

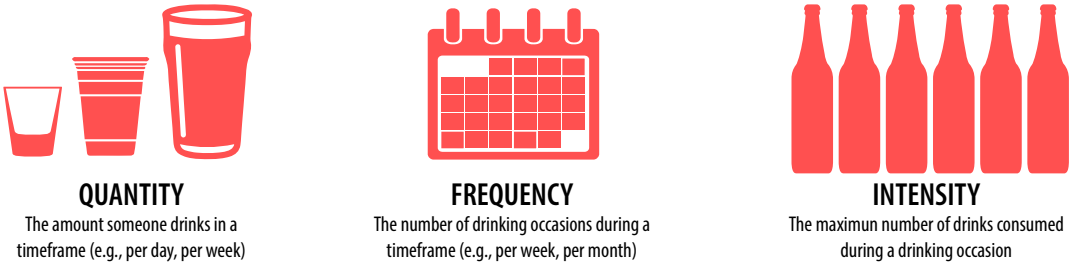
Generally, alcohol indicators measure volume and pattern of drinking. **Volume** is the total amount or quantity of ethanol consumed. There are several volume indicators, depending on the focus (i.e., individual or population level) and the time period (i.e., specific drinking occasion or average over a given time period). The second group of indicators **- pattern of drinking -** is only measured at the individual level and they add contextual information to measures of volume. In doing so, they can help describe drinking occasions, such as the location (e.g., public vs. private), frequency (e.g., drinkers who drink daily), intensity (the maximum number of drinks consumed during a drinking occasion) and "wetness" (e.g., the proportion who get drunk). Figure 1 summarizes key terms related to drinking patterns.

In order to be interpretable and meaningful, alcohol indicators must be specific to a place and bound by a period of time (e.g., past month, year, and lifetime). The data presented in this report focus on the national level unless otherwise stated. While this permits a more uniform discussion of national trends, it is important to remember that there are important sub-national differences in how populations drink alcohol that will not be captured using these methods. In addition, the time period for alcohol indicators is specific to the type of behavior measured, so it will change over this section of the report. For example, this report presents current

1 Data are from the International Alcohol Control Study and include Saint Kitts and Nevis.

drinking and abstention for the past year (12 months) but heavy episodic drinking for the last month (30 days). This is because shorter time periods capture recent phenomena while longer time periods describe more enduring trends, average across seasonal changes, and capture infrequent use.

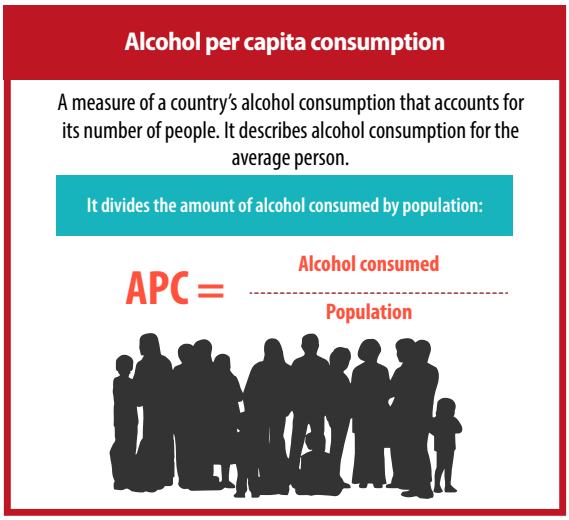
Figure 1. Key terms for drinking patterns



How populations drink: Levels of consumption

"Per capita" means "per person," so **alcohol per capita consumption (APC)** is the average amount of absolute or pure alcohol consumed by the average person in a stated period of time (Figure 2). APC is a population-level measure of volume that is often a useful foundation for understanding alcohol use in a given location. However, as will be shown, is often insufficient to understand all of the determinants that shape risk for alcohol-related harms. APC is also a key indicator; it can capture different dimensions of alcohol use by changing the type(s) of alcohol (e.g., total, recorded, and unrecorded alcohol) and/or the population (e.g., adults, youth, or drinkers).

Figure 2. Alcohol per capita consumption (APC) definition



There are two components of APC: amount of alcohol consumed and population size. This means that the most basic APC measures do not require survey data, which can be expensive to collect and unreliable at times, as surveys may under-report the total consumption. This simplicity also poses limitations. When interpreting APC values, it is important to remember that the amount of alcohol consumed depends on several factors: 1) The percent of people who drink (prevalence of current drinking), 2) How often drinkers drink (frequency), and

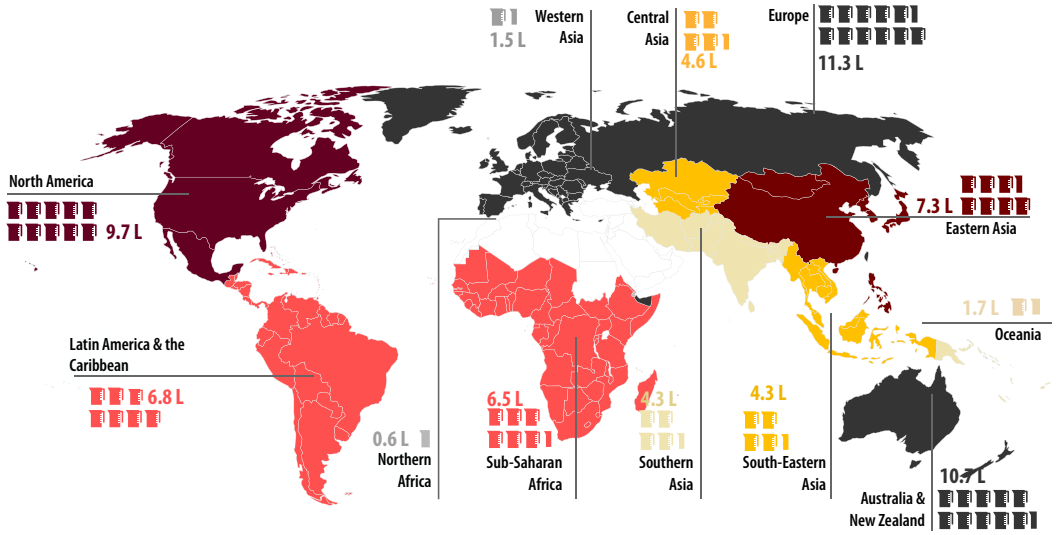
3) How much drinkers drink (volume). Thus, places with a high prevalence of current drinkers, high frequency of alcohol consumption, and/or large volumes of alcohol consumption will have higher APC values, and these three phenomena will be summarized using one number. This provides a comprehensive measure that is easy to compare across countries and times, but it can be hard to interpret these values if there are countervailing patterns in these three drivers of APC (e.g., low prevalence of current drinking but high volume of drinking).

Total adult alcohol per capita consumption (APC)

When assessing APC values, it is common to begin with the adult population (called **"total adult APC"**), which aims to approximate the level of alcohol use among the population that is legally permitted to drink alcohol (regardless of whether they actually drink alcohol or not). Total adult APC is calculated as the total (recorded and estimated unrecorded) pure or absolute liters of alcohol consumed per person aged 15 years or older in a calendar year, and it is adjusted for alcohol consumption by tourists who do not reside in the country. Total adult APC is interpreted as the amount of pure alcohol that is consumed by the average adult in a given time. In 2016, adults (aged 15+ years) drank 6.4 liters of pure alcohol on average in the world, which equals roughly 13.6 g of pure alcohol per day (roughly 1.5 drinks).2 By comparison, the Americas had a total adult APC (8.0 liters of pure alcohol) that was 25.0% higher than this global average in 2016.

Figure 3 shows the total adult APC at for the 14 UN sub-regions in 2016. This map reveals that the average adult in Europe (11.3 liters) and Australia and New Zealand (10.7 liters) drank larger volumes of pure alcohol than the average adult in the Americas. However, the two sub-regions in the Americas both had above-average adult APC values. North America had the third highest adult APC (9.7 liters) and Latin America and the Caribbean was not far behind with the fifth highest adult APC (6.8 liters). Most (61%) countries in the Americas had a total adult APC that was higher than the global average. The total adult APC rose with income in the Americas; it was 4.4 liters in low- and lower-middle-income countries, 6.8 liters in upper-middle-income countries, and 9.0 liters in high-income countries.

Figure 3. Total alcohol per capita consumption (APC) among adults (15+ years; in liters of pure alcohol) by United Nations Sub-Regions, 2016

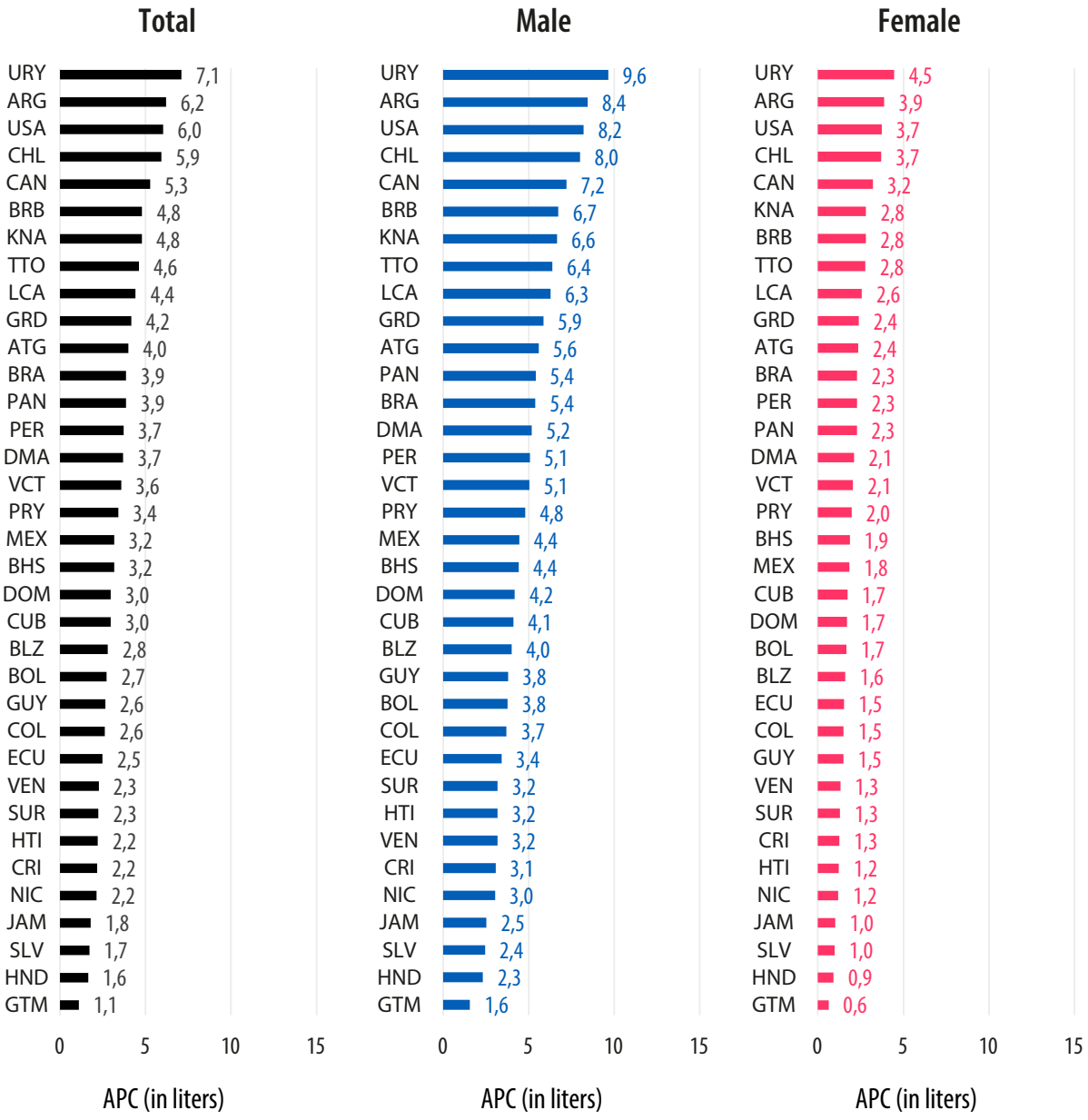


Source: *Shield, K., Manthey, J., Rylett, M., Probst, C., Wettlaufer, A., Parry, C. D., & Rehm, J. (2020). National, regional, and global burdens of disease from 2000 to 2016 attributable to alcohol use: a comparative risk assessment study. The Lancet Public Health, 5(1), e51-e61.*

2 This was calculated assuming that one standard alcoholic drink contains 10 grams of pure alcohol and that each drinker consumed the type(s) of alcohol most commonly consumed in their country.

The APC among youth is an important indicator because the young are more sensitive to alcohol's harmful effects and therefore often bear a disproportionate share of harms from alcohol use, including those from other people's drinking *(22)*. When comparing total APC among youth (15-19 year olds) by UNC sub-region, North America (5.2 liters) and Latin America and the Caribbean (3.3 liters) had above-average levels of consumption among youth in the global context similar to the patterns seen with total adult APC. Figure 4 shows the average number of liters of pure alcohol consumed by the average youth in 2016 for each country in the Americas. Three high-income countries—Uruguay (7.1 liters), Argentina (6.2 liters), and the United States (6.0 liters)—had some of the highest APCs for both adults and youth in the Region.

Figure 4. Total alcohol per capita consumption (APC) among youth (15-19 years; in liters of pure alcohol) in the Americas, by country and gender 2016



Sources: *Pan American Health Organization/World Health Organization, Evidence and Intelligence for Action in Health Department/Health Analysis, Metrics and Evidence Unit. PLISA Database. Core Indicators 2019: Health Trends in the Americas. Washington, D.C., United States of America, 2019.*

Total alcohol per capita consumption (APC) among drinkers

While the total adult and youth APC provide valuable information about average volumes of consumption, they are calculated for the total population 15 years and older, regardless of whether they drink any alcohol. In some instances, this can obscure important differences between countries, because it can make it appear as if the population consume artificially low levels of alcohol in countries where fewer people drink. The magnitude of APC indicators and country rankings change appreciably after restricting them to only include current drinkers. For example, the average adult in the Americas consumed 8.0 liters of pure alcohol, but the average adult drinker consumed almost twice that amount: 15.1 liters. The APC among drinkers is calculated by dividing the total amount of alcohol consumed by the population over 15 years of age estimated to be current drinkers (i.e., persons who report any amount of drinking in a calendar year). The prevalence of current drinkers is, in turn, is estimated from national surveys.

Figure 5 shows the countries with the highest APCs among adults, and Figure 6 shows those with the highest APC among drinkers. These two lists are noticeably different. As an example, Brazil had a middling APC among adults (7.5 liters) but the highest APC among drinkers (19.2 liters), which means its APC among drinkers is about 150% higher than its total APC. This suggests that fewer people drink in Brazil than in other countries in the Americas but drinkers in Brazil consume atypically large volumes of alcohol. On average, the APC among drinkers (14.4 liters) was 121% higher than the adult APC in the Americas (6.9 liters). The difference between the average amounts of alcohol consumed by adults and drinkers was largest in Mesoamerica (5.3 vs 13.8 liters; 171% difference) and the Andean Area (5.2 vs 12.1 liters; 136% difference). It was smallest in North America, where alcohol consumption is highly prevalent (9.4 vs. 13.3 liters; 42% difference).

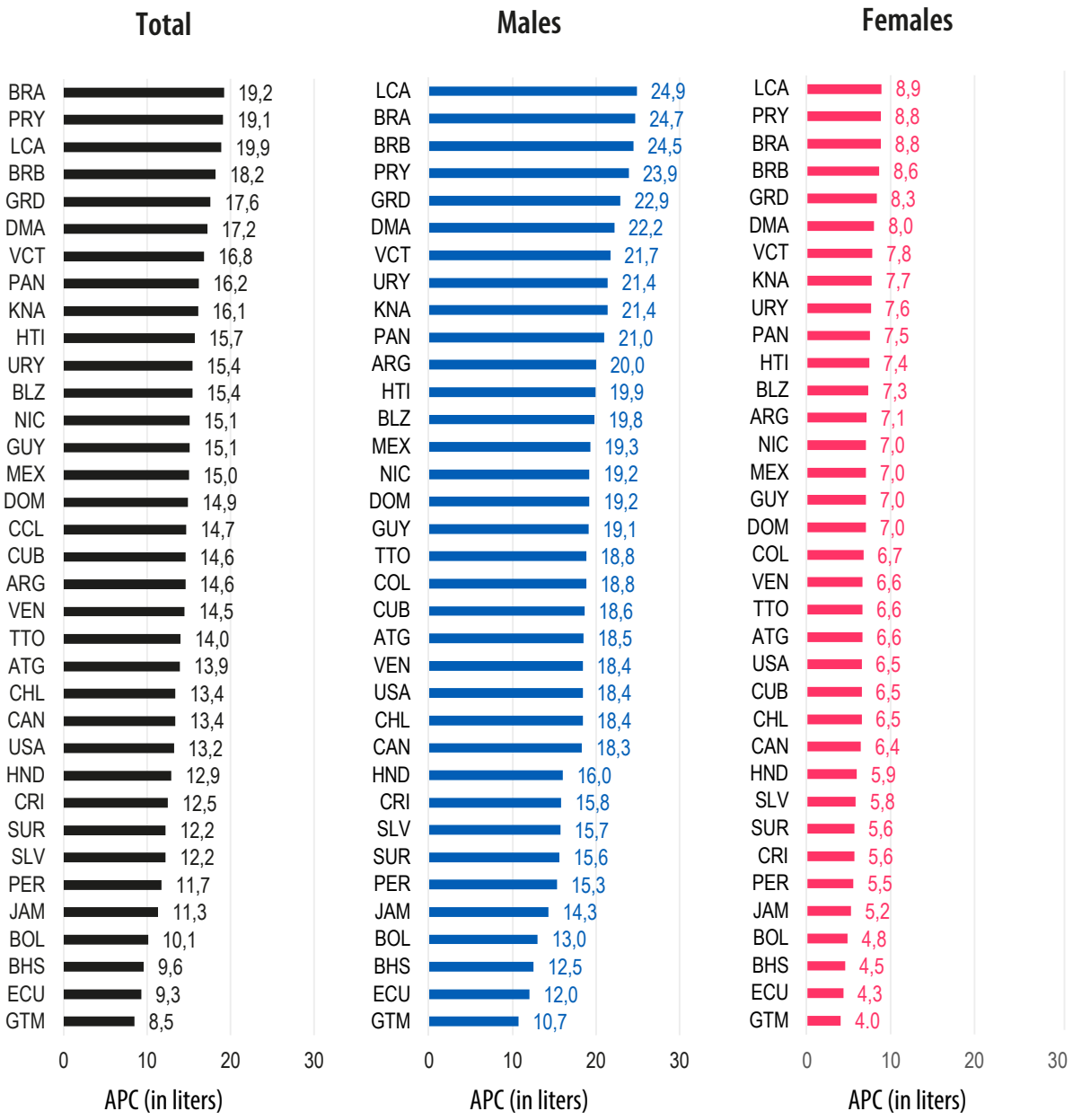
Men averaged higher levels of alcohol consumption in every country in the Americas, with the highest average levels of consumption among males seen in Saint Lucia (24.9 liters), Brazil (24.7 liters), and Barbados (24.5 liters). Overall, women drank on average ¼ (27.2%) of the alcohol that men did in the Americas, and there were clear patterns by sub-region and income group. At the sub-regional level, the difference between men and women's consumption was largest in Mesoamerica (female APC: 2.2 liters [25.7% of male APC], male APC: 8.6 liters) and the Non-Latin Caribbean (female APC: 3.2 liters [26.3% of male APC], male APC: 12.3 liters). Within the Andean Area, North America, and the Southern Cone, women averaged approximately 29-30% of the alcohol consumed by men. Women tended to drink more like men in countries with higher incomes, with the ratio of women's APC to males' rising with income: 25.9% in lower-middle-income countries, 26.9% in middle-income countries, and 28.9% in high-income.

Figure 5. Total alcohol per capita consumption (APC) among adults (15+ years; in liters of pure alcohol),by gender and country, 2016

Total			Males		Females	
Rank	Country	Litres	Country	Litres	Country	Litres
1	URY	10.9	URY	17.1	URY	5.3
2	LCA	9.9	BRB	16.0	ARG	4.7
3	USA	9.8	LCA	16.0	USA	4.6
4	ARG	9.7	USA	15.2	CHL	4.5
5	BRB	9.7	ARG	15.0	KNA	4.1
6	KNA	9.4	GRD	14.8	CAN	4.1
7	GRD	9.3	KNA	14.7	LCA	4.1
8	CHL	9.3	CHL	14.3	BRB	4.1
9	CAN	9.0	CAN	14.1	TTO	3.9
10	TTO	8.6	TTO	13.6	GRD	3.9
11	DMA	8.3	DMA	13.4	ATG	3.5
12	VCT	8.3	VCT	13.1	DMA	3.4
13	PAN	7.8	ATG	12.5	PAN	3.3
14	ATG	7.7	PAN	12.3	VCT	3.3
15	BRA	7.5	BRA	12.0	BRA	3.3
16	PRY	7.3	PRY	11.4	PRY	3.1
17	BLZ	6.9	BLZ	10.7	PER	3.0
18	MEX	6.6	MEX	10.6	MEX	2.8
19	DOM	6.6	DOM	10.6	BLZ	2.8
20	GUY	6.5	GUY	10.4	DOM	2.8
21	BHS	6.2	BHS	9.9	BHS	2.8
22	PER	6.2	HTI	9.5	GUY	2.5
23	CUB	6.0	CUB	9.5	CUB	2.5
24	COL	5.8	PER	9.5	COL	2.4
25	HTI	5.8	COL	9.5	HTI	2.3
26	NIC	5.2	NIC	8.6	BOL	2.2
27	SUR	5.1	SUR	8.1	NIC	2.1
28	VEN	4.8	VEN	7.6	SUR	2.1
29	BOL	4.8	CRI	7.6	VEN	2.0
30	CRI	4.8	BOL	7.3	ECU	2.0
31	ECU	4.2	JAM	6.7	CRI	2.0
32	JAM	4.2	HND	6.5	JAM	1.7
33	HND	4.0	ECU	6.4	SLV	1.6
34	SLV	3.8	SLV	6.4	HND	1.6
35	GTM	2.5	GTM	4.1	GTM	1.1

Sources: *Pan American Health Organization/World Health Organization, Evidence and Intelligence for Action in Health Department/Health Analysis, Metrics and Evidence Unit. PLISA Database. Core Indicators 2019: Health Trends in the Americas. Washington, D.C., United States of America, 2019.*
World Health Organization. (2018). Global Information System on Alcohol and Health. Drinkers only, Levels of Consumption. Available at: *http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Figure 6. Total alcohol per capita consumption (APC) per drinker (15+ years; in liters of pure alcohol) in the Americas in 2016 by sub-region, country, and gender



Source: *Pan American Health Organization/World Health Organization, Evidence and Intelligence for Action in Health Department/Health Analysis, Metrics and Evidence Unit. PLISA Database. Core Indicators 2019: Health Trends in the Americas. Washington, D.C., United States of America, 2019.*

Most consumed beverage types

Another source of variation across countries is the type(s) of alcoholic beverages consumed. Beverage choices result from differences in the ingredients, taste, and status of these beverages. Understanding which type(s) of alcohol are favored and the underlying rationale for those preferences can provide context for anticipating whether policies that are designed to modify beverage choices are likely to promote substitution effects *(11)*. Figure 7 shows the beverage preference at the country level. In 2016, beer was the alcoholic beverage of choice in the Americas; it accounted for 53.8% of all alcohol consumed in the Region. Still, there is variation in the types of beverages preferred at the country level. Spirits are the most consumed alcoholic beverages among many countries in Central America (e.g., El Salvador, Nicaragua) and the Caribbean (e.g., Bahamas, Barbados, Dominica, and Trinidad and Tobago). Wine

consumption has been consistently infrequent in the Americas since 2000, although it is preferred in a few countries like Argentina and Uruguay.

Figure 7. Beverage choice in the Americas, by country 2016

NOTE: *Beverage choice defined as the type of alcoholic beverage with the greatest percent of consumption.*
SOURCE: *World Health Organization. (2018). Global Information System on Alcohol and Health. Consumption by Type of Alcoholic Beverage, Levels of Consumption. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Grams of pure ethanol consumed per day

Grams of pure ethanol (alcohol) consumed per day is another valuable alcohol indicator that is often used to inform national guidelines for levels of alcohol consumption. It can be calculated by converting APC values from liters to grams (given that alcohol weighs 0.793 g/cm3 at 20°C) and dividing by 365 days. Bringing together data on beverage type and grams of pure alcohol, Figure 8 summarizes the number of standard drinks consumed on average by drinkers in each country. This was calculated assuming that one standard alcoholic drink contains 10 grams of pure alcohol and that each drinker consumed the type(s) of alcohol most commonly consumed in their country. In Figure 8, each circle represents one gram of pure alcohol, and each row (comprise of 10 circles) represents one standard drink. The color of the circles in Figure 8 indicates the beverage preference for each gram of alcohol consumed each day by drinkers, with gold used for beer, red for wine, pink for spirits, and teal for other alcoholic beverages.

On average, drinkers in the Americas consumed roughly to 2.3 alcohol drinks[3] every day in 2016, although it ranged from 1.9 drink in Guatemala to 4.4 drinks in Para-

3 One drink is equivalent to a can of beer (355 ml), a glass of wine (150 ml), or a shot of distilled spirits (40 ml).

guay. At the sub-regional level, the lowest average daily consumption levels were seen in the Andean Area (2.7 drinks), North America (2.9 drinks), and Mesoamerica (3.1 drinks) while the highest levels were in the Non-Latin Caribbean (3.4 drinks) and the Southern Cone (3.6 drinks). When examining the daily alcohol intake by gender, male drinkers (4.3 drinks) consumed approximately three times more alcoholic drinks per day than female drinkers (1.4 drinks).

Figure 8. Average number of alcoholic drinks a day per drinker in the Americas, by country and beverage type 2016

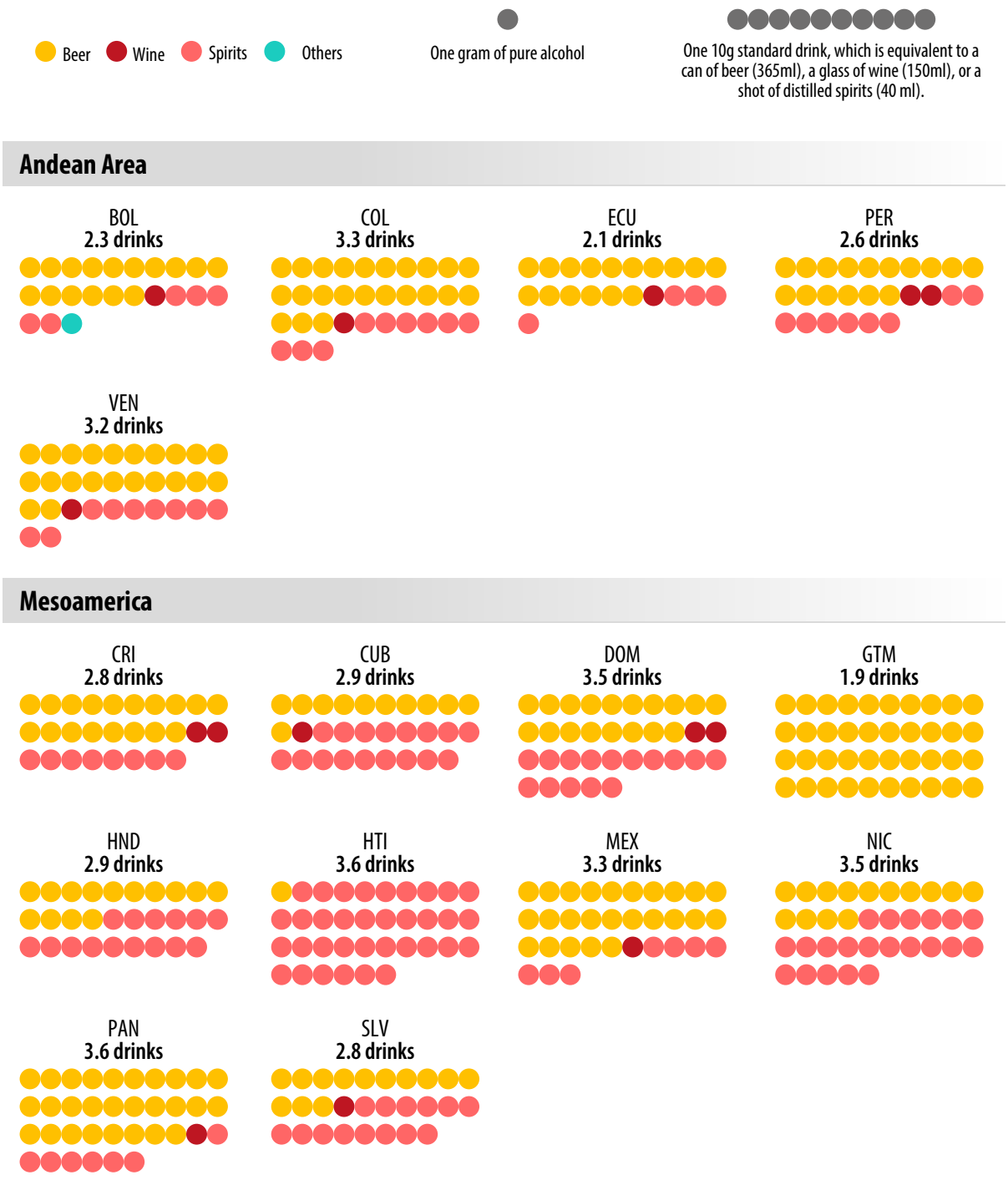
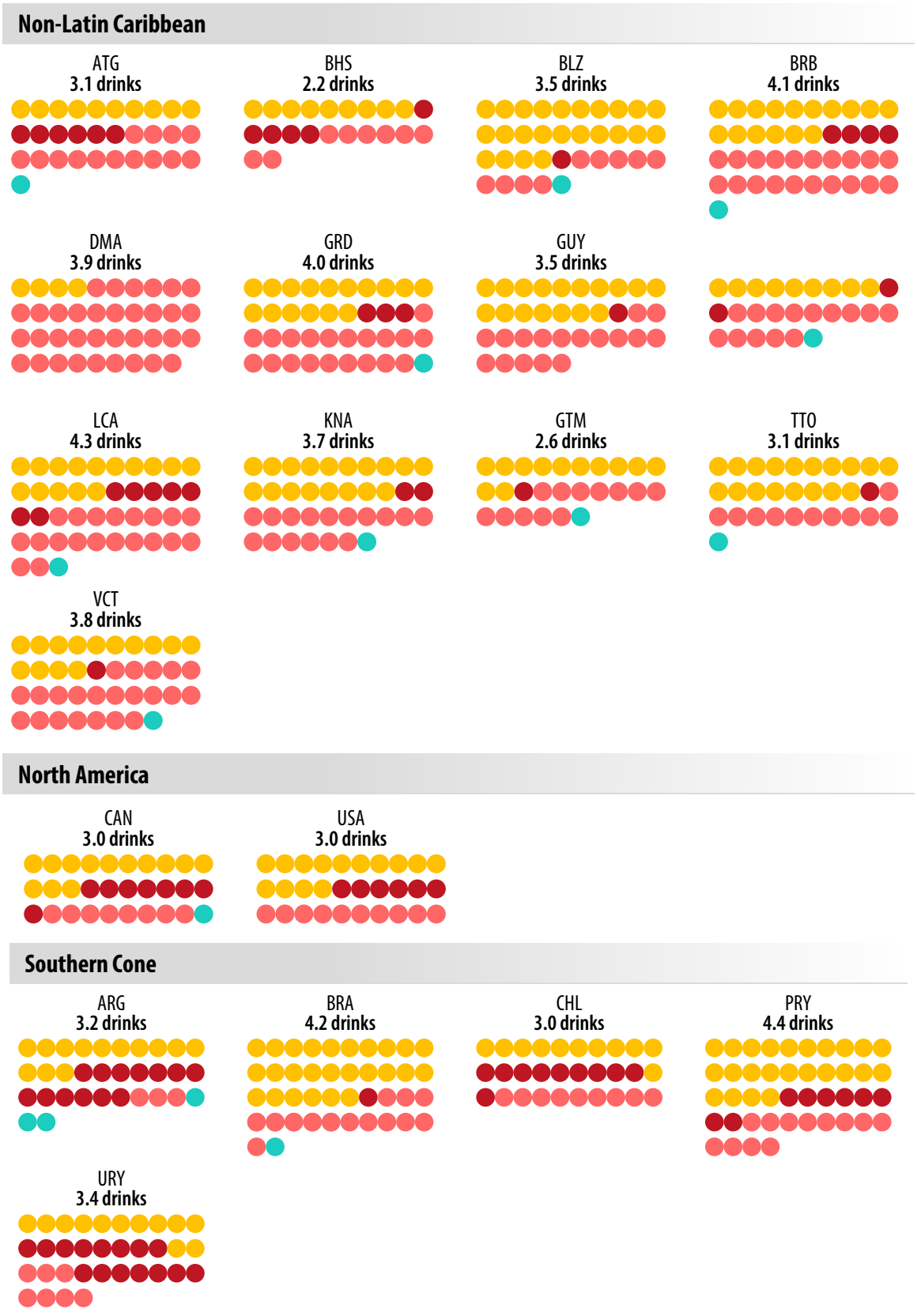


Figure 8. Average number of alcoholic drinks a day per drinker in the Americas, by country, sub-region and beverage type 2016 (Cont.)



Sources: *World Health Organization. (2018). Global Information System on Alcohol and Health. Consumption by Type of Alcoholic Beverages, Levels of Consumption. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*
World Health Organization. (2018). Global Information System on Alcohol and Health. Average daily intake in grams of alcohol by country, Levels of Consumption. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH

Sources of alcohol: Recorded vs. unrecorded

Total alcohol includes all types of alcoholic beverages that are consumed in a country, regardless of whether it is counted in official statistics (i.e., **recorded consumption**), not counted in these statistics (i.e., **unrecorded consumption**), or consumed by tourists. Alcohol that is produced, distributed, and sold outside of the formal business sector and outside of government purview is called unrecorded alcohol, therefore is not accounted for in official country statistics on alcohol taxation or sales. Unrecorded alcohol includes informally produced alcohol (i.e., homemade fermented/distilled beverages and small-scale production of traditional beverages), illicit alcohol (i.e., alcohol smuggled across borders or produced illegally to avoid taxes and tariffs) and surrogate alcohol (commonly ethanol that was not produced as beverage alcohol but is used as such; i.e., mouthwash and medical tinctures) *(23)*. Across the world and in the Americas, artisanal spirits and surrogate alcohol were the most prevalent types of unrecorded alcohol in 2016 *(23)*.

In 2016, only five countries in the Americas reported estimates of unrecorded alcohol consumption directly. PAHO developed a tool to help countries identify the existing data and determine how to use those data to generate estimates of the levels of unrecorded consumption without relying on alcohol industry data (Box 2). To date, Mexico and Brazil have successfully used this tool to estimate per capita consumption levels.

Box 1. Tourist deaths from illicit alcohol in the Dominican Republic

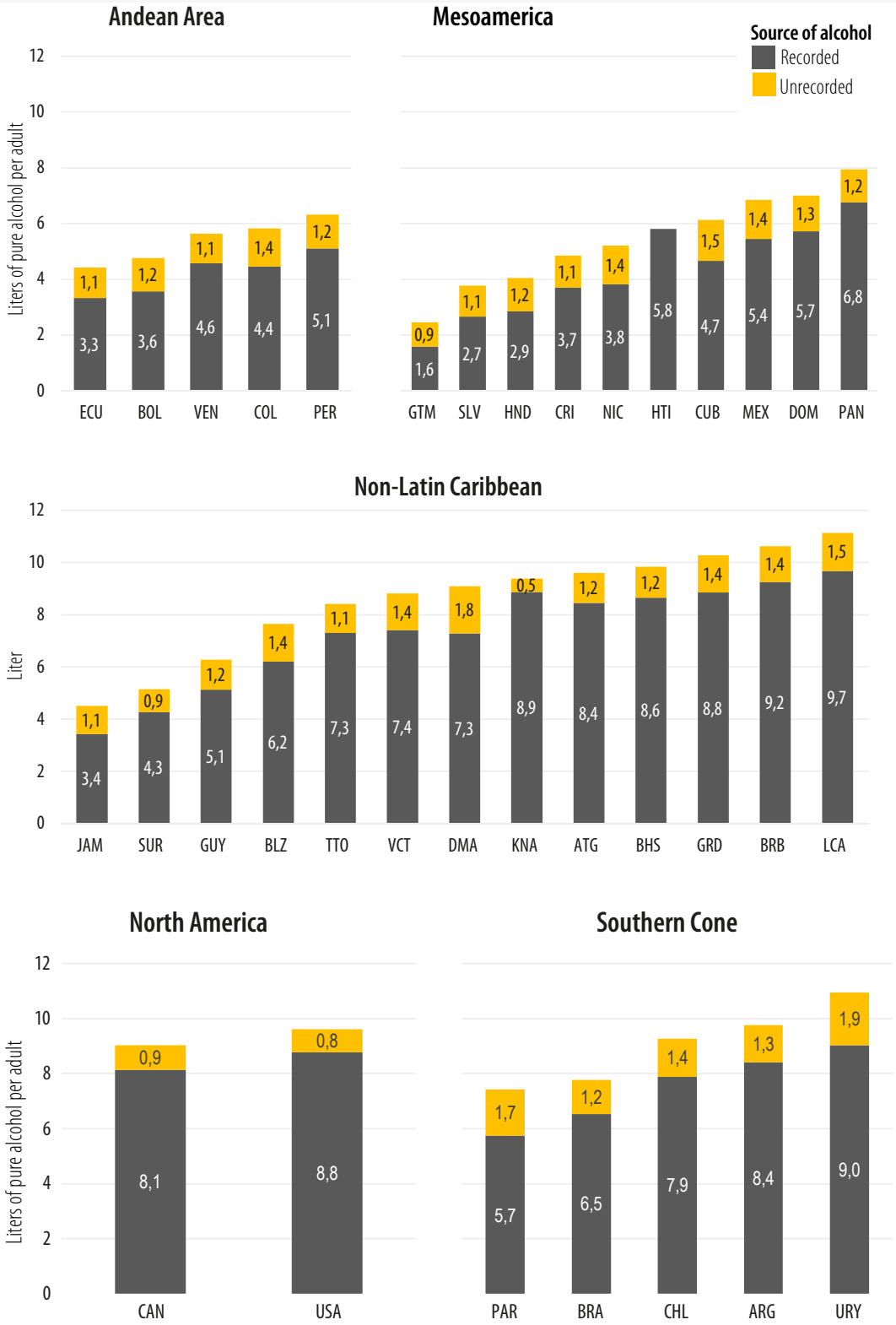
Tourism comprises just under 10% of the Dominican Republic's gross domestic product, and roughly 1 in 13 people are employed in the hospitality industry through jobs at hotels, restaurants or bars *(24)*. In the year spanning 2018-2019, newspapers reported that there were 10 tourist deaths reportedly linked to contaminated alcohol accessed via swim-up bars or hotel minibars at resorts across the Dominican Republic *(25)*. In addition, more than a dozen additional visitors reported serious illnesses with symptoms similar to those who perished *(25)*. Those who passed away suffered from heart attacks, pulmonary edema, respiratory failure, and vomiting blood *(26)*.

While most unrecorded alcohol poses no health risk over and above the ethanol content, there can be epidemics of illness, and sometimes death, associated with batches of adulterated alcohol *(23)*. A forensic scientist reported that the tourists' symptoms were consistent with pesticide or methanol poisoning. Methanol (also called methyl alcohol) is a type of alcohol that is commonly used to create commodity chemicals such as antifreeze and windshield wiper fluid. It is very difficult to tell apart methanol from ethanol by smell or taste. However, methanol is much more toxic than ethanol as the human body is less efficient in processing methanol than ethanol. After ingestion, liver enzymes convert methanol byproducts into formic acid, which can cause the body to shut down. Symptoms of alcohol poisoning can occur with smaller volumes of methanol (e.g., 2-8 ounces) than ethanol because the body is more efficient at breaking down and clearing ethanol from the body. Methanol poisoning is the second most severe health risk of consumption of illicit/informal alcohol (after ethanol) *(23)*, and these localized outbreaks may spark fear among travelers. However, methanol deaths account for less than 0.1% of all alcohol-attributable deaths and the vast majority of alcohol poisonings and harm is caused by ethanol alone *(23)*.

Like the patterns in recorded alcohol described in the previous sections, there is often an economic gradient in the levels of unrecorded alcohol. It tends to be more prominent in countries with lower incomes. At an individual level, it tends to be the poor, marginalized or individuals living in vulnerable circumstances who drink unrecorded alcohol from the cheapest source as it is more accessible. Within this population subset, it often includes individuals with AUD. This population has already accumulated a lot of risks, not only due to alcohol, but also because of poor living conditions, diet, comorbidities, and their exposure to infectious diseases if drinking is consumed in crowded places. These groups already have less access to health services and social protection, therefore, adulteration of these sources of alcohol with methanol or other toxic substances will affect these most vulnerable groups, thus worsening further health and social inequities within a society. There is one exception: cross-border shopping tends to be more prevalent among high-income countries *(23)*. Roughly one-quarter (25.5%) of all alcohol consumed in the world in 2016 was produced unrecorded. By comparison, unrecorded consumption was less common in the Americas, comprising just 13.8% of the alcohol consumed.

Figure 9 shows the amount of recorded and unrecorded alcohol consumed by the average adult in the Americas. Within the Americas, three of the heaviest-drinking countries had the highest levels of unrecorded APC levels in 2016: Uruguay (1.9 liters), Dominica (1.8 liters), and Paraguay (1.7 liters). At the other end of the spectrum, there were six countries with very low levels of estimated unrecorded alcohol consumption: Haiti (0.0 liters); Saint Kitts and Nevis (0.5 liters); the United States of America (0.8 liters); and Canada, Guatemala, and Suriname (all 0.9 liters).

Figure 9. **Total alcohol per capita consumption (APC) among adults (15+ years; in liters of pure alcohol) in the Americas in 2016, by source (recorded vs. unrecorded), sub-region, and country**



Sources: *World Health Organization. (2018). Global Information System on Alcohol and Health. Levels of Consumption. Recorded alcohol per capita consumption, three-year average with 95%CI by country.*
World Health Organization. (2018). Global Information System on Alcohol and Health. Unrecorded consumption with 95% CI, Levels of Consumption.
Both sources available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH

Even though unrecorded alcohol is by definition subject to fewer regulations than recorded alcohol, that does not necessarily mean that it is always less safe. Empirical evidence suggests that the greatest risk from unrecorded alcohol is the same as formally produced alcohol—ethanol content *(23)*. There is a common misconception that methanol poisoning is a major risk of consuming unrecorded alcohol, but methanol poisoning deaths comprise only 0.1% of the alcohol-attributable deaths each year *(23)*. Despite their relative rarity, case studies of geographically confined outbreaks that can arise from unsafe batches of informal and illicit alcohol are often reported by the media (Box 1). Within the Americas, there is one other often overlooked risk of unrecorded alcohol that surpasses those of the ethanol, which is contamination with heavy metals *(23)*. Within the United States, there are reports of lead poisoning associated with moonshine produced in the United States *(23)*. In recent years, newspapers reported that there were outbreaks like this in the Dominican Republic (see Box 1). When viewed from a government's perspective, another major problem associated with unrecorded alcohol is the revenue losses, because unrecorded alcohol is not subject to established alcohol taxes. By properly regulating these products and taxing them, the recouped revenues may increase countries' capacity to prevent and/or treat the harms that arise from alcohol use, while reducing the negative harms from adulteration and poisonings of noncommercial products.

Box 2. PAHO tool to calculate APC

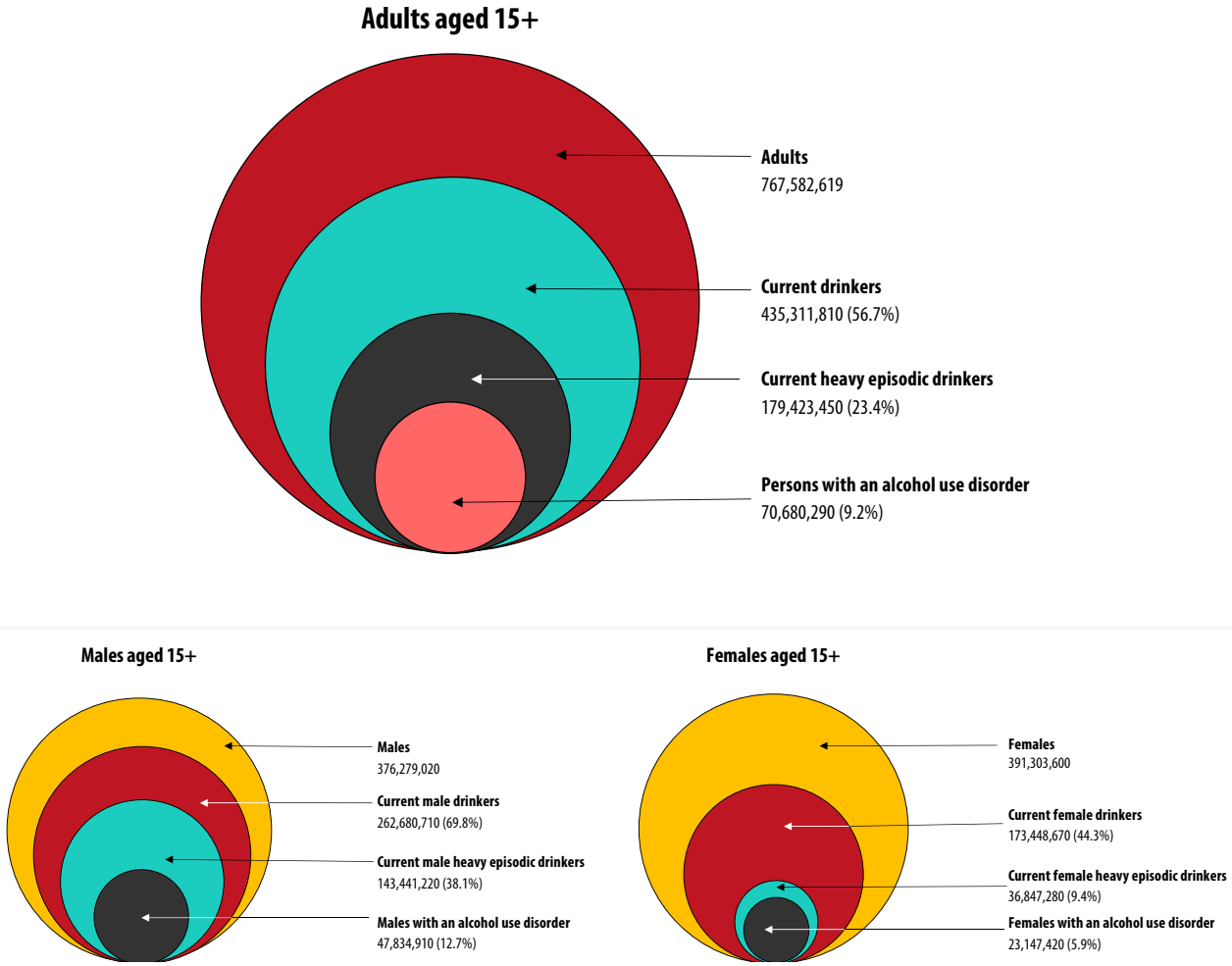
Data on recorded APC can be collected and reported by a country's statistical office using the APC of alcohol tool developed by the Pan American Health Organization. Data on alcohol production, importation and exportation are needed, at a minimum, to estimate recorded APC of alcohol. The accuracy of adult per capita consumption of alcohol estimates can be increased by including additional data, such as on alcohol re-exports and additional stock. These data should be measured either in overall volume of pure alcohol (i.e., ethanol) or overall volume of production, imports and exports, in each case by beverage type. If data on overall volume of pure alcohol by beverage type is used, then the percentage of alcohol by volume will be required. Examples of common percentages (i.e., strengths) include beer (barley beer 5%), wine (grape wine 12%; must of grape 9%, vermouth (16%), spirits (distilled spirits 40%; spirit-like 30%), and other (sorghum, millet, maize beers 5%; cider 5%; fortified wine 17% and 18%; fermented wheat and fermented rice 9%; other fermented beverages 9%). However, the percentage of alcohol by volume may vary by country. In some cases, country specific data can be used to increase data accuracy, such as a specific alcohol by volume for malt beer (4.61%) and gin (42%) in Mexico.

How individuals drink: Drinking patterns

Current drinking and abstention

As previously described, the most basic distinction at the individual level is whether a person drinks alcohol at all. **Abstainers** are persons who refrain from drinking, and there are two types of abstainers. **Lifetime abstainers** are persons who have never drank alcohol, and **current abstainers** (also called "former drinkers") are persons who have not consumed alcohol over an established timeframe, usually the past year, although they have drunk alcohol at some point during their life. In many parts of the world, drinkers drink infrequently. For this reason, it is common to define **current drinkers** as persons who have consumed at least one standard alcoholic drink in the past 12 months. The year-long timeframe is long enough to capture both regular and irregular drinkers. Figure 10 shows the percent of adults who drink and the percent of adults who fall into two categories of high-risk drinking: heavy episodic drinkers and alcohol use disorders.

Figure 10. Drinking status for adults (aged 15+) who lived in the Americas in 2016



Note: *Circle sizes are proportional to population sizes. Totals for males and females may not sum to total for all adults due to rounding. Percentages are percentages of individuals and not country averages and may therefore differ from other graphs in this report and the Global Status Report on Alcohol and Health 2018.*
Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Alcohol consumers, Past 12 months, Patterns of Consumption.*
World Health Organization. (2018). Global Information System on Alcohol and Health. Heavy episodic drinking, Past 30 days, Patterns of Consumption. World Health Organization. (2018). Global Information System on Alcohol and Health. Alcohol use disorders (15+) 12-month prevalence (%) by country, Morbidity, Harms and Consequences. All sources available at: *http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Heavy episodic drinking

Heavy episodic drinking (HED) is defined as consuming 60+ grams of pure alcohol (roughly five standard alcoholic drinks) on at least one occasion monthly *(27)*. This threshold aims to detect persons who consume alcohol in quantities that are large enough to result in intoxication and/or harm *(6, 28, 29)* although the threshold for increased risk is different across socio-demographic groups, and may be lower for more vulnerable sub-groups like youth and women. The utility of this indicator is not limited to intoxication-related harms, however, because many alcohol-attributable chronic diseases have a dose-response relationship whereby the odds of harms increase as the volume of alcohol ingested increases *(27)*.

There were roughly 222 million heavy episodic drinkers in the Americas in 2016, and 42.0% lived in the United States, 18.0% lived in Brazil, 10.3% lived in Mexico, and 4.5% lived in Argentina (data not shown). However, when interpreting these estimates of HED, it is important to consider that they may be conservative because

the amount of alcohol consumption reported on surveys is usually a small fraction of that sold in retail stores. This suggests that people under-report the amount of alcohol that they drink on surveys. This underreporting may be exacerbated due to recruitment biases which may result in higher non-response rates among heavy episodic drinkers.

The fraction of male drinkers who drank heavily on occasion in the Americas in 2016 was roughly three times the fraction of female drinkers who did so (Figure 10). Rates of HED among male drinkers were highest in the Caribbean, including Trinidad and Tobago (64.8%), Saint Kitts and Nevis (64.5%), Grenada (63.7%), and Saint Lucia (62.9%). However, the disparity between HED among males and females was largest in Central American countries, including Guatemala (87.3%), Honduras (86.6%), El Salvador (86.4%), and Nicaragua (85.2%)

Figure 11. Prevalence (%) of past 12-month alcohol use and prevalence of heavy episodic drinking (HED) among adults (15+ years) in the Americas, by country and gender 2016

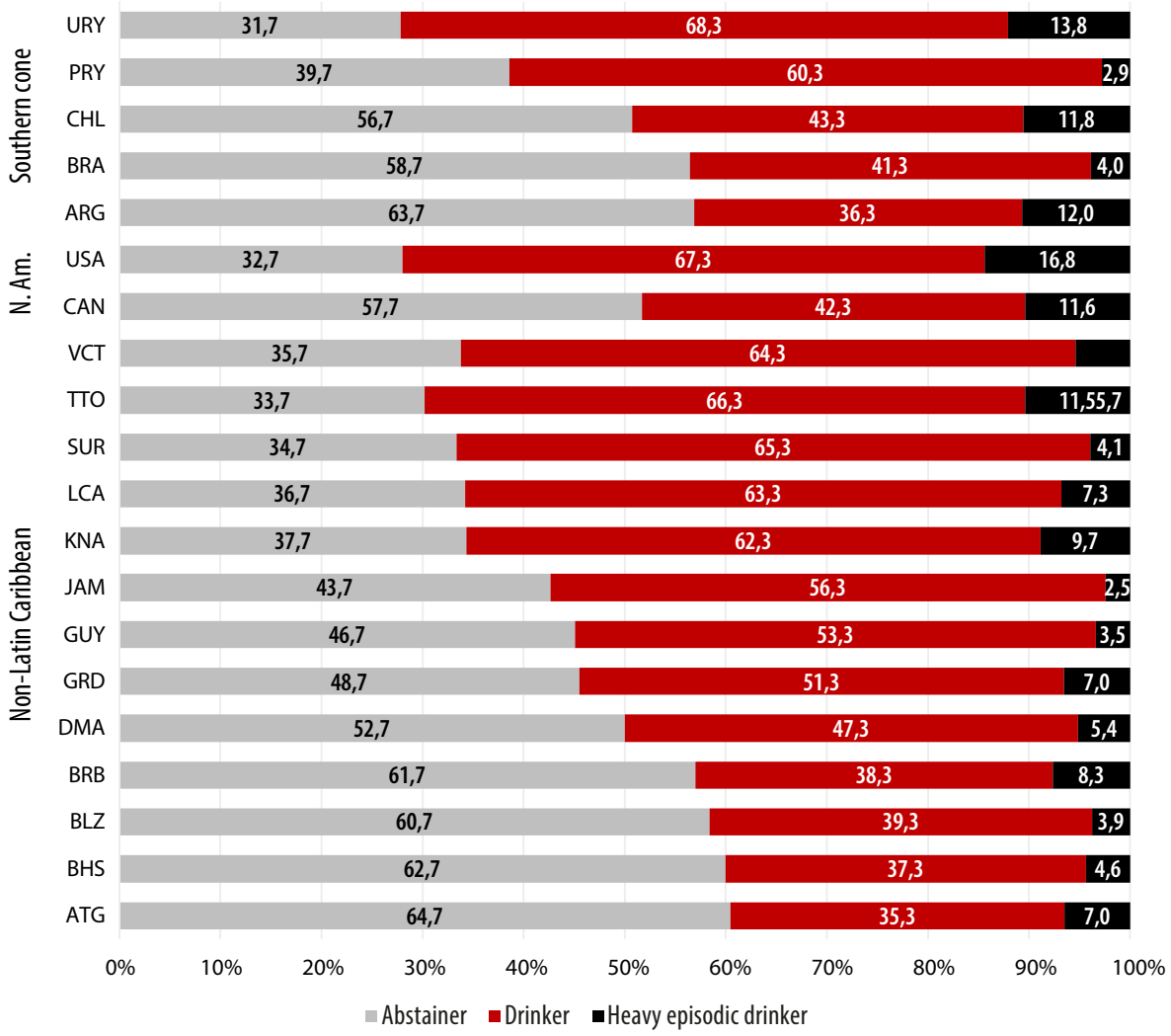
Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Heavy episodic drinking, Past 30 days, Patterns of Consumption. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Like males, the young often drink alcohol in risky ways. More specifically, youth tend to drink less frequently than adults, but when they drink, they do so with higher intensity. This means that much of the alcohol consumed by youth

is drunk during heavy drinking episodes. At a sub-regional level, the percent of youth who drank and drank heavily was highest in the Southern Cone (50.0% and 22.6%, respectively), North America (46.8% and 21.5%) and the non-Latin Caribbean (34.0% and 19.3%) (data not shown). The Central American Isthmus had the lowest prevalence of youth consumption (22.6%) and HED (10.5%).

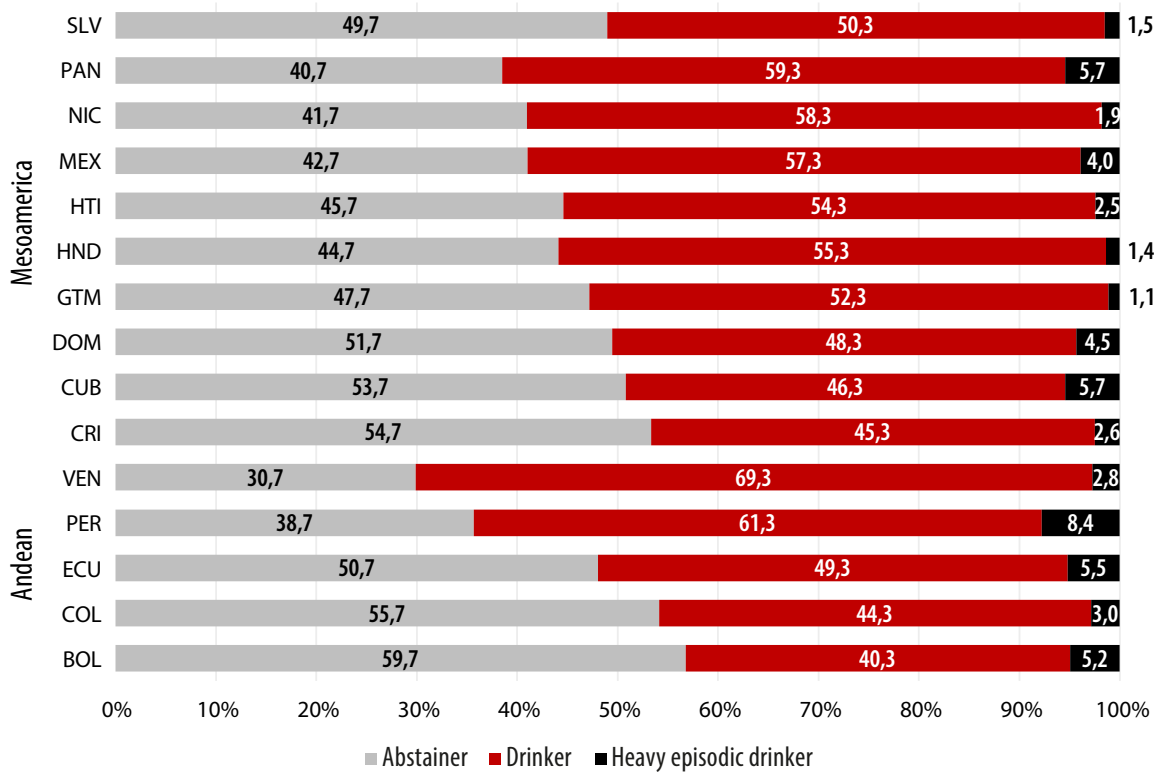
Figure 12 shows the percentage of youth who drank heavily in 2016 by country. Countries that had high proportions of adults who drank heavily also tended to have high proportions of heavy-drinking youth. The prevalence of HED among youth drinkers was highest in five high-income countries: the United States of America (28.0%), Trinidad and Tobago (26.3%), Uruguay (24.1%), Saint Kitts and Nevis (24.1%), and Canada (22.4%).

Figure 12. Prevalence (%) of past 12-month current alcohol use and prevalence of heavy episodic drinking (HED) among youth (15-19 years) in the Americas, by country and sub-region 2016



N. Am. = North America.

Figure 12. Prevalence (%) of past 12-month current alcohol use and prevalence of heavy episodic drinking (HED) among youth (15-19 years) in the Americas, by country and sub-region 2016 (Cont.)

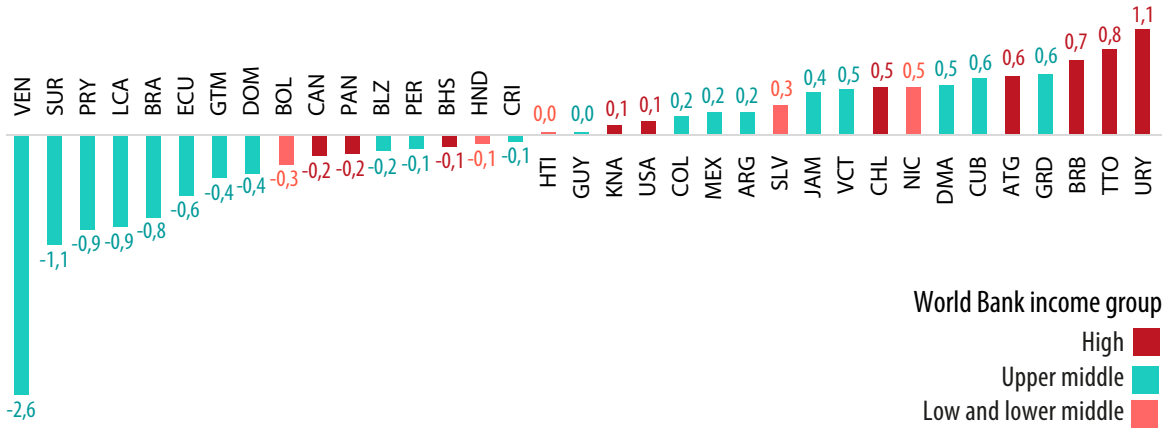


Sources: *World Health Organization. (2018). Global Information System on Alcohol and Health. Current drinkers (%), Youth and Alcohol. World Health Organization. (2018). Global Information System on Alcohol and Health. 15-19 years old heavy episodic drinking (population), past 30 days, Youth and Alcohol. Both sources available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Alcohol consumption trends

While the quality of the data is important for all the alcohol indicators, this feature is heightened when investigating trends in alcohol consumption over time. This is because differences between multiple points of time could reflect real changes in alcohol use or they could be spurious if the data are not collected consistently. For this reason, recorded adult APC is the most reliable indicator for understanding trends over time; it does not rely on survey data or otherwise subjective estimation procedures. Figure 13 shows the change in adult APC since 2010. With the exception of Venezuela, Suriname, and Uruguay, all of the changes over time were less than 1.0%, which is unlikely to result in public health gains. These decreases tended to be largest in upper middle-income countries, which is shown by the cluster of teal bars to the left of Figure 13. On average between 2010 and 2016, there was a 0.23-liter decrease in adult APC consumption among upper-middle-income countries, low- and lower-middle-income countries minimally change their level of consumption, and high-income countries increased their APC consumption by 0.40 liters of pure alcohol per adult.

Figure 13. Changes in recorded adult (15+ years; in liters of pure alcohol) alcohol per capita consumption (APC) from 2010 to 2016 in the Americas, by country and World Bank income group



High-income countries defined as countries with a gross national income per capita greater than $12,376 (USD) (30).
Upper-middle-income countries defined a countries with a gross national income per capita between $3,996 and $12,375 (USD) (30).
Low- and lower-middle-income countries defined as countries with a gross national income per capita less than or equal to $3,995 (USD) (30).
Sources: *Pan American Health Organization/World Health Organization, Evidence and Intelligence for Action in Health Department/Health Analysis, Metrics and Evidence Unit. PLISA Database. Core Indicators 2019: Health Trends in the Americas. Washington, D.C., United States of America, 2019.*

Since 2000, the percentage of people who currently drink alcohol in the Americas has fallen by 14.8%, from 63.5% to 54.1%. This reduction appears to be driven by current drinkers who stop drinking; the percentage of former drinkers increased (from 21.0-29.0%) but the percentage of lifetime abstainers held fairly stable (from 15.4-16.9%) over these six years. After accounting for growth in the population size, there was little net change in the number of drinkers over the last 16 years (15.6-15.7 million). Although a slightly smaller proportion of people are drinking, those who drink are also drinking more during their drinking episodes. Consequently, these counteracting trends resulted in the adult APC and prevalence of HED staying roughly constant. The stability of these numbers obscures the fact that drinkers are consuming larger volumes of alcohol on average, which poses greater risk for alcohol-attributable disease and injury over time. Figure 14 explains why drinkers in the Americas today likely face increased risk when compared to drinkers in previous years, even though the percent of adults who drink alcohol is declining and the adult APC is constant.

Figure 14. Factors affecting trends in alcohol use and related harms in the Americas

	Population size	Prevalence of alcohol use	Frequency & intensity of alcohol use
	The total number of adults who live in the Americas	The percent of adults who drink alcohol	The total amount of alcohol drinkers drink
Trend:	↗	↘	↗
	Increasing Since 2000, the population grew 18.7% from 24.4m to 28.9m	**Decreasing** Since 2000, the percent of adults who drink decreased by 14.8% from 63.5% to 54.1%	**Increasing** Since 2000, the amount of alcohol consumed increased by 24.0% from 46.4b litres to 57.4b litres
What it means:	The countervailing trends in population growth and alcohol use means the number of drinkers held relatively constant around 15.6 million		Drinkers are at higher risk for acute and chronic harms from alcohol use

As discussed in the Introduction, the WHO NCD Monitoring Framework established an ambitious goal to reduce adult APC by 10% by 2025. Unfortunately, projections for the Americas show that the total adult APC will ***increase*** by 0.4 L (from 8.0 liters to 8.4 liters) in the next six years (Figure 15). While upper-middle- and lower-middle income countries are expected to drive these increases in the rest of the world, the increase in the Americas will largely be driven by increases in consumption among high-income countries, which will experience an average increase around 1.2 liters by 2025. Within the Americas, low- and lower-middle-income countries (0.4 liters) and upper-middle-income countries (0.3 liters) will experience smaller increases. These projections suggest that countries in the Americas are not on track to meet the goal for a 10% reduction.

Figure 15. **Projected trends for adult alcohol per capita consumption from 2016 through 2030 in the Americas by sub-region and country**

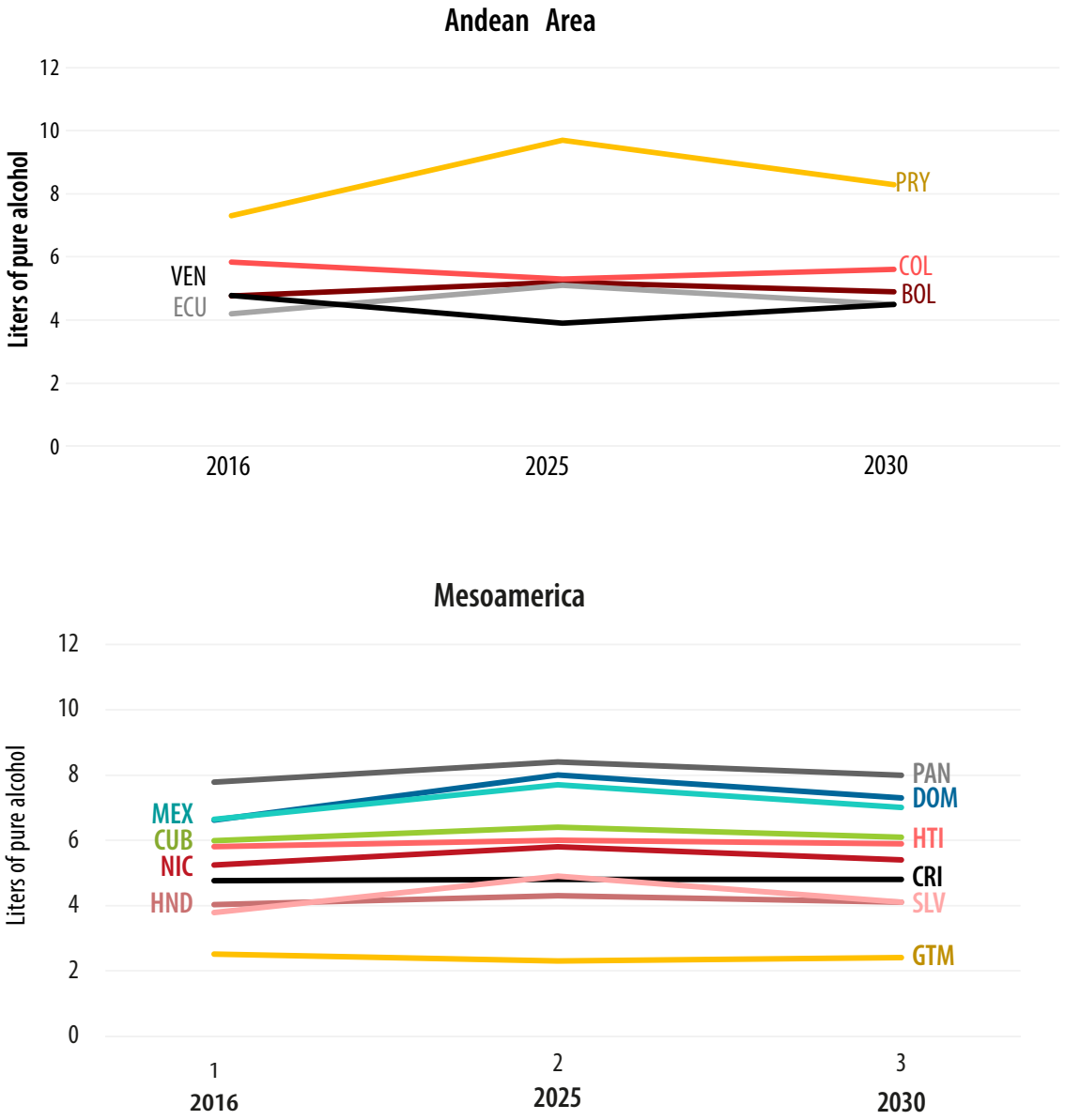
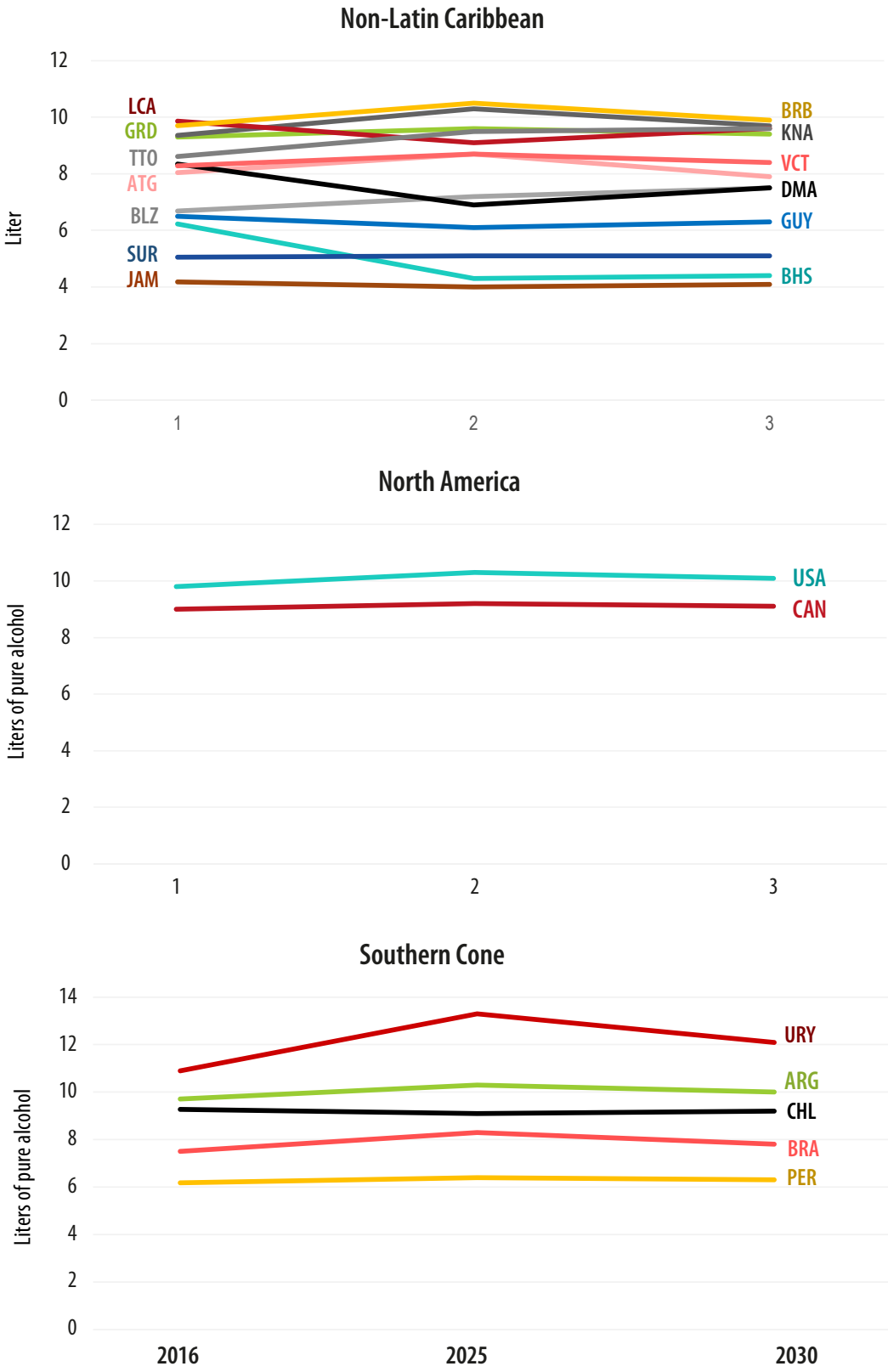


Figure 15. Projected trends for adult alcohol per capita consumption from 2016 through 2030 in the Americas by sub-region and country (cont.)



Source: *Manthey, J., Shield, K. D., Rylett, M., Hasan, O. S., Probst, C., & Rehm, J. (2019). Global alcohol exposure between 1990 and 2017 and forecasts until 2030: a modelling study. The Lancet, 393(10190), 2493-2502*

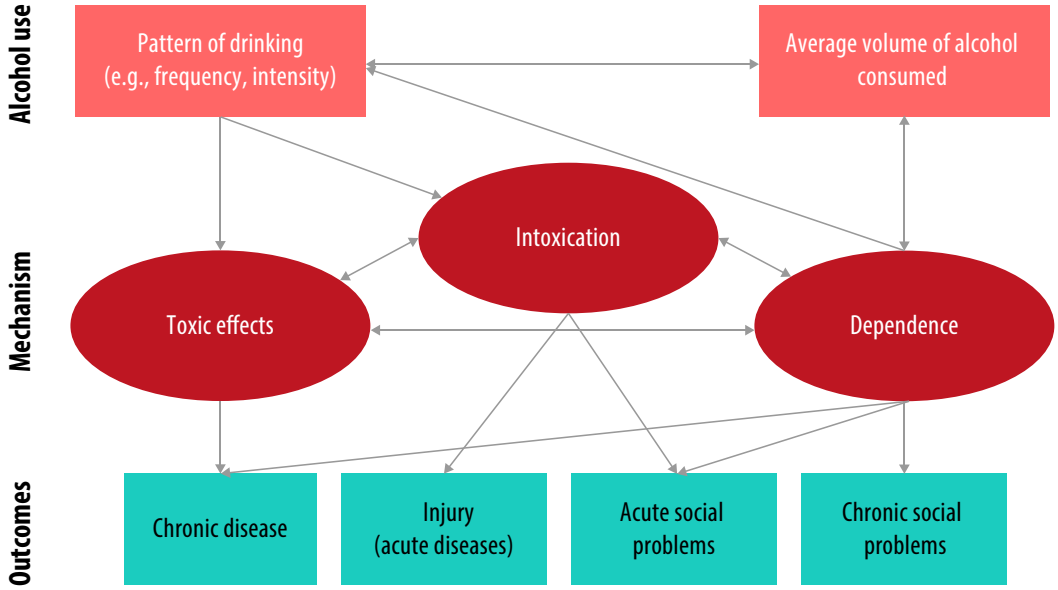
ALCOHOL-RELATED HARMS

Overview and background

There are massive health effects from alcohol use that manifest through its contribution to death, disability, and cost. As shown in Figure 16, there are three main pathways through which alcohol can create these harmful effects: **toxic effects**, **intoxication**, and **dependence** *(31)*. Alcohol is a toxin and a cancer-causing agent, and it places drinkers at risk for both communicable (e.g., tuberculosis, HIV/AIDS) and noncommunicable diseases (e.g., liver cirrhosis, breast cancer, and cardiovascular disease) as well as violence, injury and mental health issues. Many diseases like cancer *(32)*, coronary artery disease *(33)*, and gallstone disease *(34)* as well as injuries like road traffic crashes *(35)* and suicide attempts *(36)* have a dose-response relationship with alcohol. This means that the risk for these chronic harms—and often the severity—increases when drinkers consume more alcohol. In terms of acute harms, the consequences of intoxication are often broad, spanning impaired attention, deficits in cognition, loss of dexterity in fine motor skills (increasing the risk of falls, drownings and injury), heightened aggression, impaired impulse control and potential for alcohol poisoning.

This conceptual framework proposes that volume and pattern of drinking shape the risk for harm by determining the level of intoxication reached as well as the dose of toxins delivered. Specifically, drinkers who sustain high volumes of alcohol use over time are at elevated risk for dependence in addition to chronic disease and injuries. This is because alcohol's addictive properties can cause physical and psychological dependence over time. In the bottom row of the conceptual framework, it proposes that dependence shapes risk for social problems, intoxication increases risk for injuries and acute social problems, and the toxic effects of alcohol promote the development of chronic diseases.

Figure 16. Conceptual framework for how alcohol causes public health harms



Source: *Figure 1 in Babor, T, Caetano, R, Casswell, S et al. (2010) Alcohol: No ordinary commodity. Research and Public Policy, Vol. 2nd. New York, NY: Oxford University Press.*

Through these pathways, the drinking patterns described in the previous section contribute to drinkers' risk for over 200 ICD-10 disease and injury codes, about 40 of them being caused by alcohol alone. There is a common misperception that only heavy or "irresponsible" drinkers suffer harms from alcohol use. This long-standing belief is in clear contradiction with a large and compelling evidence base. Most recently, the Global Burden of Disease Study pooled 694 data points to establish that there is no safe level of alcohol consumption (4). This means that **all drinkers face some risk of experiencing alcohol-related harms**, and the level of the risk for many of those harms depends on how much alcohol they drink.

Combining information gleaned from longitudinal and transversal (which include surveys and medical data) over time has permitted researchers to establish **alcohol-attributable fractions (AAFs)**, which quantify the death and/or disability that would not occur if the victim had not consumed alcohol. AAFs make it possible to establish the burden of alcohol and compare across demographic subgroups, geographic locations, types of health risks, and over time. However, AAFs make assumptions that may be problematic in some instances; for example, assuming a hypothetical scenario where no one drinks alcohol may be an unrealistic comparison. In addition, AAFs derived from published literature will also be subject to the same limitations of the studies on which they are based (e.g., measurement error, residual confounding).

Box 3. Key terms related to alcohol's burden of disease

Alcohol-attributable death: deaths that are caused by alcohol.

Alcohol-attributable fraction: the percentage of an outcome (e.g., injuries, cancer deaths) that are caused by alcohol use.

Disability-adjusted life year (DALY): a measure of overall diseases burden combining two types of years: 1) the years of life lost (YLL) when a person dies prematurely, and 2) the years lived with disability (YLD) due to a person's health condition.

Years of life lost (YLL): the total number of years of potential life that are lost when a person dies prematurely.

Years lived with disability (YLD): the total number of years lived with any short- or long-term loss of health status that results from a person's disability/health condition. YLD are calculated by multiplying the number of years lived with a condition by disability weights, which estimate the level of disability from a range of conditions.

Along these lines, it is important to remember that the ways that alcohol's burdens can be estimated depend on the type(s) and quality of the data that are available. Population surveys are a common source for estimates of alcohol-related harms, but they are subject to under-reporting that can result from faulty memories, difficulties in accurately estimating the frequency of common behaviors, and the desire to report what respondents perceive as socially desirable answers. Administrative data like registries and electronic health records are often more reliable than self-reported data, but they have their own limitations, which include only reporting those individuals who had access to a health care system. Routine health data often lack information about alcohol exposures and do not capture high-risk populations who cannot afford or do not receive medical care for other reasons, for instance individuals affected by homelessness or incarceration and thus individuals, who are more often affected by AUDs as compared to the general population. These administrative data are also not designed for scientific research, so they can require additional time and labor to clean and format the data consistently.

The goal of this section is to summarize alcohol's burden on disability, death, and cost in the Americas. To do this, it will use information gleaned from the previous section to show how the levels and patterns of alcohol consumption in the Americas are related to specific types of harms. In addition, this section explores how alcohol's harms concentrate demographically and geographically, with a focus on potentially vulnerable groups like the young and the poor.

Sex and gender

The section on alcohol consumption established that men drink the majority of the alcohol, and this section shows that they also suffer most of the alcohol-related harms. If the gender gap closes and women begin to drink more like men, it is likely that women will also start to get sick and injured at higher rates like men, too. However, there is reason to believe that women who drink like men may experience *more* harms, because of biological differences between the sexes that cause women to experience greater risk at lower levels of consumption. Generally, women's bodies are considerably

different in terms of body weight and composition than men, therefore blood alcohol concentration levels can be higher for a longer period of time. The differences between men and women's biological risk from alcohol use has to do with how the bodies process alcohol. Our body uses fat to retain alcohol, water to clear it away, and the liver produces enzymes to break down the alcohol. Women's bodies have more fat and less water, and their livers produce less alcohol dehydrogenase (a metabolism that is used to break down alcohol). Consequently, women have a higher risk of liver cirrhosis, heart disease, and nerve damage than men do even when they drink the same amount of alcohol *(37, 38)*. In addition, alcohol also poses some harms that are unique to women, such as breast cancer, unintended pregnancy, and risk of giving birth to a child with fetal alcohol spectrum disorders or low birth weight. Moreover, there are behavioral and social risks related to alcohol use that affect women specifically and make them more vulnerable to alcohol-related harms.

While men experience more harms to drinkers, women are more likely to suffer **harms from others' drinking,** which include harms experienced by persons who are *around* the drinker *(22, 39-42)*. Men and women report different types of harms from others' drinking. Men are more likely to report physical harms like interpersonal violence and property damage while women are more likely to report family, marital and intimate partner violence (including sexual violence) and other harms. Women are more likely to report to be feeling afraid of someone who had been drinking, and unwanted sexual attention, harassment and assault *(43)*. One reason for these gendered differences in the harms from others' drinking is that men and women have different types of relationships with heavy drinkers *(22, 42)*. Women tend to have closer relationships (e.g., spouse, partner) with heavy drinkers than men *(42, 44)*. In addition, these differences could result from traditional gender roles that have existed historically and persist even today, especially in relation to ideas of what is acceptable behavior for men and women. Traditionally, alcohol use has often been viewed as a sign of power and privilege, and, consequently, it has and is (and may still be) more culturally acceptable for men to drink alcohol and to drink to the point of intoxication. In addition, men are more likely to drink in public places where there are more people around who could be harmed by their behavior under the influence of alcohol. Women, on the other hand, tend to drink in private settings like their home. It is possible that the ways that drinkers harm others in public and private settings is different, and this may be a root cause for the genders reporting different levels and types of harms. This is especially true for violence; women are more likely to experience violence at the hands of someone they know while men are more likely to encounter it with strangers, and often in public.

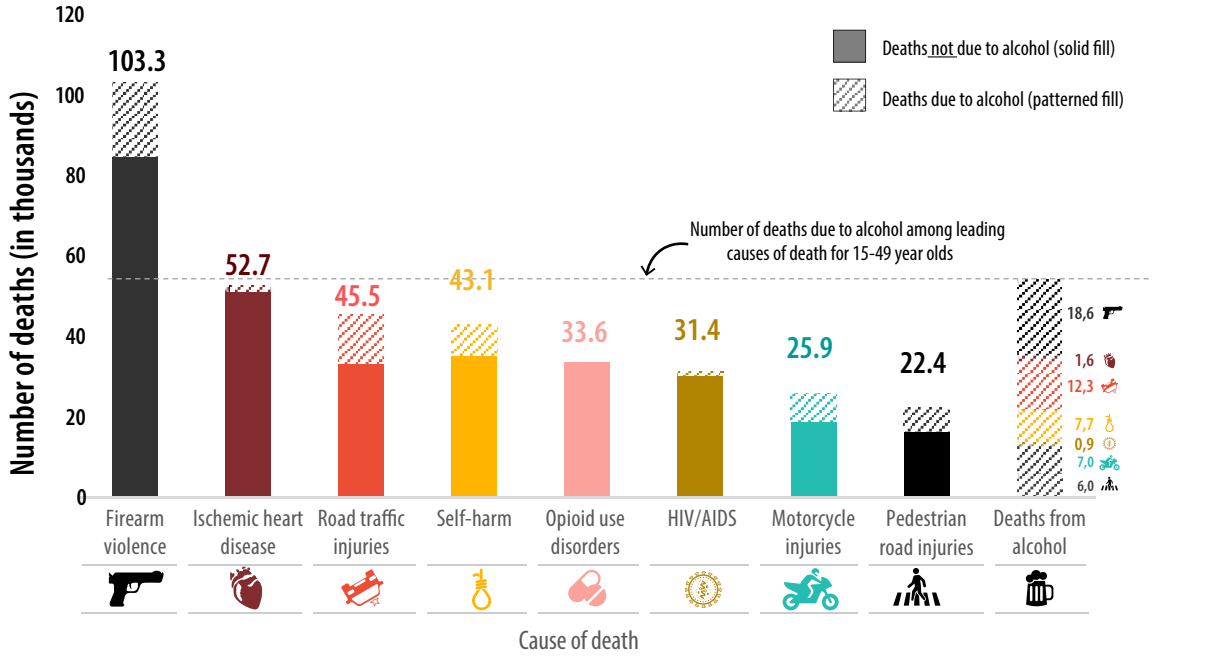
Age

Adolescence and young adulthood are times marked by rapid biological and social development as well as increased vulnerability to alcohol's effects *(45)*. As youth acquire new experiences and interact with others, their brains are undergoing a significant restructuring process, and alcohol use can impair it *(46)*. For example, longitudinal research found that youth who drank heavily had smaller volumes in areas of the brain that are critical for inhibiting behavior, impulse control, attention, and self-regulation when compared to youth who abstain from alcohol *(32, 47)*. Alcohol use can also prevent adolescents from reaching life goals by impairing academic performance *(48)*.

Alcohol use was the leading risk factor for deaths and disability-adjusted life years (DALYs) among young adults aged 15-49 years in the Americas in 2016 *(49)*. The column on the far right sums the alcohol-attributable deaths for each of the eight leading causes of death. Alcohol was responsible for 54,188 deaths among young adults for just these eight causes in 2016 alone. Figure 17 shows alcohol's contribution to the eight leading causes of death among 15-49-year-olds in the Americas. The only leading cause of death that alcohol does not contribute to is opioid use disorders, and the number of alcohol-attributable deaths (54.2 thousand) is more than all of the other leading causes of death except firearm violence (103.3 thousand). This is depicted in Figure 17 by the bars for seven of the

leading causes of death falling below the dashed line, which indicates the total number of alcohol-attributable deaths for these eight causes among persons aged 15-49 years.

Figure 17. Alcohol use as a risk factor for seven of the eight leading causes of death among 15-49-year-olds in the Americas in 2016



Source: *Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018. Available from http://ghdx.healthdata.org/gbd-results-tool.*

Income and Inequality

There are also associations between income and alcohol-related harms at the individual and societal levels. This association is particularly strong at the individual level, and the finding that low-income persons tend to experience more alcohol-related harms than more affluent drinkers even though they drink less alcohol *(50, 51)* is called "**the alcohol harms paradox**" *(51, 52)*. Few studies have empirically tested reasons why the harms paradox exists, but recent evidence from Europe suggests that other health risks (e.g., tobacco use, poor diet, unhealthy environments) likely play a larger role than drinking patterns *(53)*.

There is also a well-established association between alcohol-related harms and income at the population level such that places with higher incomes have slightly lower rates of alcohol-attributable harms likely due to the benefits that often accompany higher national incomes. Examples of perks that could moderate this association include universal health care and better health statuses that are free from other comorbidities.

Indigenous peoples

One key social group that is disproportionally vulnerable to alcohol-related harms is Indigenous populations, who comprise a substantial 13% of the population in many countries in the Americas such as Bolivia, Brazil, Canada, Chile, Colombia, Cuba, Ecuador, Guatemala, Mexico, Nicaragua, Panama, Paraguay, Peru, and the United States of America *(54)*. It was estimated in 2010 that there were at least 44.8 million indigenous persons in the Region *(55)*.

There are many characteristics of indigenous populations that complicate monitoring their alcohol use and

associated harms. As of 2015, many Caribbean countries had no information about the size or composition of indigenous populations within their borders *(56)*. Other countries in the region only surveil indigenous populations that have lived there historically, and therefore do not monitor indigenous populations that immigrated more recently *(56)*. Despite these gaps in surveillance and knowledge, the limited data that do exist suggest that indigenous populations have elevated risk of alcohol-related harms. Indigenous populations often combine multiple risk factors for alcohol consumption. For example, although indigenous populations comprise 8% of the total population in Latin America and the Caribbean, they also comprise 14% of the poor and 17% of the extremely poor (i.e., persons who live on less than $2.50 US per day) *(56)*. Indigenous youth are especially vulnerable to the early introduction of alcohol and begin drinking at earlier ages than other groups *(57)*, which is a well-established risk factor for alcohol dependence later in life *(18)*. The early introduction of alcohol can result in decreased education achieved and lead to increased spending on alcohol which can contribute to decreased income, lack of food, and poverty *(58)*. Similarly, indigenous youth in North America who report feeling discrimination have higher risk of alcohol use disorders *(59)*. Frequent alcohol use is also a risk factor for indigenous males in Mexico to engage in intimate partner violence *(60)*, and alcohol increases the risk for suicide among indigenous populations across Latin America *(61)*.

A case study from Venezuela explores the historical and cultural context of alcohol consumption where traditionally, before the year 1945, alcohol of a very high percentage has been brewed as a part of the Indigenous traditions *(62)*. Alcohol was viewed as a sacred and essential offering to be consumed by all in their community—the men, women, children, and including pregnant women *(62)*. However, there is a profound impact of alcohol use on the health of pregnant women and children. The prevalence of alcohol consumption during pregnancy among the general population of the Americas region is 11.2% which can lead to negative outcomes for both the mother (e.g., maternal mortality) and newborns (e.g., high rates of stillbirth, premature birth and low birth weight which can result in lifelong conditions known as fetal alcohol spectrum disorders) *(63)*.

The impact of colonialism has left a visible scar within the Indigenous communities. The harsh reality of their daily lives that are a direct result of colonial influences is further compounded by multiple interconnected social cultural determinants of health. The lack of access to land, inadequate housing, and crowded living conditions have a profound impact on indigenous peoples as it can lead to increased emotional stress, trauma, and lack of personal space which can contribute to an increased reliance on alcohol *(58)*. Additionally, Indigenous communities are generally geographically displaced which impacts their access to nutritious food (and general food security) and health care services *(58)*.

The social cultural determinants of health demonstrate the profound impact of alcohol on this neglected population. The influence of Western civilization has led to a transformation of their lives; however, has also left them with a lack of tools and skills to fully adapt to this new change. Greater attention is required to reduce the burdens and achieve equitable and improved health outcomes for this population. More importantly, future action must take into account the perspective and traditional knowledge of Indigenous people, especially as it pertains to their health.

Morbidity

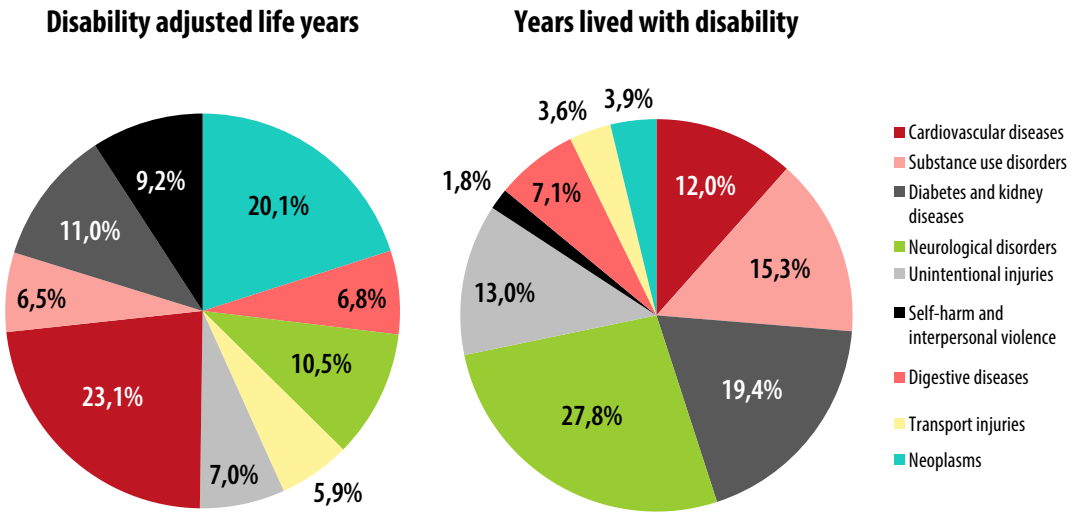
Alcohol is a leading risk factor for disease and injury, and most alcohol-related harms are not fatal. **Disability** arises from the physical or psychological consequences of alcohol use that prevent a person from enjoying the full level of health than they would have otherwise had. Often, there are two types of harms that are the strongly associated with the overall levels of alcohol-attributable disability in a location: those that strike early in life and conditions that are severe. This section first reviews four key causes of disability in the Americas: fetal alcohol spectrum disorders, alcohol use disorders, injuries, and cardiovascular diseases. It then describes and uses three indicators to quantify the burden of alcohol-attributable morbidity in the Americas in 2016.

Indicators of morbidity

Disability-adjusted life years

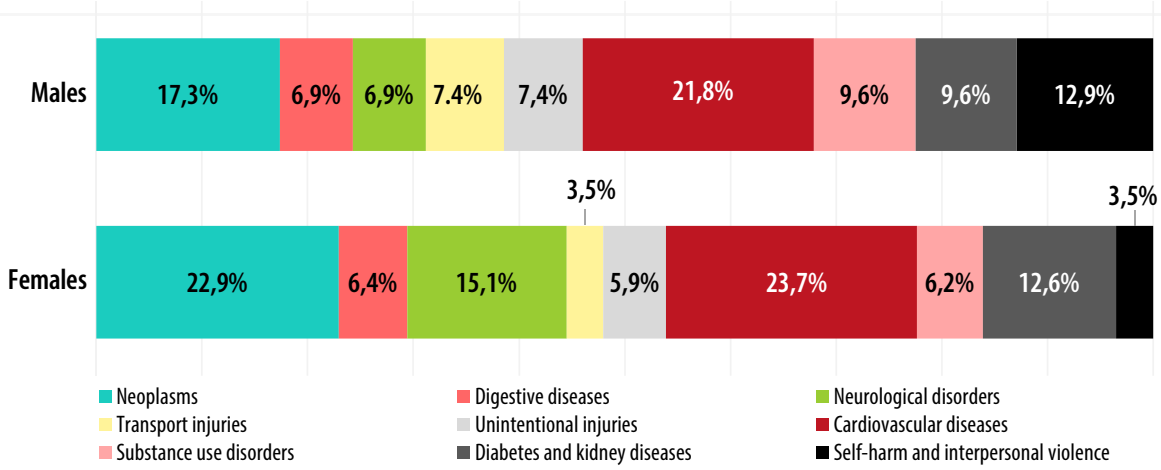
An average level of disability can be calculated using **disability-adjusted life years (DALYs)**, where each DALY represents one full year of healthy life lost. When DALYs are summed at the population level, they provide an estimate of the gap between the current and ideal health statuses. After considering alcohol's beneficial and detrimental health outcomes, alcohol caused a net 6.7% of all DALYs in the Americas in 2016 (see Figure 18 for summary of DALYs by cause). When compared to the other WHO Regions, the Americas had the second-highest percent of DALYs that were attributable to alcohol. Gender differences in alcohol-attributable DALYs followed similar patterns as the drinking patterns: men had a higher burden of alcohol-attributable DALYs (99.7 thousand DALYs among males vs. 69.2 thousand DALYs among females) because they drank more alcohol and in riskier ways. Among the DALYs experienced by males, cardiovascular diseases (21.8%), cancers (17.3%), and self-harm and interpersonal violence (12.9%) were the top contributors (Figure 19). Among the alcohol-attributable DALYs experienced by females, cardiovascular diseases (23.7%) and cancers (22.9%) also caused substantial portions. However, neurological disorders (15.1%) and diabetes and kidney diseases (12.6%) were responsible for a larger share of females' alcohol-attributable DALYs than they were among males' alcohol-attributable DALYs.

Figure 18. Percent of disability-adjusted life years (DALYs) and years lived with disability (YLD) attributable to alcohol in the Americas in 2016 by type of cause



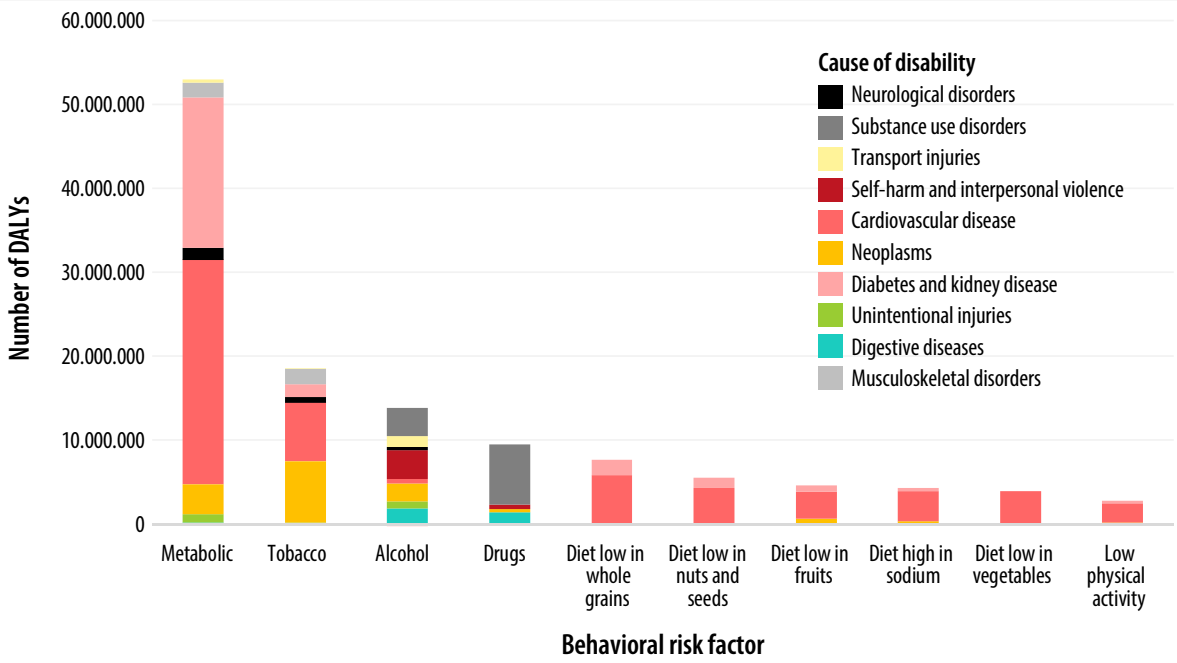
NOTE: *Years of life lost are discussed in the mortality section.*
Source: *Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018.*

Figure 19. Percent of disability-adjusted life years (DALYs) attributable to alcohol in the Americas in 2016 by type of cause and gender



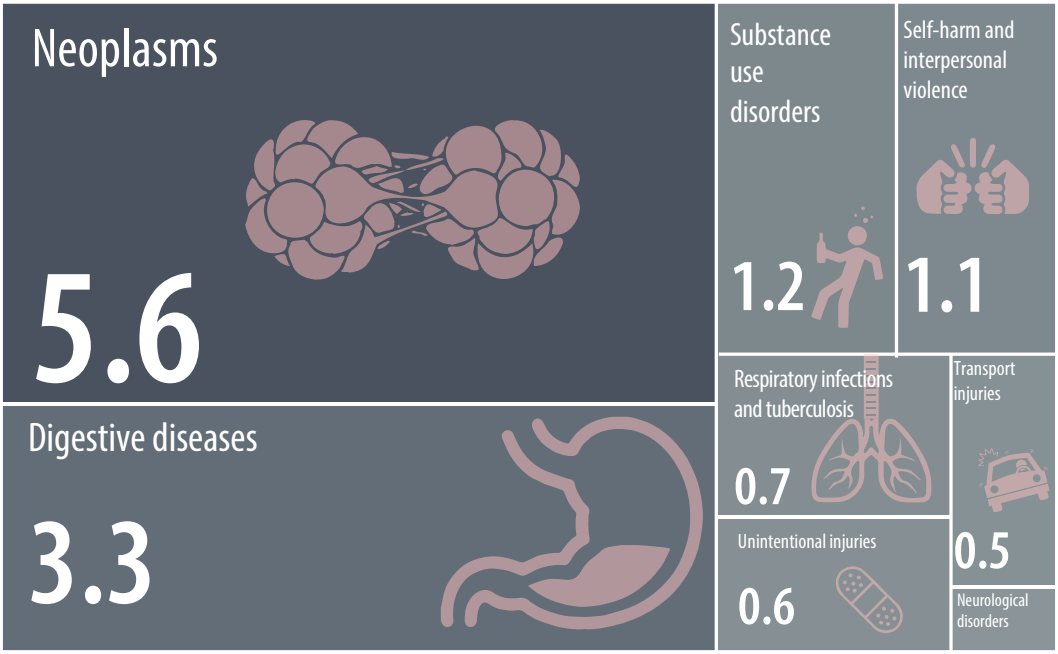
Source: *Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018.*

Figure 20. Disability-adjusted life years (DALYs) attributable to leading behavioral risk factors for noncommunicable diseases (NCDs) in the Americas, 2016

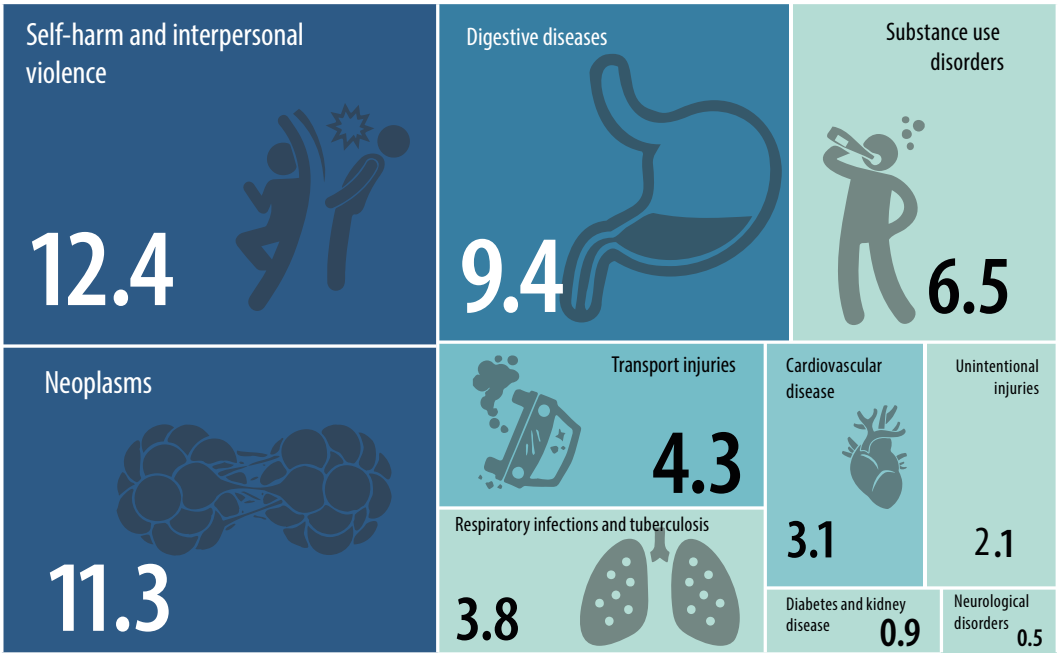


Source: *Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018.*

Figure 21. Rates of alcohol-attributable disease and injuries per 100,000 persons in the Americas by type of condition and gender, 2016



Males



Females

Source: *Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018.*

Years lived with disability

There are three primary contributors to **years lived with disability (YLD)** in the Americas. Alcohol use disorders accounted for the vast majority—3 out of every 5—YLD in 2016 (Figure 18). This is likely because AUDs are unusually common in the region, they develop in young adulthood, and they are relatively severe conditions. The two other primary causes of YLD are unintentional injuries and neurological disorders (which includes FAS and FASD). Other than these three causes, no other cause contributed more than 5% of the YLD in the Americas.

Causes of morbidity

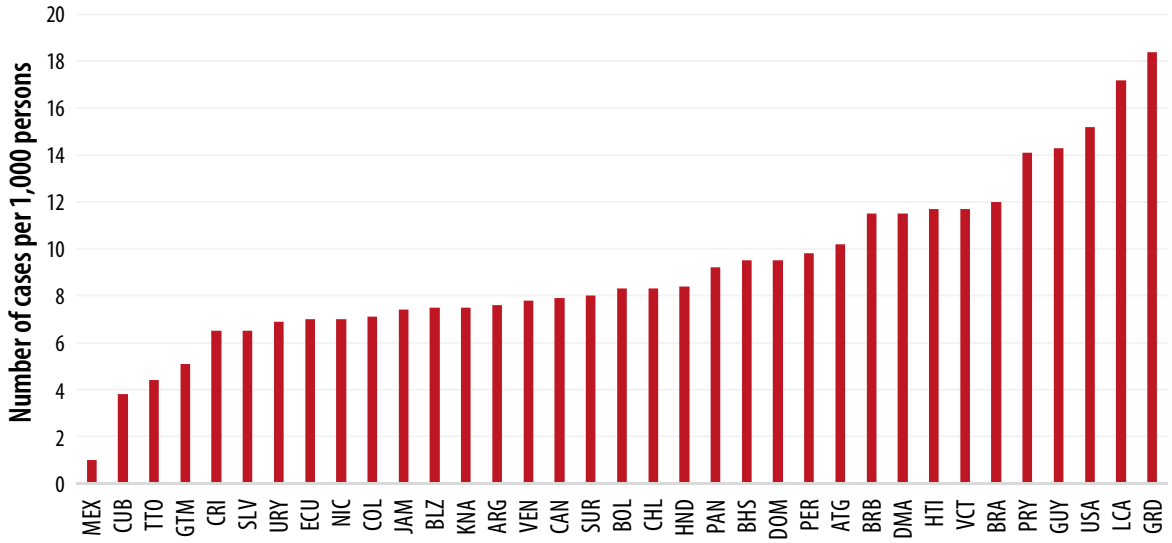
Fetal alcohol syndrome and fetal alcohol spectrum disorders

Alcohol is a **teratogen**, which is an agent that is able to cross the placenta and can cause malformations in developing embryos. This means that alcohol consumption among women of childbearing age poses unique risks, especially when considering that alcohol and drug use can also delay the recognition that the woman is pregnant *(64)*. Prenatal alcohol exposure, particularly during the first trimester has severe consequences, including stillbirth, spontaneous abortions, low birth weight, **fetal alcohol spectrum disorders (FASD)** *(65, 66)*. FASD is a general term that includes several specific conditions, one of which is **fetal alcohol syndrome (FAS)**. FAS is among the most severe consequences of prenatal alcohol exposure; it is a lifelong condition marked by damage to the central nervous system, congenital anomalies, growth impairments, and deficits in cognitive, behavioral, and emotional development. Globally, the Americas and Europe have the highest rates of FASD *(67)*.

A recent meta-analysis established the prevalence of prenatal alcohol exposure and FASD in North America. One in 10 (10.0%) pregnant women in Canada drank alcohol while 1 in 7 (14.8%) pregnant women drank alcohol in the United States *(67)*. The rates of prenatal alcohol exposure are much higher among indigenous populations. For example, roughly 1 in 3 (36.5%) Indigenous women drank during pregnancy in Canada *(67)*. Similarly, 2 in 5 (42.9%) Indigenous women in the United States drank during their pregnancy *(67)*. In both the United States and Canada, roughly 3.0% of women from the general public engaged in HED while they were pregnant *(67)*. However, among Northern populations, 22.1% drank heavily during their pregnancy in Canada and 14.6% did so in the United States *(67)*. Researchers have also used statistical modeling to estimate the percent of the population who drank during pregnancy. In these models, approximately 11.2% of women drank during pregnancy across the Americas *(67)*.

Globally, one out of every 13 children born to mothers who consumed alcohol during their pregnancy will have FASD *(67)*. Figure 22 shows the number of cases of FASD per 1,000 live births in the Americas in 2012. On average, about 9 of every 1,000 children born in the Americas in 2012 had FASD *(68)*. Grenada (18.4), St. Lucia (17.2) and the United States (15.2) had the highest rates of FASD, while Trinidad and Tobago (4.4), Cuba (3.8), and Mexico (1.0) had the lowest *(68)*. In all countries except Mexico, the prevalence of FASD was higher than 1% *(68)*. As Lange et al. (2017) point out, this means that FASD is more common in these countries than Down syndrome, spina bifida, and trisomy are in the United States of America.

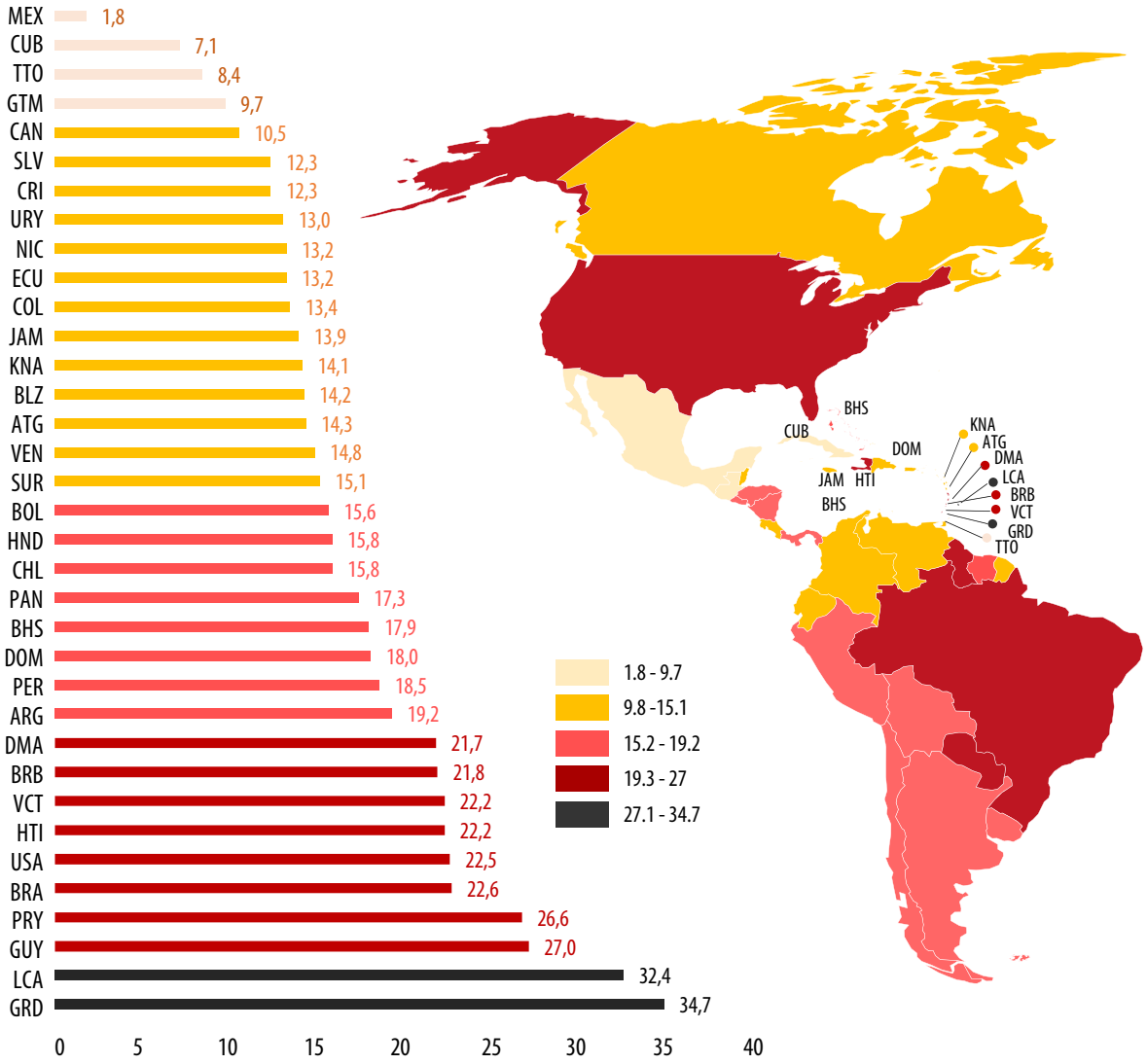
Figure 22. Prevalence (#) of fetal alcohol spectrum disorder (FASD) cases per 1,000 persons in the Americas by country 2012



Source: *Lange, S., Probst, C., Gmel, G., Rehm, J., Burd, L., & Popova, S. (2017). Global prevalence of fetal alcohol spectrum disorder among children and youth: a systematic review and meta-analysis. JAMA Pediatrics, 171(10), 948-956.*

Figure 23 shows the prevalence of FAS in the Americas in 2012. On average, there were 16.6 cases of FAS per 10,000 live births in the Americas in 2012 *(67)*. Within the Americas, FAS was most prevalent in Grenada (34.7 cases per 10,000 live births) and St. Lucia (32.4 cases per 10,000 live births). There are atypically high rates of FAS in the Non-Latin Caribbean (20.6 out of 10,000 persons), Andean Area (18.4 out of 10,000 persons), and the Southern Cone (16.6 out of 10,000 persons) *(67)*. All of these sub-regional rates are above the global average of 14.6 cases of FAS per 10,000 persons *(67)*.

Figure 23. Prevalence (#) of fetal alcohol syndrome (FAS) cases per 10,000 persons in the Americas by country 2012



NOTE: *Colors determined based on natural jenks.*
Source: *Lange, Shannon et al. "Actual and predicted prevalence of alcohol consumption during pregnancy in Latin America and the Caribbean: systematic literature review and meta-analysis." Pan American Journal of Public Health. 41, e89, 8 Jun. 2017, doi:10.26633/RPSP.2017.89*

Alcohol use disorders (AUD)

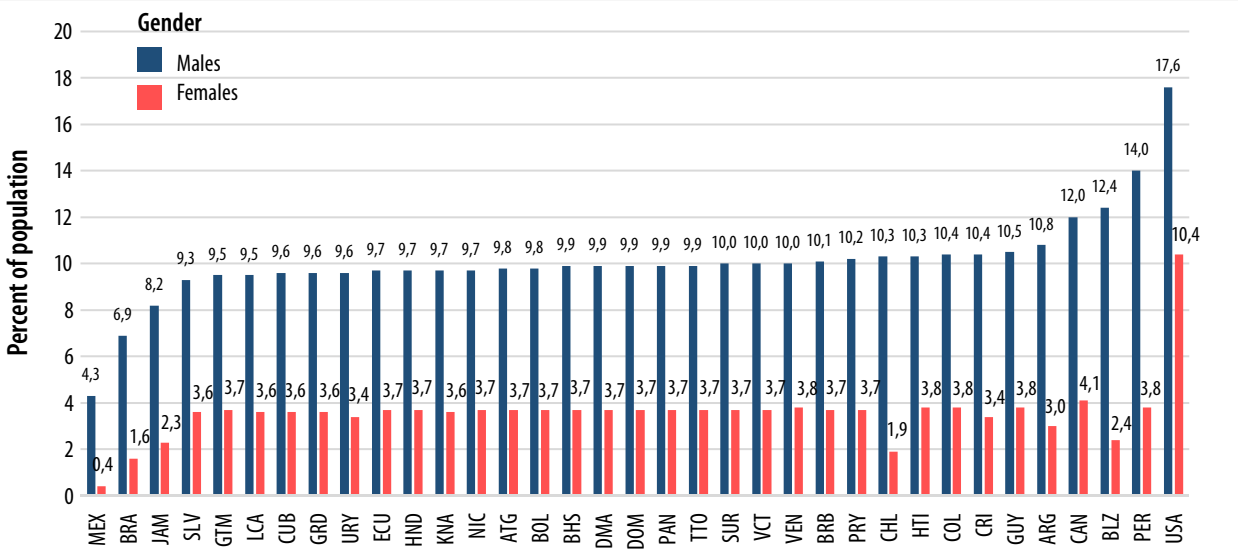
Alcohol remains the only legal psychoactive and dependence-producing substance, and 15.4% of persons who try alcohol become dependent on it *(69)*. **Alcohol use disorders (AUDs)** are chronic conditions marked by an impaired ability to limit the amount of alcohol consumed. AUDs exist along a continuum that ranges from mild to severe. The severity of AUDs (defined as the number of symptoms of alcohol dependence) increases in a roughly linear manner as the APC increases *(70)* even in countries with a more intermittent heavy drinking pattern, where alcohol is consumed irregularly but heavily.

Disability from AUDs includes people who are dependent on alcohol (the severe end of the AUD spectrum) as well as drinkers who experience physical, mental, or social harms from their alcohol use (the mild end of the AUD spectrum). AUDs are associated with high risk for other conditions, but this risk isn't the same for everyone. The death rates for women with AUDs are roughly 50-100% higher than men's death rates from suicides, alcohol-related injuries, heart disease, and liver disease *(38)*. While interventions can be effective for AUDs, they have some of the lowest treatment rates of all mental health disorders *(71)*.

The rate of AUDs among males was roughly twice the rate for females in the Americas in 2016; about 1 in every 9 men (11.5%) and 1 in every 20 women (5.1%) had an AUD (Figure 24). Similarly, roughly one out of every 17 men were dependent on alcohol (5.8%), but less than half that—only 1 out of every 40 females (2.5%)—met criteria for alcohol dependence. Even though fewer women meet criteria for AUDs, women who consume high levels of alcohol over time tend to have higher risk for developing AUDs than men who drink similar volumes. Through a phenomenon called "telescoping," women tend to start drinking at older ages but progress to problematic stages of alcohol use more quickly than men with AUDs *(72)*.

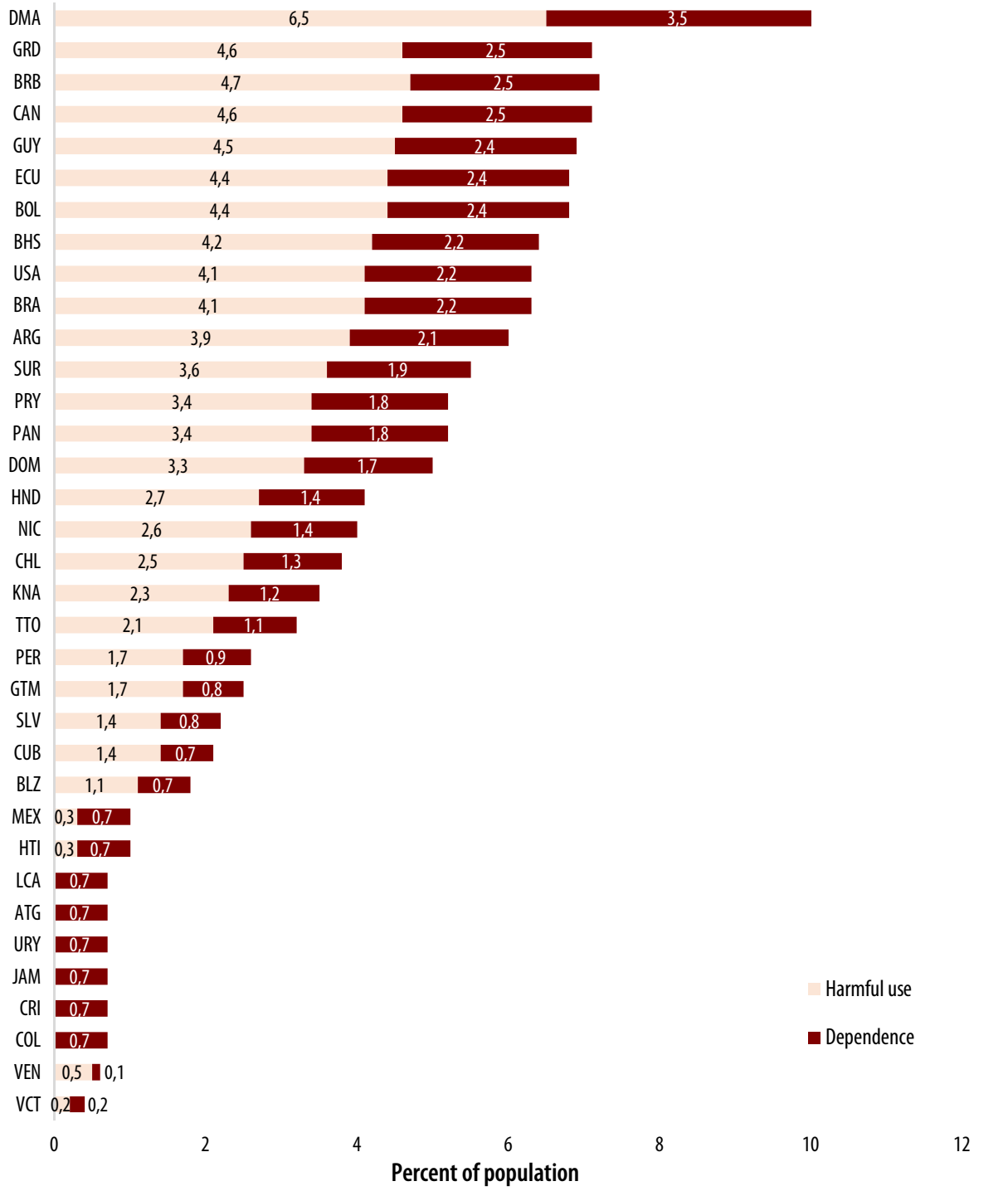
In 2016, North America had the second highest (8.1%) and Latin America and the Caribbean had the third highest (6.7%) percentages of the population that met criteria for an AUD (data not shown). Only Europe (8.3%) had a higher percent of the population with an AUD. Within the Americas, nearly 1 in every 15 adults (6.7%) in the Americas met criteria for an AUD in 2016, which is 26.4% higher than the world average (5.3%). Countries in the Americas where AUDs were more common tended to be located in South America (Figure 25). For example, Peru (8.9%), Guyana (7.2%), Colombia (7.0%), and Paraguay (7.0%) had some of the highest percentages of adults with an AUD. In addition to this geographic patterning, the prevalence of AUDs rose with income. Countries with high percentages of people meeting criteria for an AUD tended to have upper-middle (e.g., Belize, Peru) or high incomes (e.g., Canada, United States).

Figure 24. Prevalence (%) of alcohol use disorders (AUDs) in the Americas, by country and gender 2016



Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Alcohol use disorders (15+), 12 month prevalence (%), Harms and Consequences, Morbidity. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Figure 25. Prevalence (%) of alcohol use disorders (AUDs) in the Americas, by country 2016



Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Alcohol use disorders (15+), 12 month prevalence (%), Harms and Consequences, Morbidity. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

On average, 4.1% of people in the Americas met criteria for alcohol dependence, which is the highest percentage in the world; the global average was 2.6%. Within the Americas, the Dominica is an outlier with 3.5% of the population living with alcohol dependence in the last year. In addition, countries within the Non-Latin Caribbean (i.e., Grenada, Bahamas, and Guyana), North America (i.e., Canada and the United States), the Southern Cone (e.g., Argentina and Brazil), and the Andean Area (i.e., Bolivia and Ecuador) also had high prevalence rates of alcohol dependence.

Injuries

Injuries are a leading cause of death among the young, and alcohol is a leading cause of injury. Because alcohol-involved injuries are associated with youth, they can bear a particularly high toll if they result in permanent disability or death. Alcohol use can increase the chances of intentional (e.g., interpersonal violence, suicide) or unintentional injuries (e.g., falls, drownings, burns, poisoning, including accidental alcohol poisoning). When connecting drinking patterns to injuries, it is the intensity of alcohol use that shapes the risk for injuries, because it determines the level of intoxication. As intoxication increases, alcohol impairs impulse control, psychomotor abilities, and decision-making processes *(73)*. This results in an exponential dose-response association between alcohol and injury risk *(74, 75)*. In addition to increasing the likelihood of being injured, alcohol can also lead to more severe injuries *(74, 76)*. For example, a recent meta-analysis found that low levels of alcohol use (e.g., 1-3 standard alcoholic drinks for women and 1-4 standard alcoholic drinks for men) are associated with approximately 2.7 times the odds of a suicide attempt, but this increased to 37.2 times the odds with high levels of alcohol use (e.g., 4+ standard alcoholic drinks for women and 5+ standard alcoholic drinks for men) *(77)*. In areas like the Americas where fewer drinkers are increasing the amount that they drink on drinking occasions, the burden of alcohol-involved injuries is likely to increase.

Interpersonal violence, including intimate partner violence and violence against children, is one type of injury that is particularly prevalent within the Americas. While alcohol is neither necessary nor sufficient to cause violence, it is a prominent risk factor and the risk differs by gender. For example, alcohol was one of the most commonly reported contributing factor that women who experienced intimate partner violence reported on surveys in the region *(78, 79)*. In addition, a meta-analysis found that alcohol use/misuse was associated with a moderate to strong association with male-to-female interpersonal violence and a small association with female-to-male interpersonal violence *(80)*.

Cardiovascular disease

Across the world, cardiovascular diseases are the leading cause of death. The association between alcohol and cardiovascular disease has notoriously been the subject of great controversy. The so-called "French paradox"—the belief that moderate alcohol use, particularly red wine, reduces the chance of developing heart disease—remains a common talking point to this day. However, there is a growing concern that the studies that found these protective effects may not have defined levels of alcohol risk appropriately. These studies often combine lifetime abstainers and former drinkers, who are also called "sick quitters." Many former drinkers stop drinking because they begin to accumulate sequelae from their consumption. Mixing the healthy lifetime abstainer group and the sick quitter group would make the lifetime abstainers appear sicker than they truly are, which, in turn, would make moderate drinkers look healthier than they really are *(81)*. If this hypothesis is true, it means that the often-touted benefits of moderate consumption are merely an artifact of residual confounding.

Researchers are actively working to clarify the role of alcohol in cardiovascular disease, and the emerging consensus is that it is complicated *(82, 83)*. Higher volumes and riskier patterns of consumption are associated with increased risk of hypertensive heart disease *(84)*, cardiomyopathy *(85)*, and hemorrhagic and other non-ischemic strokes *(66)*. The association between alcohol and ischemic heart disease and stroke is more nuanced. Drinkers who maintain low volumes of alcohol over time tend to have lower risk of these outcomes, but this is only if they do not engage in heavy drinking, even occasionally *(82, 86)*. If drinkers engage in irregular heavy episodic drinking, not only do the cardioprotective effects evaporate, but the risk of ischemic heart disease increases *(82, 86)*.

Mortality

While the majority of alcohol-related harms are non-fatal, alcohol plays a greater role in more severe harms. Similar to the morbidity section, this section first reviews a few leading causes of alcohol-related death in the Americas: interpersonal violence, road traffic injury, malignant neoplasms (cancer), and liver disease. It then describes and uses a series of indicators to quantify the burden of alcohol-attributable mortality in the Americas in 2016.

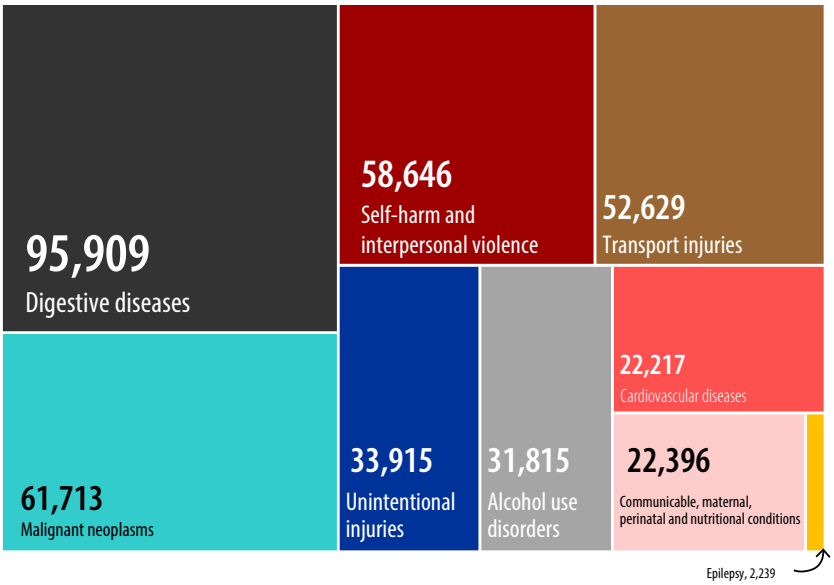
Indicators of mortality

Number of deaths and rates of death

Alcohol was responsible for over 379,000 deaths in the Americas in 2016[1]. When compared to the rest of the world, the Americas had higher rates of alcohol-attributable deaths per 100,000 due to AUDs (2.9 vs. 1.9). The rates of alcohol-attributable deaths from digestive diseases (8.4), malignant neoplasms (5.1), and epilepsy (0.2) were comparable to the rest of the globe. Within the Americas, digestive diseases (95,909), alcohol-attributable neoplasms (61,713), and self-harm and interpersonal violence (58,646) were the causes of death that claimed the most lives in 2016 (Figure 26).

Of the 379,031 deaths, 320,623 (84.6%) were men and the other 58,408 (15.4%) decedents were women. Figure 27 shows the rates of alcohol-attributable deaths for men and women in the Americas in 2016 *(87)*. Decedents of alcohol-attributable deaths in the Americas were disproportionately male; on average, there were approximately 832.0 alcohol-attributable deaths per every 10,000 males and 156.7 alcohol-attributable deaths per every 10,000 women. The rate of alcohol-attributable deaths per 10,000 persons was lowest in high-income countries for both men (751.5) and women (125.3). It was higher in upper-middle (men: 856.6; women: 158.0) and lower-middle-income countries (men: 861.3; women: 194.5).

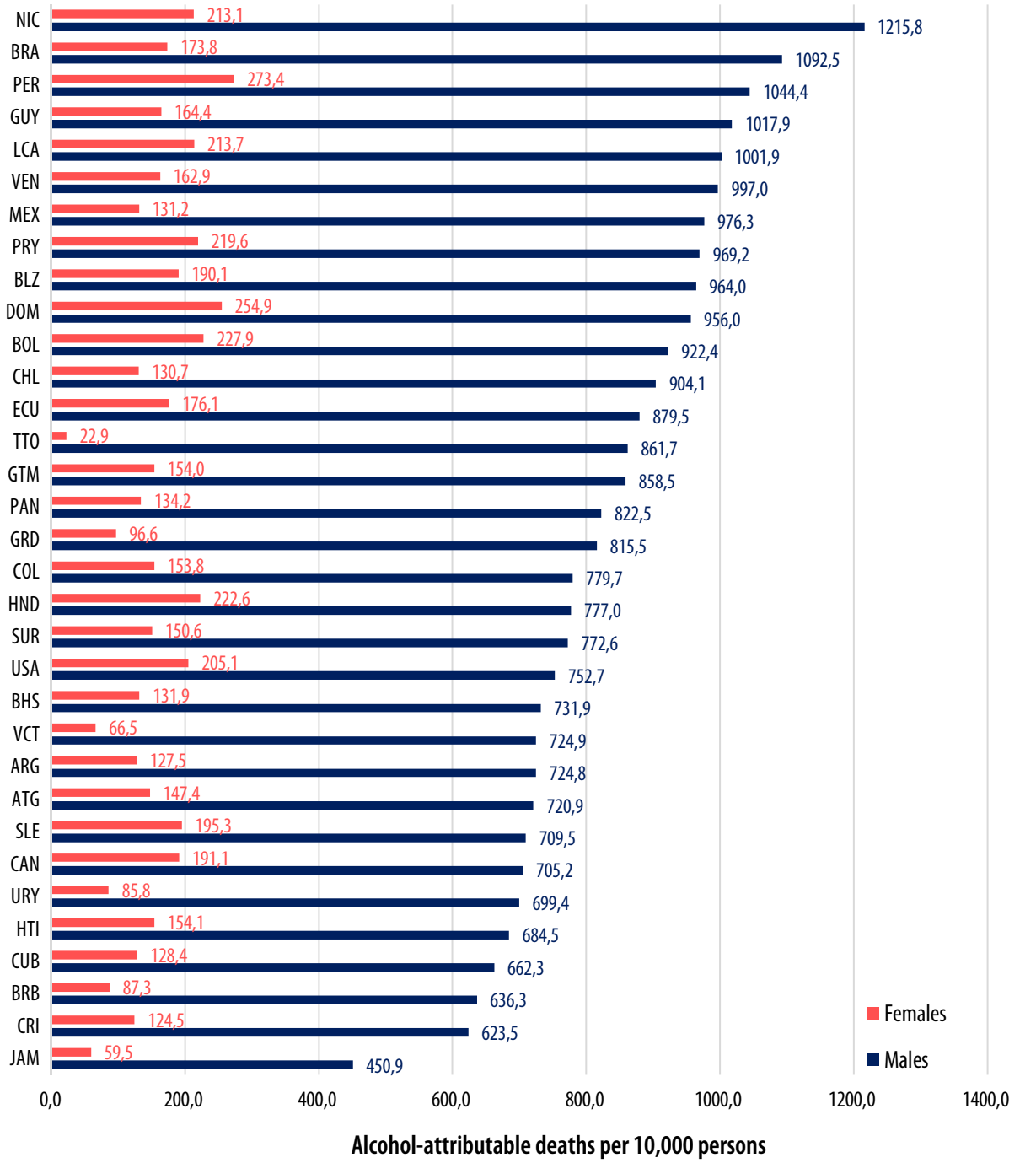
Figure 26. Number of alcohol-attributable deaths by cause of death, the Americas 2016



NOTE: *Circle box is proportional to the number of deaths. Alcohol was extimated to prevent 6,107 cases of diabetes in 2016 that are not reflected in Figure 27.*
Source: *Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018.*

1 This estimate includes detrimental and beneficial health consequences of alcohol use. The value presented here is the net deaths (detrimental – beneficial).

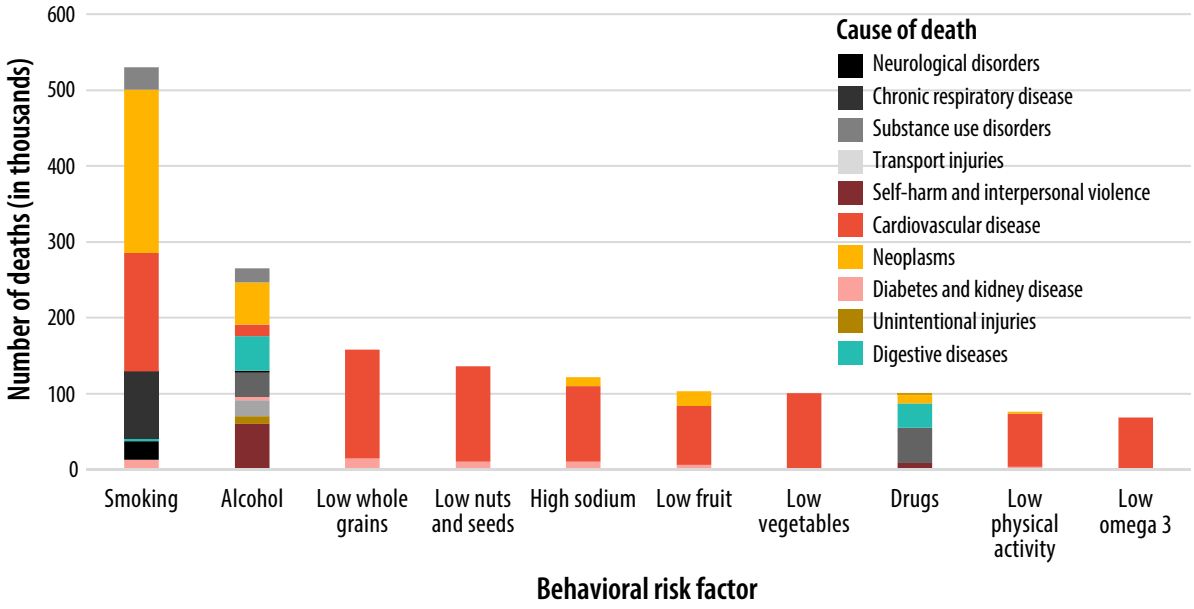
Figure 27. Alcohol-attributable death rates per 10,000 population in the Americas, by country and gender 2016



Source: *World Health Organization. World Health Statistics 2016: Monitoring Health for the SDGs, sustainable development goals. Geneva, Switzerland: World Health Organization; 2016.*

When comparing the leading behavioral causes of death, alcohol ranked second overall (Figure 28) and for males and fifth for females in the Americas in 2016 *(49)*. Many of the leading causes of alcohol-attributable deaths in the Americas were non-communicable such as cancer, cardiovascular disease, and diabetes. **Non-communicable diseases (NCDs)** have quickly become the leading cause of death in many countries. The key to preventing the occurrence of NCDs is in altering the behavioral risk factors that underlie them, especially by focusing on environmental factors. Alcohol contributes to a range of NCDs, which is one of the reasons why the WHO's Global Action Plan for the Prevention and Control of NCDs 2013-2020 included comprehensive restrictions on alcohol use.

Figure 28. Mortality attributable to leading behavioral risk factors for noncommunicable diseases (NCDs) in the Americas, 2016

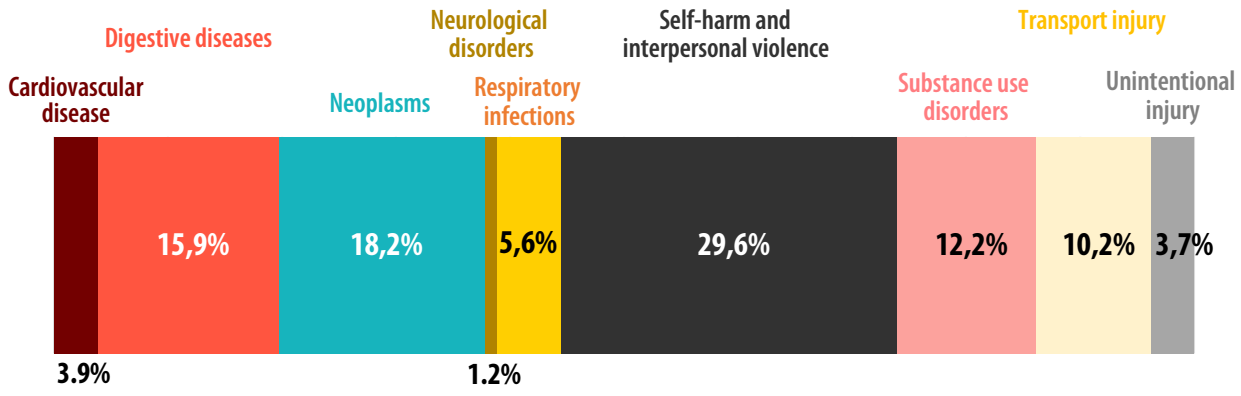


Note: *The overall estimate of alcohol-attributable deaths from NCDs is lower because of the differences in how IHME does calculations.*
Source: *Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Halth Metrics and Evaluation (IHME), 2018.*

Years of life lost

Alcohol was responsible for nearly 3 in every 10 years of life that were lost in the Americas in 2017. **Years of life lost (YLL)** is an indicator that measures the impact of the leading causes of death. It is particularly sensitive to deaths among the young, which are important because youth are a critical sector of the job market and represent the future. Figure 29 shows the alcohol-attributable conditions that contributed to the greatest loss of life. The leading causes of YLL from alcohol in the Americas in 2016 were self-harm and interpersonal violence (29.6%), neoplasms (18.2%), and digestive diseases (15.9%).

Figure 29. Years of life lost due to alcohol-attributable causes in the Americas, 2016 by type of cause



Source: *Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018.*

Causes of mortality

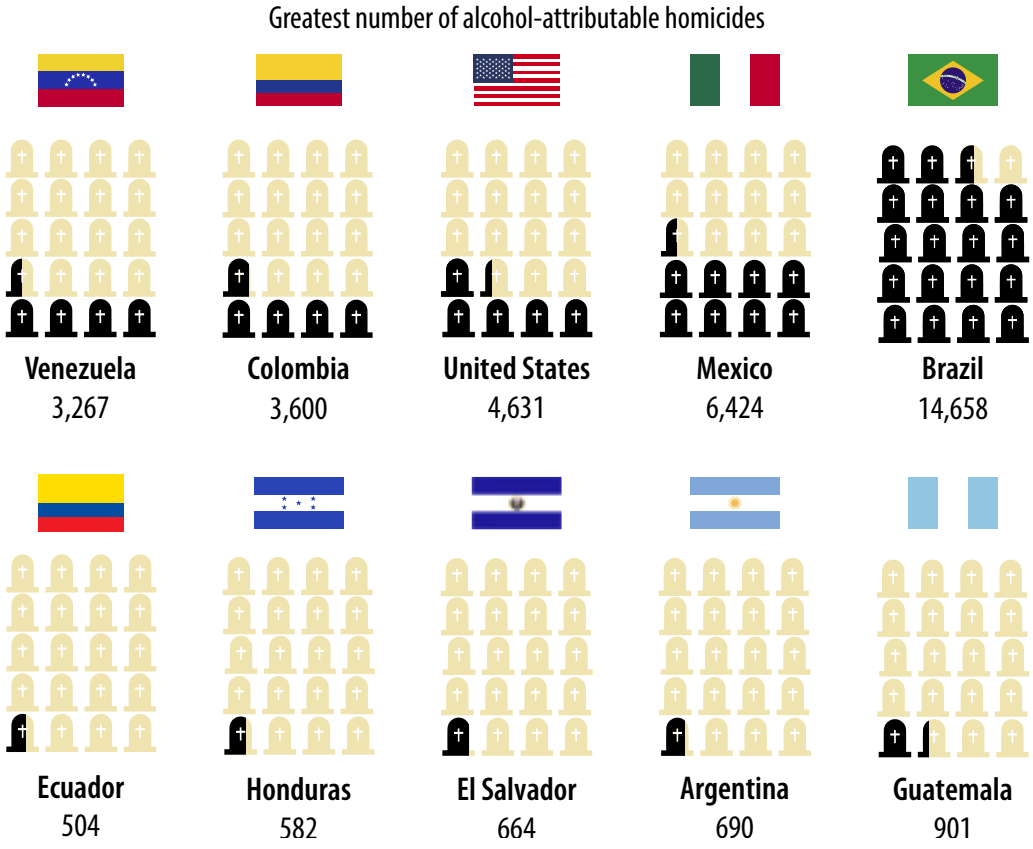
Homicide

A recent systematic review concluded that the association between alcohol and violence is "enormous, unequivocal, and dates back to the 1930s" *(88)*. The cross-sectional association between alcohol and interpersonal violence has been found on every continent, and the association between alcohol and violence exists at the population and individual level. There is a clear association between alcohol consumption and aggression such that larger doses of alcohol are associated with higher burdens of violence *(89)*; thus, the link between HED and homicide is particularly strong. Another recent analysis that used data from 10 Latin American and Caribbean countries found that 86% of the injuries suffered by persons who consumed alcohol prior to engaging in interpersonal violence were caused by the alcohol, and 32.7% of all interpersonal injuries were attributable to alcohol *(90)*. It is possible that alcohol contributes to these events by reducing self-control, the ability to negotiate non-violent resolutions, and increasing stressors such as financial difficulties, marital tension, and infidelity.

The connection between alcohol and homicide is particularly strong in locations where drinkers often drink to intoxication like the Americas. In the United States of America, one study estimated that 48% of offenders in prison for homicide had consumed alcohol prior to crime and 37% were intoxicated at the time of the homicide *(91, 92)*. In addition, roughly one in three homicide victims were intoxicated at the time of the homicide *(91, 92)*. Males and young adults (aged 21-29 years) comprise a large segment of homicide victims who test positive for alcohol, and they also have substantially higher odds of being intoxicated at the time of the homicide *(93)*.

Figure 30 shows the countries with the greatest number of alcohol-attributable homicides as well as the countries where alcohol-attributable homicides comprised the largest percentage of deaths. The largest numbers of deaths from alcohol-attributable homicides were in the most populous countries (Brazil, Mexico, and US). The highest rates of death from alcohol-attributable violence were in El Salvador (35.0 deaths per 100,000), Venezuela (34.3 deaths per 100,000), Belize (24.3 deaths per 100,000), Colombia (24.2 deaths per 100,000), and Brazil (21.7 deaths per 100,000). However, the gap between the death rate for males and the general population was largest in Trinidad and Tobago (3.3), Panama (3.3), the United States (3.3), Venezuela (3.2), Saint Lucia (3.2), and Uruguay (3.2).

Figure 30. **Ten countries with the greatest number of alcohol-attributable homicides in the Americas in 2016**



Source: *Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2018.*

Brazil is an outlier with alcohol-attributable homicides; it had 3.3 times as many alcohol-attributable homicides as the United States in 2016 even though it only has 62% of the population. Researchers have examined the nexus between alcohol and interpersonal violence in Brazil in recent years, and the findings demonstrate that it is complex. For example, one study from São Paulo found that one-third (32.4%) of homicide victims tested positive for alcohol *(94)*. In addition, even those who are non-fatally injured by interpersonal violence have a higher risk of death in the long term; Brazilian women who experience violence have a risk of death that is 8 times higher than the general population *(95)*.

Road traffic injury

Alcohol is a major cause of road traffic injuries. The overwhelming majority (90.0%) of road traffic deaths occur in low- and middle-income countries even though these countries contain 60% of the roads in the world *(96)*. Road traffic injuries are largely a phenomenon associated with young males, and their premature deaths carry a high price tag. Approximately three out of every four road traffic crashes involve a young male (25 years or younger), and young males are three times more likely to be killed in a road traffic crash as young females *(96)*. Data from emergency departments in 16 Latin American and Caribbean countries found that persons who drank alcohol had five times higher odds of being injured in a road traffic crash than persons who did not drink *(75)*. In addition, roughly 14% of all injuries from road traffic incidents were attributable to alcohol (7% for females and 19% for males) *(75)*.

In Latin America and the Caribbean, fatality rates from road traffic crashes increased from 14.8 to 17.9 per 100,000 between 2000 and 2010, a rate twice that of high-income countries *(97)*. The burden of these alcohol-related road traffic deaths is uneven across the Americas; for example, death rates in the non-Latin

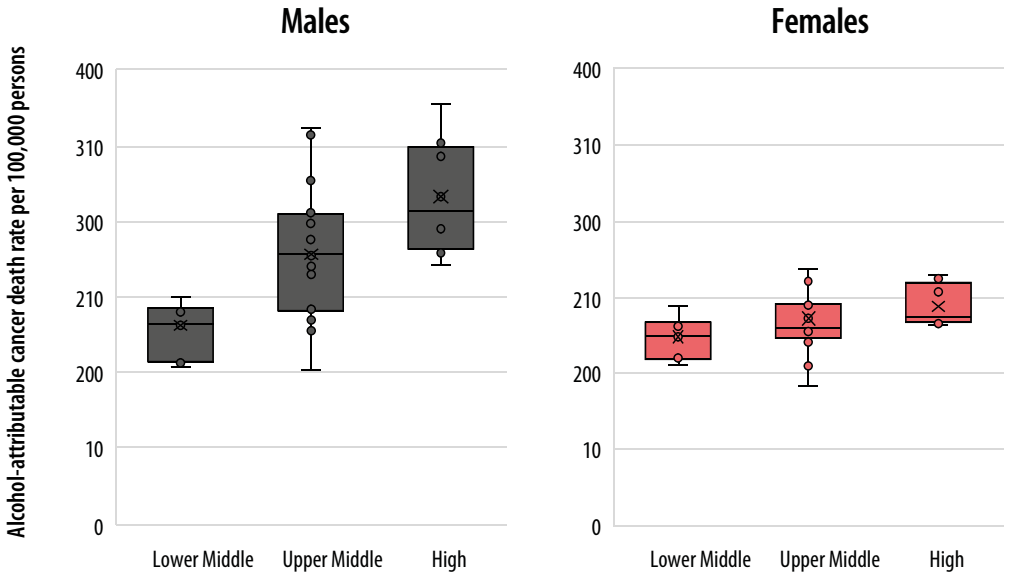
Caribbean (13.8 per 100,000) are lower than those in the Andean Area (18.5 per 100,000). These burden of these deaths often rippled across families, as most (73%) low-income families who lost someone in a road traffic crash reported that their standard of living declined afterwards, and many (61%) had to borrow money to cover costs *(97)*.

Malignant neoplasms

Like tobacco, alcohol is a group 1 carcinogen, which means that it is known to cause cancer in humans *(98, 99)*. The risk for developing cancer increases with every drink of alcohol consumed. For women, each additional drink of alcohol consumed per day increases the risk of cancer as much at 10% *(100)*. From a cancer prevention perspective, there is no safe level of alcohol consumption. The sites in the body where alcohol can cause cancers follows the path that beverage alcohol takes through the body: the mouth, esophagus, liver, stomach, and colorectal region. The risk of cancer from alcohol use is larger among women than men, due primarily to the large burden of breast cancer in general; alcohol is responsible for roughly 1 in every 7 cases of breast cancer *(15, 100)*. However, the percentage of cancers caused by alcohol is far higher in some portions of the Americas. For example, alcohol was responsible for 37% of cancers among women in the Caribbean *(101, 102)*.

As countries in the Americas develop, the prevalence and burden of cancer is increasing *(103)*. The association between alcohol use and cancer risk also differs by socioeconomic status at the individual and societal levels. At the individual level, persons with lower incomes tend to have higher risk of head and neck cancers, while the wealthy have higher risk for breast cancer *(52)*. At the societal level, income can drive differences in trends. For example, the prevalence of alcohol use and the rates of breast cancer deaths are falling in many high-income countries, but breast cancer rates have increased by 37% in the Caribbean since 1990, where it is the leading cause of cancer death among women *(104)*. The role of income in the alcohol-attributable cancer death rate can be seen more clearly in Figure 31. The age-standardized alcohol-attributable cancer death rate increases linearly from low- and lower-middle (males: 127.9 per 100,000 persons and females: 123.5 per 100,000 persons), to upper-middle- (males: 178.9 per 100,000 persons and female: 132.8 per 100,000 persons), and are highest in high-income countries (males: 216.2 per 100,000 persons, and females: 144.3 per 100,000 persons).

Figure 31. Alcohol-attributable cancer death rate per 100,000 persons in the Americas in 2016, by gender and World Bank income group



High-income countries defined as countries with a gross national income per capita greater than $12,376 (USD) (30).
Upper-middle-income countries defined a countries with a gross national income per capita between $3,996 and $12,375 (USD) (30).
Low- and lower-middle-income countries defined as countries with a gross national income per capita less than or equal to $3,995 (USD) (30).
***Source:** World Health Organization. (2018). Global Information System on Alcohol and Health. Harms and Consequences, Mortality. Cancer, age-standardized death rates Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Liver disease

Liver disease is often one of the first types of alcohol-related harms that comes to mind, and the causal link between alcohol and liver damage is well-established. Roughly 10-15% of heavy drinkers develop cirrhosis *(105, 106)*, and alcohol is one of the most common causes of liver damage. As the body's first line of defense against foreign toxins, the liver bears the brunt of the deleterious byproducts that flow through the body as it breaks down alcohol *(107)*. In addition to the toxins released as the body metabolizes alcohol, alcohol use can also harm the liver by causing malnutrition *(107)*. Liver disease itself also carries a heavy burden. Nearly half of persons with acute alcoholic hepatitis will die from it, and the average patient with advanced liver cirrhosis surviving only 1-2 years after receiving that diagnosis *(108)*.

There are also notable inequalities in the distribution of alcohol-attributable liver disease. Women are more susceptible than men to alcohol's toxic effects on the liver, and consequently, they have roughly twice the risk of developing alcoholic liver disease and cirrhosis at similar levels of consumption *(109)*. In addition, racial/ethnic disparities in liver disease have been identified in the United States of America. Specifically, Hispanic/Latinos and Native Americans have a higher risk of dying from cirrhosis than White patients do *(109)*.

Table 1. Ten countries in the Americas with the highest age-standardized alcohol-attributable liver cirrhosis death rates (per 100,000 population), by country and gender 2016

Males			Females		
Rank	Country	Liver cirrhosis death rate among males	Rank	Country	Liver cirrhosis death rate among females
1	Nicaragua	67	1	Bolivia	31
2	Guatemala	61	2	Peru	26
3	Peru	58	3	Belize	25
4	El Salvador	58	4	Guatemala	25
5	Guyana	54	5	Nicaragua	23
6	Mexico	53	6	Honduras	22
7	Bolivia	53	7	El Salvador	21
8	Belize	46	8	Dominican Republic	20
9	Suriname	40	9	Ecuador	18
10	Haiti	36	10	Haiti	18

Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Harms and Consequences, Mortality. Liver cirrhosis (15+), age-standardized death rates. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Even though liver disease results from sustained volume of alcohol consumption, the high prevalence of disease means that changes in alcohol use can be detected relatively easily using trends in liver disease. For example, the increasing prevalence and levels of consumption among women in recent years was associated with a 57% increase in cirrhosis death rates in the United States between 2000-2015. The prevalence of alcohol-attributable deaths that are due to cirrhosis varies across the Americas. In North America, 8.8% of alcohol-attributable deaths are due to cirrhosis, while in Central and Southern Latin America and it is 20.2 and 14.0%, respectively. Although the prevalence in men is in general greater, this is not the case in the Caribbean (women: 0.4%; men: 0.6%) and Andean Latin America (women: 1.5%; men: 1.7%), where they are roughly equal.

Research on alcohol-related hepatitis C virus (HCV) infections is accumulating, making it possible to estimate the proportion of the population living with HCV. There are two types of HCV infections. Acute HCV infections often persist for less than 12 months and clear in about a third (30-40%) of cases without medical treatment *(110)*. Those who do not clear acute HCV develop chronic HCV infections. Alcohol use is associated with increasing the risk of acquiring HCV infections and progressing to later diseases stages *(111-114)*. For those living with HCV infections, each alcoholic drink consumed per day increases the risk of developing liver cirrhosis by approximately 12.6% *(115)*.

In 2016, 3,312 people died from liver cancer caused by alcohol use among those living with HCV infections, and another 4,990 people from this population died from alcohol-attributable liver cirrhosis *(115)*. In combination, these two conditions were responsible for 246,638 DALYs *(115)*. The fraction of persons living with HCV infections who died from alcohol-attributable disease progression (liver cancer: 16.1%, liver cirrhosis: 15.8%) was second only to the European region (liver cancer: 18.3%, liver cirrhosis: 17.1%) *(115)*.

Cost

Alcohol often carries a high cost to societies. At the individual level, the cost to society is roughly $412 per person in Canada (2014) and $807 per person in USA (2010) (*116*). **Cost** includes the total financial burden of alcohol on a given population. Often, costing analyses estimate the cost of alcohol to society, which encompasses the total costs paid by drinkers, others (e.g., crime victims, children born with FAS), and the government. When costing data are available, they can help policy makers allocate resources among different prevention alternatives by converting the burden of alcohol to a common metric (money) and comparing it to other leading health risks. Because alcohol use is so prevalent among many countries in the Americas, it often has relatively high costs for society. As an example, alcohol was the substance with the highest price tag ($14.6 billion) in Canada in 2014; tobacco ($12.0 billion) was the only other substance that came close to this amount (*117*).

There are two main types of costs: direct and indirect costs. **Direct costs** are costs that are incurred as a result of alcohol production, sale, and/or consumption. Typically, direct costs of alcohol consumption span several domains, including health and medicine, criminal justice (e.g., police services, legal, incarceration), and other costs (e.g., road traffic crashes, fire injuries, government-funded research). **Indirect costs** often include productivity losses, lost wages and earnings, and other intangible costs (e.g., pain and suffering). Usually, productivity losses are responsible for most of the costs associated with alcohol use. This is because alcohol-attributable harms often strike the young, who are vital to countries' economic sectors and live with disability for longer periods of time.

Alcohol-attributable conditions can incur substantial financial costs. This section established that FASD is unusually common in the Americas. It is also associated with high costs because FASD is present at birth and associated with 400+ potential comorbid conditions (*118*), and, therefore, high costs can accumulate over the lifespan. For example, persons born with FASD can incur costs from heightened use of health care services (e.g., hospitalizations, specialized treatment), law enforcement and incarceration resources (i.e., police services, judicial processes, and corrections), special education, and job skills training (*119*). A recent study estimated the total cost of FASD in Canada in 2013. It found that FASD cost society between $1.3 and $2.3 billion (*119*). Valued at $532 million to $1.2 billion, productivity losses from comorbid conditions and premature death were the largest contributors to these costs (42.2%) (*119*). After that, criminal justice and incarceration (30.0%, $378.3 million) and health care services (10.2%, $128.5 to $226.3 million) were also responsible for large shares of the total burden (*119*).

ALCOHOL POLICIES

Overview of alcohol policies

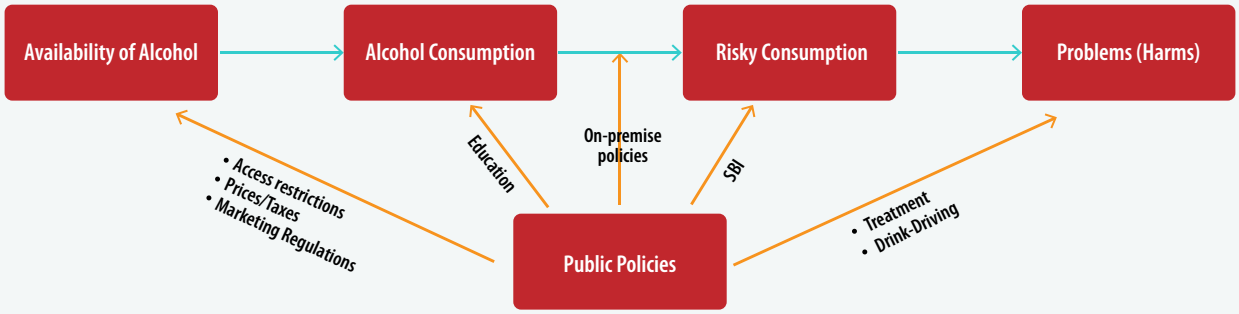
Every society must decide how it will regulate products that are intoxicating and potentially deadly. **Alcohol policies** are laws, rules, and regulations that prescribe who, what, where, and when alcohol can be used (*31*). In many ways, alcohol is just like other products that are available in commercial retail markets; it is subject to sales taxes and laws related to its business structure. However, there are other ways in which alcohol is atypical. Consequently, many societies add special considerations that aim to protect the public's health. These regulations may focus on the groups of people who may purchase and/or consume alcohol, where and when alcohol can be sold, limits on product design, and/or restrictions on marketing.

This section summarizes the evidence base, with an emphasis on research from the Americas, to highlight which strategies are the most effective in safeguarding the public's health. It also draws attention to those policies and interventions that are known to be effective at preventing the patterns of consumption and harms documented in the two previous sections. In particular, this section provides a situational analysis of the level of policy adoption in the Americas.

Box 4. Types of policies

Interventions and policies may focus on several type(s) of populations and identifying the target for a given intervention or policy can help determine whether it is an appropriate response for a given problem (see Figure 32). **Universal** policies affect the entire population. These population-wide strategies often aim to prevent consumption and related problems before they occur such as national alcohol excise taxes, minimum legal purchase ages, regulations of hours of sale, and advertising restrictions. **Selective** interventions and policies also aim to prevent potentially harmful alcohol use but they restrict their focus to specific subgroup(s) that are at a higher risk (e.g., youth, college students). Examples of selective alcohol policies are screening for alcohol problems on college campuses and establishing lower blood alcohol concentration limits for novice drivers. Finally, **indicated** interventions and policies focus on smaller population groups either to reduce the harm from alcohol among those already harmed in some way, or to separate the drinking from other risks or harms. The goal of indicated approaches is to treat problems early and prevent future problems and complications. For example, alcohol treatment for persons who are dependent on alcohol, drink-driving countermeasures such as alcohol ignition interlocks are examples of indicated interventions related to alcohol.

Figure 32. **Alcohol policies from primary prevention to treatment and harm reduction**



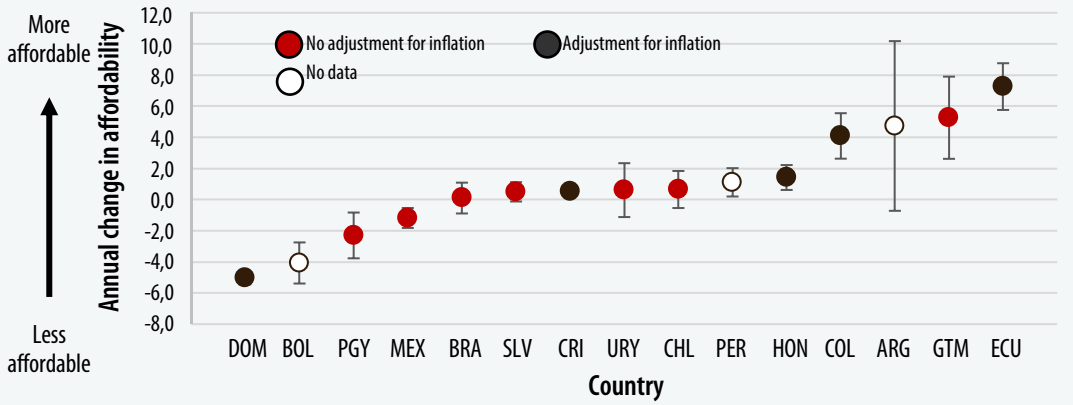
Pricing policies

Pricing policy is a powerful tool that is too often underused by policymakers and decision-makers. Several systematic reviews and meta-analyses demonstrate that there is a strong and reliable inverse association between the price of alcohol and alcohol consumption and related harms just like the association that is seen for tobacco and sugar-sweetened beverages. Another reason why pricing policies are so vital is because it is relatively easy for governments to collect taxes on alcoholic beverages, however it is challenging due to the difficulty in approving this policy. Alcohol use is common; alcoholic beverages are relatively simple to categorize by ingredients, alcohol content, and/or size; and there are just a few companies that control the alcohol market. Studies, mainly from high-income countries, establish that price increases are associated with decreases in the percent of people who drink alcohol, how often they drink alcohol, and how much alcohol they drink on a given drinking occasion (*120, 121*).

Box 5. Beer and sugar-sweetened beverage taxes in Latin America

Most countries in Latin America tax beer and sugar-sweetened beverages (SSBs), two beverages associated with public health harms, but these taxes are often designed to provide revenue rather than achieve public health goals (*122*). Mexico's introduction of a peso-per-liter excise tax on SSBs in 2014 demonstrated the potential gains that are possible with taxes; consumption fell by 5.5% in the first year and an additional 9.7% in the second year (*123, 124*). Even though most countries in Latin America tax beer and SSBs, consumption of these beverages is on the rise. Between 2012 and 2016, 13 Latin American countries witnessed annual increases in beer consumption around 2.9%, which exceeded increases in population growth (1.2%) (*125, 126*). This apparent disconnect prompted a recent investigation into whether taxes on beer and SSBs were controlling the affordability of these beverages in Latin America over time by calculating annual changes in the relative price for 15 countries (*127*).

Affordability of beer remained held constant or increased in most Latin American countries (see Figure 33) (*127*). Paraguay, Brazil, El Salvador, Uruguay, Chile, Costa Rica, Argentina and Peru saw no change in the affordability of beer over the study period (*127*). Affordability increased at an annual average rate of 1.4% in Honduras, 5.3% in Guatemala, 7.3% in Ecuador, and 4.1% in Colombia (*127*). It also decreased each year by 5.0% in the Dominican Republic, 4.1% in Bolivia, and 1.2% in Mexico (*127*).



Source: *Data for annual change in affordability are from Paraje, G., & Pincheira, P. (2018). Affordability of beer and sugar-sweetened beverages in 15 Latin American countries. Rev Panam Salud Publica, 42, 1. Data for adjusting taxes for inflation are from the WHO 2016 Global Survey on Alcohol and Health.*

It is critical for countries to pursue both fiscal and health benefits of alcohol taxes. Historically, countries would only use alcohol taxes to raise funds; these efunds were not directly used to prevent and control the harmful use of alcohol. This misses a potential "win-win policy" that could simultaneously provide additional funds and achieve meaningful public health change (*128*). For example, if all 15 full-member Caribbean Community (CARICOM) countries raised beer, rum, and cigarette excise taxes enough to reduce consumption by 5%, it would generate approximately $86.32 million (USD), which exceeds the amount the region estimates is needed to respond to NCDs even after a 50% increase in the per capita cost of the NCD response ($78.87 million USD) (*129*).

The logic for why increasing the price of alcohol would reduce consumption and related harms is similar to availability theory for physical availability policies. Price policies rely on the law of supply and demand; consumer demand is higher for goods that are more affordable when compared to more expensive alternatives. Thus, deliberately raising prices for alcoholic beverages (through taxes or other means) should decrease demand, and by extension, consumption and related harms. It is not just the price tag that determines if alcohol prices will impact consumption; rather, it is important to consider the **affordability** of alcoholic beverages, which is the cost of alcohol in relation to other products and the drinker's real income (wages adjusted for rates of inflation). Affordability is calculated as income divided by price, which means that there are two ways to manipulate beverage affordability: change the drinkers' incomes level or change the price of the alcohol itself (*127*).

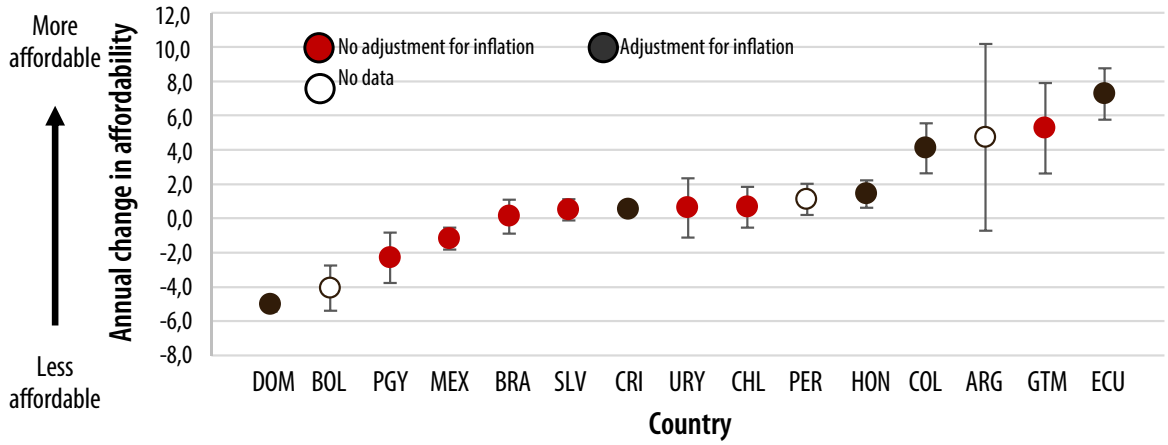
All groups of drinkers, particularly youth and heavy drinkers, drink less after the price of alcohol increases. Alcohol is price inelastic, which means that the changes in consumption are smaller than changes in price. **Price elasticities** are calculated as the percent change in consumption that is expected with a 1% increase in the price. They tend to be higher in places with lower income levels and where alcohol is viewed as a luxury good (*122*). For example, price elasticities tend to range around -0.51 to -0.77 in high-income countries (i.e., a 10% increase in the price of alcoholic beverages will result in a 5.1% to 7.7% reduction in consumption) and -0.64 in low- and middle-income countries (*122*). There are few studies that evaluated changes in alcohol prices on consumption or related harms from low- and middle-income countries, but data from tobacco (*130, 131*) and sugar-sweetened beverages (*123, 132, 133*) establishes that prices are more elastic in countries with lower incomes.

Box 6. Alcohol excise tax increase in Peru

As countries in the Americas develop, many are experiencing dramatic increases in the burden of non-communicable diseases. Consequently, many are considering taxes on commodities that are associated with the behavioral drivers of non-communicable diseases. In 2018, Peru became one of the first to enact pricing policies designed to curb this emerging epidemic (*134*). They raised taxes on alcoholic beverages that were at least 20% alcohol as part of a policy focused on drivers of noncommunicable diseases: tobacco, alcohol, sugar-sweetened beverages, and motor vehicles with high pollution (*134*). In a time of declining resources for health care and rising consumption of harmful products, the motivation for these taxes were two-fold: they aimed to reverse trends of increasing use while also creating new revenue streams to fund additional treatment and prevention initiatives. Non-communicable diseases that result from alcohol, tobacco, obesity, and pollution cost Peru roughly $24 billion per year, which is roughly 11% of their **gross domestic product (GDP)** (*135*). By comparison, the Peruvian government spends about 3.7% of their GDP on health care.

Alcohol excise taxes are taxes applied specifically to alcoholic beverages. They are the most cost-effective alcohol control policy, and they can reduce levels of consumption and delay/prevent youth from starting to drink (*136*). While all types of alcohol taxes will generate financial revenue, there are two main types of taxes that can be applied to alcoholic beverages: excise taxes and sales taxes (Figure 33). **Sales taxes** are applied to a wide range of goods and services, meaning that they are not specific to alcohol. **Excise taxes**, on the other hand, can be applied to alcoholic beverages specifically; therefore, they tend to promote greater changes in drinking patterns (*122*). Excise taxes can be applied based on three factors or a combination of these factors: 1) beverage volume, 2) alcohol content (amount of pure alcohol), and 3) price of the alcoholic beverage. Taxes that focus on either the overall beverage volume or the amount of alcohol are called **specific excise taxes**, and taxes that are based on product price are called **ad valorem taxes**. When used to moderate consumption, specific excise taxes target youth, heavy drinkers, and persons with lower incomes (*136*). Specific excise taxes can also be applied to categories of products, which means that they can reduce drinkers' options to substitute with cheaper brands by preventing price gaps between brands when applied strategically (*122*). In addition, specific excise taxes that link the size of the tax to alcohol content may have more health benefits than taxes based on product volume, because alcohol content is a main driver of alcohol-related harms (*137*). When designing an alcohol tax structure, governments should consider the current levels of alcohol consumption, sub-population(s) of interest, and goals for revenue generation (*136*).

Figure 33. Types of alcohol taxes



Source: *Based on Pan American Health Organization. Policy Brief: Alcohol Taxation and Pricing Policies in the Region of the Americas. Washington, D.C.: PAHO; 2019.*

Three common goals for a public health approach to alcohol pricing are: 1) Equalize the alcohol consumed based on alcohol content; 2) Adjust specific excise taxes for inflation; and 3) Set a minimum price. The following section will describe the alcohol pricing policies that were in place in the Americas in 2016 with a special emphasis on determining how well the current policies achieve these three goals. Comparing affordability indices and consumption patterns by beverage type will determine whether countries are successfully equalizing alcohol consumption by content. Among the countries with a national tax on alcoholic beverages, the second goal will be assessed using a tally of the countries that also reported adjusting their prices for inflation regularly. Finally, the frequency of minimum price policies will evaluate whether countries are meeting the third goal.

Alcohol taxes or levies

Twenty-nine of the 35 countries in the Americas reported a national excise tax on beer, wine, and spirits in 2016. Argentina and Uruguay reported national excise taxes on beer and spirits but not wine, and Antigua and Barbuda and Cuba reported that they did not have any excise taxes.

Alcohol prices are associated with high-risk drinking; data from the International Alcohol Control Study show that heavy drinkers tend to pay less for alcoholic beverages (*138*). In addition, purchasing cheap alcohol at off-premise alcohol outlets (but not on-premise outlets) is associated with daily consumption (*138*). Overall, affordability tends to be the lowest among high-income countries like Canada, Uruguay, Saint Kitts and Nevis, and Chile. Countries with lower incomes like Nicaragua, Guatemala, Belize, and Jamaica tended to have alcoholic beverages that were more affordable. In addition, lower-middle-income countries that had low affordability for beer (e.g., Argentina, Costa Rica) had local and/or imported spirits that tended to be more affordable. This suggests that countries with lower incomes were less likely to use prices to equalize alcohol consumption based on alcohol content.

Adjustment of specific alcohol taxes for inflation and cost of living

The second goal for alcohol pricing policies was to adjust alcohol specific excise taxes regularly so that they keep pace with inflation/wage increases and can continue to reduce or prevent alcohol consumption and related harms (note this is not necessary for ad valorem taxes). This is achieved when the tax adjustment is the same as the consumer price index (*136*). Of the 26 countries that reported having a national excise tax on alcohol, only six (23.1%) also reported adjusting those taxes regularly. Not a single high-income country reported adjusting alcohol taxes for inflation in the Americas, but two thirds of lower-middle and upper-middle income countries adjusted their alcohol excise taxes to keep pace with inflation.

Other pricing policies

Other pricing policies, including minimum pricing, were rare in the Americas. Canada was the only country in the Americas that reported any type of minimum pricing policy in 2016, and that policy was implemented at the sub-national level. Consequently, the Americas (3.0%), along with the Eastern Mediterranean Region (<0.1%), had the smallest percentage of countries with a minimum unit pricing policies, although the Southeast Asia Region (12.5%) and the Western Pacific Region (5.9%) had the same number of countries with this type of policy (n=1). Multiple countries in the African (n=2, 4.3%) and the European Region (n=6, 11.5%) reported using minimum pricing policies.

Reducing the physical availability of alcohol

The **physical availability of alcohol** refers to how available alcoholic beverages are in one's environment (*139*). Policies that regulate the physical availability of alcoholic beverages aim to change "**routine drinking patterns**" (i.e., the locations and behaviors associated with alcohol use) by increasing the "**full price**" of alco-

hol (i.e., the sum of the real price and opportunity and convenience costs) (*139*). Specifically, these availability policies aim to limit the convenience of obtaining alcohol to reduce alcohol consumption and related harms.

Monopolies and licensing

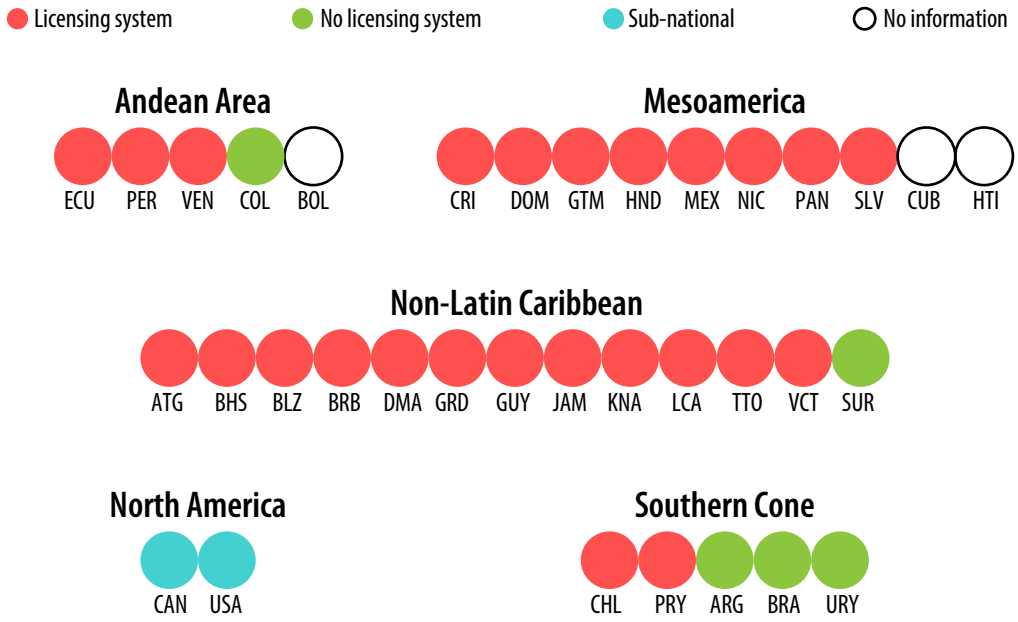
Under a **total ban**, the government has full control over the supply chain, and prohibit residents of a country from purchasing or consuming alcoholic beverages. After total bans, monopolies are the next most restrictive policy option. Total bans are largely confined to countries in the Northern Africa and Eastern Mediterranean sub-regions and are not realistic for the Americas. Instead, countries in the Americas often use either a licensing or monopoly system as the backbone for their policies. **Monopoly systems** permit the government complete control over some or all levels of the alcohol supply chain. Within the Americas, monopolies only exist at the sub-national level in North America. Portions of the government monopolies in the United States and Canada were still in effect in 2016, but the momentum to repeal these monopolies has been building in recent years. Licensing is the least restrictive approach, and it is the most common means of regulating the alcohol supply chain in the Americas. In countries with **licensing systems**, businesses can apply for a license that is often specific to one section of the supply chain. Through the licensing system, businesses often agree to conform with a set of rules and regulations but the private business oversees the day-to-day operations. Most (78.1%) of reporting countries endorsed a government licensing system for retail alcohol sales for beer, wine, and spirits (see Figure 34). Only five countries—Argentina, Brazil, Colombia, Suriname, and Uruguay—reported that they had neither a government monopoly nor a licensing system in 2016.

Box 7. Justifications for alcohol policies

There are two common justifications to implement alcohol control policies. The first assumes that consumers are unable to accurately predict the dangers of drinking alcohol, both for themselves and others, because drinkers are unaware of many of the risks of alcohol use. This implies that there is a market failure, because consumers may purchase and consume more alcohol than they would if they were fully informed about the potential risks of alcohol use. In this sense, alcohol control policies aim to correct for this market failure and better align knowledge and behavior. In an extension of this perspective, youth tend to underestimate how much harm their actions will cause and incorrectly forecast how they will feel about their choices in the future. Following this logic, additional protections to reduce and prevent alcohol use by youth would also better align their consumption with potential harms.

The other way to justify policies that increase the price tag for alcoholic beverages is to aim to offset the societal harms from alcohol use. In economics, these harms are called "negative externalities," which are harms or costs borne by someone other than the drinker. While alcohol sales can be lucrative for the alcohol and hospitality industries (among others), the costs to society can also accumulate, leading to sizable differences between government revenues and liabilities. For example, in the United States, the average drinker pays $0.03 (for beer and wine) $0.05 (for spirits) in government taxes for one drink (140), but each drink costs the government $0.87 (*116*). These costs accumulate through additional burdens in health care (16.8%), lost productivity (56.8%), criminal justice costs (23.9%), fire losses (2.1%) and special education for fetal alcohol syndrome (0.3%) (*116*).

Figure 34. Licensing policies on retail beer sales in the Americas by sub-region and country, 2016



Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Licensing requirements, Alcohol control policies. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Controls on retail sales

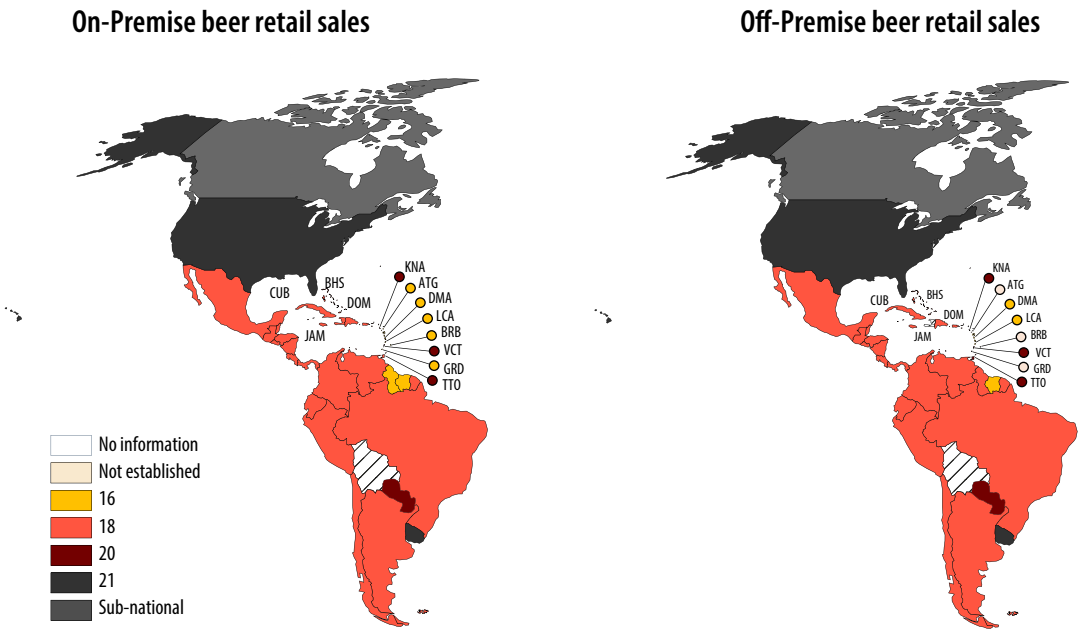
Many physical availability policies apply to the retail businesses that sell alcohol (i.e., **alcohol outlets**). In addition, policies may focus on specific types of alcohol outlets. A common distinction focuses on whether the outlet sells alcohol for consumption **on-premise** (e.g., bars or restaurants) or **off-premise** (e.g., packaged goods stores). Countries often establish limits on the hours and days of alcohol retail sales, and the location or density (i.e., concentration in a given area) of alcohol outlets.

Controls on alcohol outlets have been consistently associated with alcohol-attributable harms that are common in the Americas such as interpersonal violence, traffic crashes, and AUDs. For example, a natural experiment in Colombia found that limiting alcohol availability after 1 AM was associated with a 30% drop in risk of traffic deaths for automobiles and a 45% drop for motorcyclists (*141*). Similarly, a law that closed bars that had traditionally been open for 24 hours at 11 PM in Brazil resulted in a 44% decrease in homicide (*142*). Alcohol outlet density, particularly for off-premise outlets, has consistently been associated with increased rates of violence (*143-146*). Recent findings from the International Alcohol Control Study for Peru and St. Kitts and Nevis suggest that the majority of drinkers obtain their alcohol from these take-away stores and the majority of drinkers (72% for St. Kitts and Nevis and 94% for Peru) purchase alcohol after midnight at on-premise establishments (*147*). Recent evidence-based guidance has recommended limits on retail alcohol sales, including hours of sales, days of sales, and alcohol outlet density, as means of preventing violence (*148-150*), which was one of the leading causes of morbidity and mortality summarized in the previous section. All but two countries (Argentina and Suriname) have controls over at least one form of the retail availability of alcohol. When comparing the types policies that countries implemented, more than half restricted hours for on-premise (65.6%) and off-premise (56.3%) retail sales as well as the locations of outlets (54.8%). On the other hand, regulations on the days of retail sales and density of alcohol outlets were rare; only one in four countries (25.8%) limited the days of the week on which alcohol may be sold or the density of off-premise outlets like liquor stores. Similarly, about one in three countries (32.3%) established caps on the number of on-premise outlets (e.g., bars and nightclubs) that may open in a given area.

Minimum legal purchase ages

Given that alcohol more risk to youth, a common goal of alcohol policies is to prevent and delay youth initiation. Minimum legal purchase age policies are one of the most effective means of achieving this goal. All responding countries in the Americas had an established minimum purchase age for beer, wine, and spirits sales on premises. About 90.9% of countries have established minimum legal purchase ages for off-premise beer, wine, and spirits retail sales. The three countries that did not establish an age limit for off-premise sales (Antigua and Barbuda, Barbados, and Grenada) were all located in the Caribbean. As shown in Figure 35 the most common minimum legal purchase age was 18 years (n=23 for on-premise and n=24 for off-premise alcohol sales). The other common age limit was a few years younger, at 16 years (n=6 for on-premise and n=3 for off-premise). Older age limits were rare. One country established an age limit of 20 years (Paraguay), and another set their limit one year higher at 21 years (United States).

Figure 35. Minimum legal purchases for beer on-premise and off-premise sales, 2016



Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Age limits – Alcohol service/sales by country, Alcohol control policies. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Marketing of alcoholic beverages

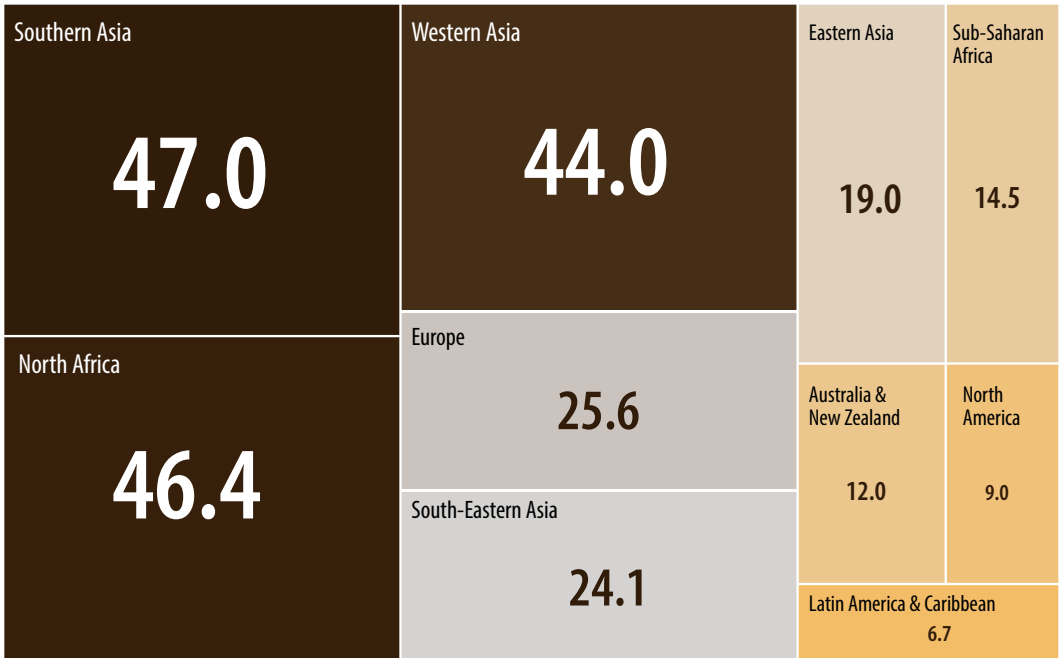
Alcohol marketing includes advertising, promotions (including digital promotions,) creative product designs and packaging, product placement, sponsorship, and corporate social responsibility campaigns (*151*). Advertising is designed to sell products. It does this by normalizing alcohol use and shaping viewers' expectations for drinking alcohol via "lifestyle" themes that depict drinkers as happier, more successful, adventurous, fun, and sexier (*151*). Alcohol marketing is a chief concern in the Americas because it is highly prevalent. For example, recent analysis of youth-related films released during 2004-2012 found that most contained alcohol in Argentina (93%), Mexico and the United States (both 83%) (*152*). Similarly, an analysis that included 14 countries in the Americas found the percentage of youth who reported seeing alcohol advertisements daily or almost daily over

the last 30 days was highest in Saint Lucia (44.6%), Argentina (42.7%), and Uruguay (35.5%) (*153*).

While physical availability and price policies among to increase the full cost of getting and using alcohol, controls on alcohol marketing aim to disrupt an aspect of the alcohol market that is associated with those who are most vulnerable, such as women and youth. There is a clear link between exposure to alcohol marketing (and more recently, engagement with alcohol marketing via social media) and alcohol initiation and use. Two systematic reviews of longitudinal studies from 1990-2016 show a definitive relationship between alcohol advertising exposure and both initiation of alcohol consumption and increased consumption (if already initiated), including binge drinking, in youth (*154, 155*).

One way to compare the stringency of alcohol marketing at the regional and country level is to calculate a restrictiveness score. These scores assign points based on the stringency of policies that restrict alcohol marketing on a range of media platforms. Esser and Jernigan developed an advertising restrictiveness score for the 2011 Global Status Report on Alcohol and Health. Their score assigns 2 points for a ban, 1 point for a partial ban, and no points for voluntary/self-regulation or no restrictions across the 10 media types included on the Global Survey on Alcohol and Health. After calculating these scores for each of the three main beverage types (beer, wine, and liquor), the total possible score is 60 points. Figure 36 compares the advertising restrictiveness score by sub-region. With an average score of 6.7, Latin America and the Caribbean was the sub-region that had the lowest advertising restrictiveness score in the world. North America had the next lowest advertising restrictiveness score, with an average score of 9.0. This suggests that most countries in the Americas have no advertising policies or policies that are only slightly restrictive.

Figure 36. Average advertising restrictiveness score[1] by United Nations sub-region, 2016



NOTE: *The size of each box is proportionate to the country's advertising restrictiveness score.*
Source: *Calculated using data from World Health Organization. (2018). Global Information System on Alcohol and Health. Advertising restrictions, Alcohol control policies. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Overall, the global trends in increasing advertising policy restrictiveness were not present in the Americas, and when progress toward more stringent policies occurred, it occurred at a pace that was slower than

1 The advertising restrictiveness score assigns countries points according to the level of their policies (2 points for a ban, 1 point for a partial ban, and no points for voluntary/self-regulation or no restrictions) across 10 media types. Higher numbers mean that the country has more restrictive alcohol marketing policies.

the changes at the global level. Across the 194 member states, there was a linear increase in the number of countries implementing restrictive alcohol advertising policies from 2008 to 2012 and again in 2016. However, there were no signs of these trends in the countries located in the Americas. Figure 37 shows trends in advertising restrictiveness scores over time. Not a single country in the Americas had consistent increases in advertising policy restrictiveness from 2008 to 2012 and again from 2012 to 2016. However, a handful of countries in the Americas had more restrictive policies in 2016 than in 2008, including Colombia (from 3 to 12), Ecuador (from 24 to 45), Costa Rica (from 24 to 27), Jamaica (from 0 to 12), and Paraguay (from 0 to 24). These gains are positive, but even with these recent advances, the level of protections for people who live in the Americas is low. For example, a score of 12 suggests that two of the three beverage types have no restrictions for advertising placement, content, or volume.

Figure 37. Advertising restrictiveness scores in the Americas by country, 2008 to 2016

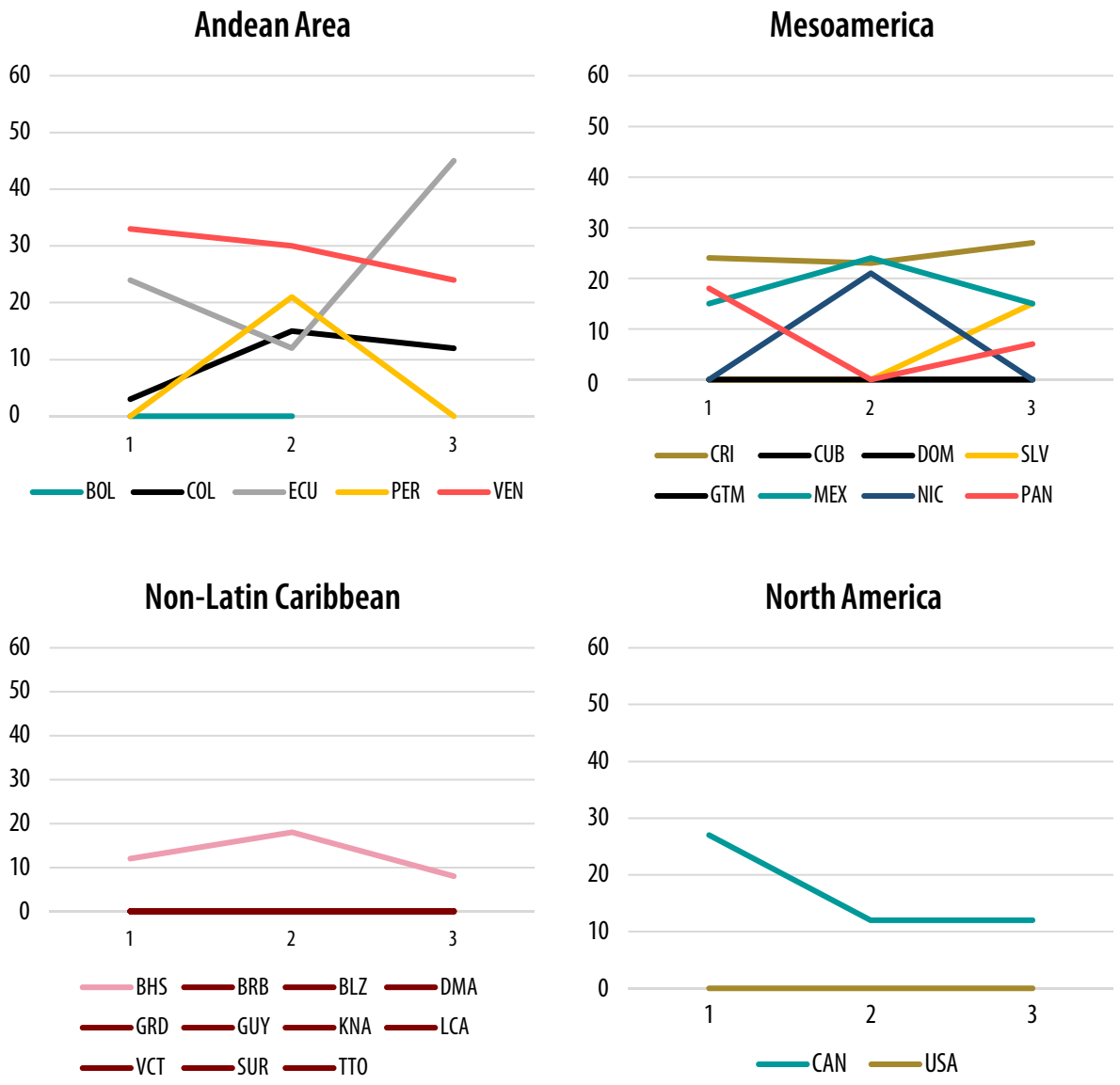
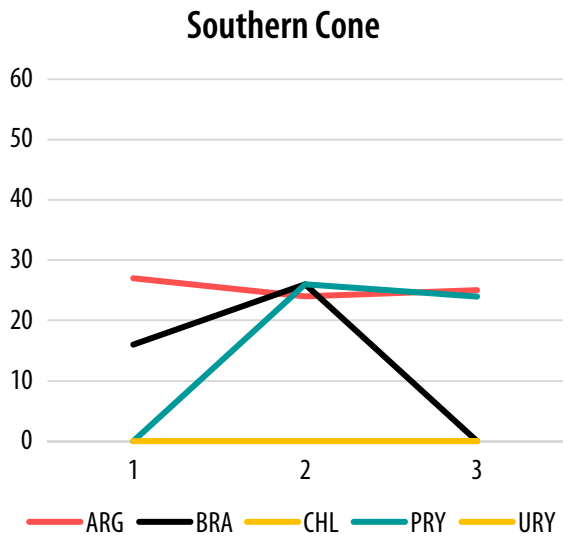


Figure 37. Advertising restrictiveness scores in the Americas by country and sub-region, 2008 to 2016 (Cont.)



NOTE: *Only countries with data for all three years were included in this figure.*
Source: *Calculated using 2016 and historical data from the Global Survey on Alcohol and Health.*

Table 2. Restrictions on alcohol marketing for beer in the Americas in 2016 by country and media platform

Country	National TV	Private or commercial TV	National radio	Local radio	Print media	Billboards	Point of sale	Cinema	Internet	Social media
ARG	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	None	None
ATG	None	None	None	None	None	None	None	None	None	None
BHS	None	None	None	None	None	None	None	None	None	None
BLZ	None	None	None	None	None	None	None	None	None	None
BRA	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation
BRB	None	None	None	None	None	None	None	None	None	None
CAN	Partial ban	Partial ban	Partial ban	Partial ban	None	None	None	None	None	None
CHL	Voluntary / self-regulation	None	Voluntary / self-regulation	Voluntary / self-regulation	None	None	None	None	None	None
COL	Partial ban	Partial ban	Partial ban	Partial ban	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation
CRI	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban
DMA	None	None	None	None	None	None	None	None	None	None
DOM	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation
ECU	Ban	Partial ban	Ban	Ban	Ban	Partial ban	None	Ban	Partial ban	Partial ban
GRD	None	None	None	None	None	None	None	None	None	None
GTM	None	None	None	None	None	None	None	None	None	None
GUY	None	None	None	None	None	None	None	None	None	None
HND	Partial ban	Partial ban	Partial ban	Partial ban	None	None	None	None	None	None
JAM	Partial ban	Partial ban	Partial ban	Partial ban	None	None	None	None	None	None
KNA	None	None	None	None	None	None	None	None	None	None
LCA	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation
MEX	Partial ban	Partial ban	Partial ban	Partial ban	None	None	None	Partial ban	None	None
NIC	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation
PAN	Partial ban	Partial ban	Voluntary / self-regulation	Voluntary / self-regulation	None	None	None	None	None	None
PER	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	None	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation
PRY	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	Partial ban	None	None
SLV	Partial ban	Partial ban	Partial ban	Partial ban	None	None	None	Partial ban	None	None
SUR	None	None	None	None	None	None	None	None	None	None
TTO	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation
URY	None	None	None	None	None	None	None	None	None	None
USA	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation	Voluntary / self-regulation
VCT	None	None	None	None	None	None	None	None	None	None
VEN	Ban	Ban	Ban	Ban	None	None	None	None	None	None

Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Advertising restrictions, Alcohol control policies. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Drink–driving policies and countermeasures

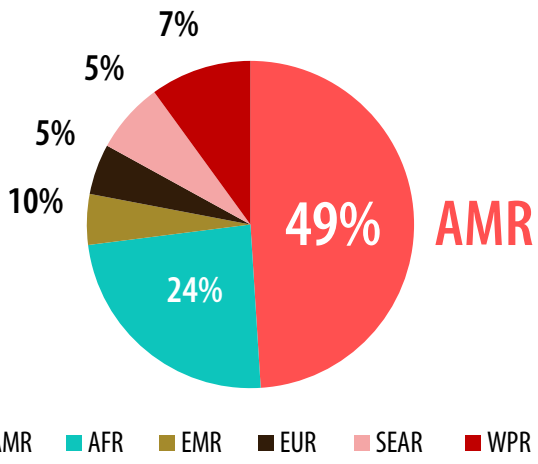
Consuming alcohol before operating a motor vehicle (drink-driving) is a leading and entirely preventable risk factor for road traffic injuries; the risk of crashes increases sharply at blood alcohol levels above 0.05%. This link is particularly important among youth, because road traffic injuries are a leading cause of death for persons aged 15-49 years in the Americas and of all drivers, youth have the highest risk of road traffic crashes (*96*). A universal policy to prevent drink-driving is establishing a maximum **blood alcohol concentration (BAC)** level for the general population. Alcohol can impair the ability to operate motor vehicles safely by slowing drinkers' reflexes and reaction time and reducing physical coordination.

Data on the maximum permissible BAC at the national level for young drivers were available from 34 responding countries, including one country, Mexico, with a subnational policy on BAC. Three countries, Brazil, Paraguay and Uruguay had zero tolerance for young/novice drivers, and 8 countries set the BAC limit for young/novice drivers at 0.05%. Six countries set that limit below 0.05% and ten countries set that limit above 0.05%. In addition, five countries did not have national maximum legal BAC limits when driving a vehicle for the young drivers.

In 2016, the national or subnational minimum legal purchase age for off-premise beer, wine and spirit sales was reported for 30 countries for off-premise sales and for 33 countries on-premise sales. In countries that have minimum legal purchase ages for alcohol, the minimum ages range from 16 years to 21 years, with the most common legal age limit is 18 years for both on-premise (23 countries) and off-premise (24 countries) alcohol purchases. However, three countries (Antigua and Barbuda, Barbados and Grenada) reported having no off-premise age limits.

Lowering BAC limits to 0.05% can decrease the number of road traffic deaths by 6-18% (*156*). A recent meta-analysis found a dose-response association between BAC limits and reductions in road traffic injuries (*157*). Establishing a BAC limit at any level was associated with a 5.0% drop in alcohol-related crashes (*157*). BAC limits that were at least at the 0.08% level were associated with a 9.2% decrease in fatal alcohol-related crashes (157). More restrictive BAC limits at the 0.05% were associated with the biggest decline -- an 11.1% decrease in fatal alcohol-related crashes (*157*).

Figure 38. Percent of countries with BAC limits above 0.05% by WHO Region, 2016



Only eight countries in the Americas (Brazil, Canada, Colombia, Costa Rica, Cuba, Dominican Republic, Paraguay, and Uruguay) follow best practices for drink-driving laws, which is establishing BAC limits at or below the 0.05% level for the general population and BAC limits at or below the 0.02% level for young/novice drivers (*156, 158*). When comparing the BAC limits in the Americas to the other regions, countries with BAC limits above the 0.05% limit are disproportionately located in the Americas. Only 18% of the countries in the world are located in the Americas, but 49% of the countries with BAC limits above 0.05% are located there (Figure 38). The research about the potential benefits of reducing the BAC limit from 0.08% to 0.05% is clear: countries that lowered their BAC limits from 0.08% to 0.05% consistently find reductions in fatal car crashes and car crash injuries ranging from 5% to 15% (*159-162*). For example, if every state in the United States were to decrease the BAC limit to 0.05%, it would save roughly 1,790 lives per year (*157*).

Figure 39 shows the BAC limits for countries for the general population in the Americas. Most countries in North and South America have established BAC limits for the general population. However, less than half (42.4%) of the people who live in the Americas are protected by a BAC limit for the general population set at or below the recommended 0.05% level (Figure 40). In addition, few countries in the Caribbean set BAC limits, and those that do set them at the 0.08% level (i.e., Saint Kitts and Nevis, Saint Lucia, and Trinidad and Tobago).

Figure 39. BAC limit for the general population in the Americas by sub-region and year, 2008-2016

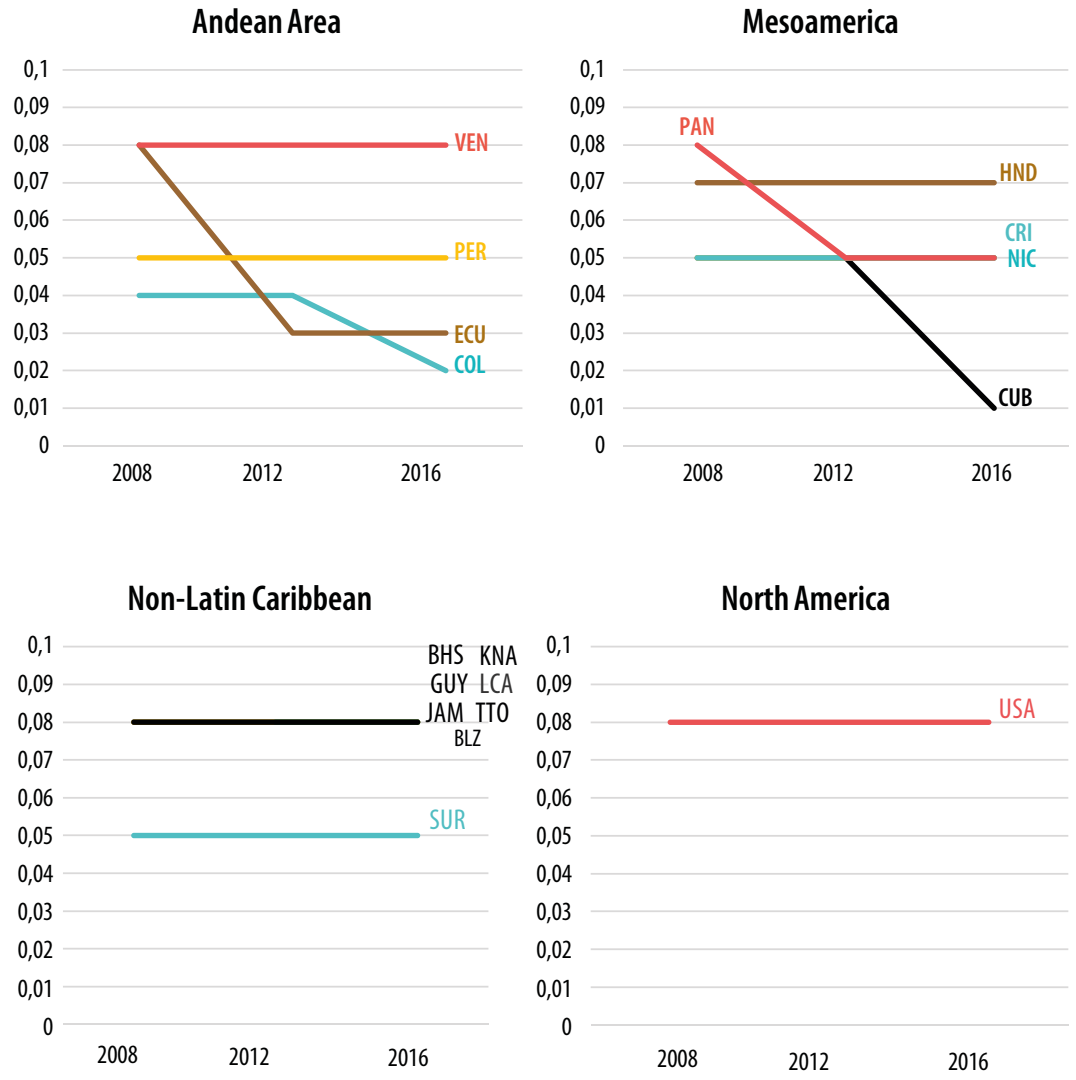
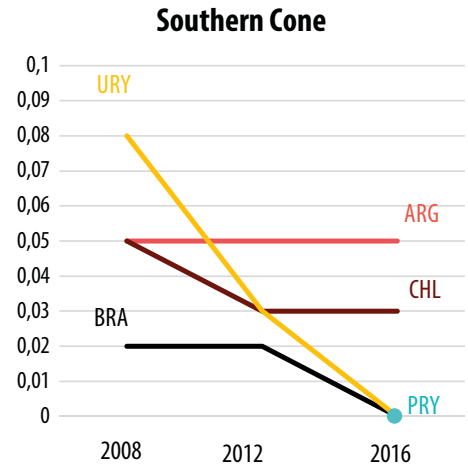


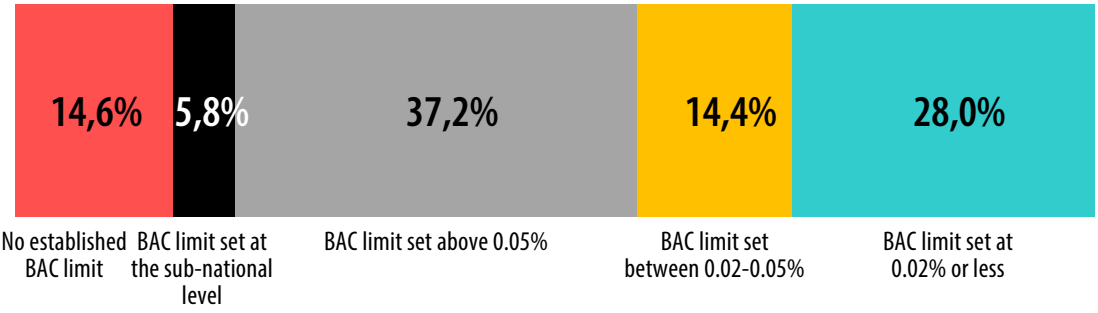
Figure 39. BAC limit for the general population in the Americas by sub-region and year, 2008-2016 (Cont.)



NOT ESTABLISHED: ATG, BOL, BRB, GRD, GTM, HTI, MEX, VCT SUBNATIONAL: CAN

Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Legal BAC limits, Drink driving, Alcohol control policies. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Figure 40. Population coverage of BAC limits for the general population in the Americas, 2016



Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Legal BAC limits, Drink driving, Alcohol control policies. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

Health services' response

As discussed in the previous sections, AUDs are associated with unusually high burden to drinkers and others. AUDs are complex to treat and prevent. Denial is a hallmark of AUDs, so persons who need treatment services often are unaware that they may benefit from them. If the drinker is aware of the need for help, AUDs are stigmatized and AUD treatment is often rare and expensive in many cultures. All of these features further reduce the chances of those who need treatment receiving it.

Treatment coverage is the percentage of persons who need alcohol treatment and receive it, and **treatment gaps** are the difference between the treatment need and treatment coverage. These gaps can arise from lack of alcohol screening, limited treatment capacity, awareness of services provided, or other barriers (e.g., cost, convenience of location). In 2016, two out of five countries in AMR (n=13, 41%) did not know the percentage of persons who needed alcohol treatment and received it in their country, which highlights that lack of data on alcohol screening and referrals at the country level.

Box 8. Building capacity to screen for AUDs in Colombia, Mexico and Peru

Screening and brief intervention (SBI) is an effective individual-level approach that is of critical importance when developing multi-level policy solutions to combat alcohol-related harms. Despite robust evidence of effectiveness, few countries implement SBI widely as a component of routine medical care. The potential benefits from expanding the use of SBI are high: one study estimated that increasing the uptake of SBI to 30% was estimated to yield a 10-15% reduction in the harmful use of alcohol and a 5-14% decline in the incidence of alcohol dependence (*163*). The low utilization rates are often attributed to barriers such as cost of provider training, burden on providers to discuss and make recommendations to patients, and exclusive focus on providers, rather than how health care structures inhibit or encourage SBI uptake.

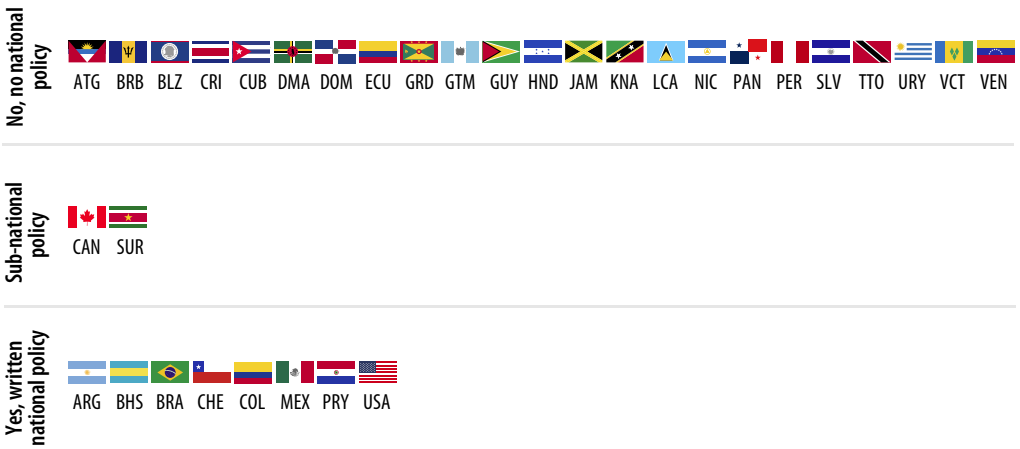
Box 9. The Alcohol Use Disorders Identification Screening Tool in Population Surveys

WHO developed the **Alcohol Use Disorders Identification Test (AUDIT)** to assess the risk posed by a person's alcohol use in a timely and cost-effective way. The purpose is to screen for hazardous and harmful patterns of alcohol consumption and risk of alcohol use disorder. The information can provide immediate feedback and advice on the next steps, as appropriate. The AUDIT is comprised of three domains: hazardous alcohol use, dependence symptoms, and harmful use of alcohol. Each question is scored using a range of 0-4 where larger values indicate more harmful patterns of consumption. After completing the AUDIT, the scores for each item are added, and total scores of 8 or higher are indicative of a risk of health and other problems is the consumption does not change or escalate. A health care provider can use the distribution to discuss the specific pattern of an individual, to how where they fit along the spectrum. However, the AUDIT is not a diagnostic tool, and persons who have a score of a 20+ may or may not meet clinical criteria for an AUD.

Leadership, awareness and commitment

The Americas has some of the lowest percentages of countries with national alcohol policies. Of the 31 countries that regulate alcohol at the national level, only eight (25.8%) had a written national policy in place in 2016 (Figure 41). Roughly three times as many countries (n=23) did not. Overall, 22.9% of countries in the Americas had a written national policy in place, which is substantially lower than other regions such as Europe (71.2%), Western Pacific Region (76.5%), and the South-East Asian Region (55.6%) but is comparable to Africa (29.8%).

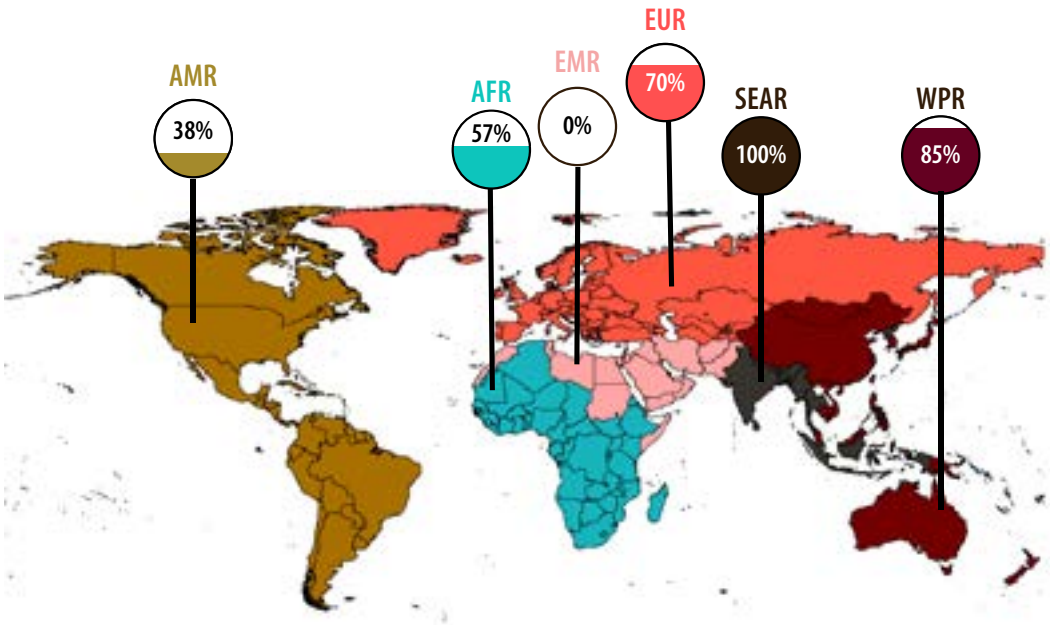
Figure 41. Status of national written alcohol policy in 2016 for countries in the Americas



NOTE: *No information for Bolivia or Haiti.*
Source: *World Health Organization. (2018). Global Information System on Alcohol and Health. Adopted written national policy on alcohol, National policy Alcohol control policies. Available at: http://apps.who.int/gho/data/node.gisah.A1028?lang=en&showonly=GISAH*

A country's priorities may be most evident in their budgets and the areas to which they allocate the most funds. With the exception of the Eastern Mediterranean Region (where many countries have total bans on alcohol use), the Americas has the lowest levels of government funding for alcohol policy development and implementation (Figure 42). As will be discussed in the next section, some alcohol policies such as raising alcohol excise taxes, implementing licensing fees, or establishing fiscal penalties for marketing infractions can help raise money for local governments to offset these funding limitations.

Figure 42. Percent of countries that reported government funding for national alcohol policy implementation by WHO subregion 2016



Source: *2016 Global Survey on Alcohol and Health.*

Box 10. Mexico's National Day Against the Harmful Use of Alcoholic Beverages

Alcohol is a leading contributor to many of the leading causes of death among young adults in Mexico, including road traffic injuries and interpersonal violence. This burden led the state administration and State Commissioner for Protection against Health Risks to declare alcohol prevention a leading priority. One way this commitment materialized was when the Chamber of Deputies dedicated November 15 as a day for awareness of the harms associated with alcohol. This new holiday was celebrated for the first time in 2018, and alcohol awareness activities occurred in all 31 Mexican states (*164*). The celebration included a range of interactive activities, including a march from Durango to La Laguna, educational materials describing the acute and chronic harms of alcohol use, and workshops for youth such as "Zero deaths from alcohol at the wheel" (*165, 166*). Focusing on preventing alcohol-related harms to youth, as the motto for the inaugural event was, "Not a single drink to minors," and activities promoted awareness of the compliance monitoring for underage alcohol sales that are included in the National Strategy for the Prevention of Alcoholic Beverage Consumption among Minors (*166*).

Global Strategy to Prevent the Harmful Use of Alcohol

Based on the premise that harmful use of alcohol is a public health priority, WHO released the **Global Strategy to Reduce the Harmful Use of Alcohol** (hereafter referred to as the "global alcohol strategy"), endorsed by the World Health Assembly, in 2010 (*158*). This strategy defines harmful use of alcohol as "the drinking that causes detrimental health and social consequences for the drinker, the people around the drinker and society at large, as well as patterns of drinking that are associated with increased risk of adverse health consequences" (*158*). This strategy then defined 10 areas for action (Figure 43) to encourage Member States to consider comprehensive approaches to alcohol prevention that span multiple sectors and multiple levels of implementation (*158*).

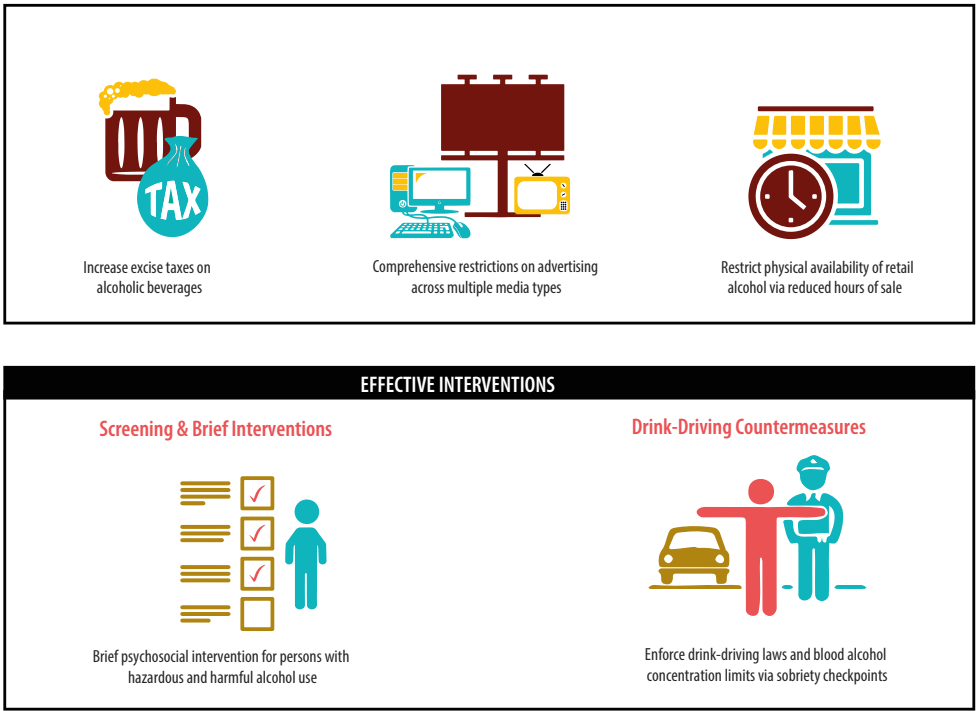
Figure 43. Ten areas for action in the Global strategy to reduce the harmful use of alcohol

Global Action Plan for the Prevention and Control of NCDs 2013-2020

The WHO **Global Action Plan for the Prevention and Control of NCDs 2013-2020** identified harmful alcohol use as a key risk factor for noncommunicable disease (NCD) in 2011 (*167*). This document's substantial contribution was to identify the most cost-effective prevention strategies. It was updated in 2017, and that revision created three categories of alcohol policies and interventions according to their level of effectiveness and cost-effectiveness. **The "best buys"** contained the most effective interventions to reduce alcohol-related harm across populations and cost less than $100 international per disability adjusted life year (DALY) averted (Figure 44). The next category was **effective interventions**, which included strategies that can achieve population-level reductions in alcohol-related harms but cost more than $100 international per DALY averted. Finally, **recommended interventions** included prevention strategies that support implementation of the best buys and effective interventions (*168, 169*).

These classifications have been supported by several international studies released since 2017. For example, a recent analysis that pooled data for over 275,000 youth from 84 countries found that availability, price, and marketing policies had high potential to stop youth from transitioning into drinkers (*170*). In addition, an analysis of 78 low- and middle-income countries found that every $1 USD invested in a best buy will return $9.1 USD by 2030, which is higher than the returns expected for similar investments in tobacco control ($7.4 USD) or prevention of physical inactivity ($2.8 USD) (*171*).[2]

Figure 44. Policies and interventions outlined in the Global action plan for the prevention and control of NCDs in 2013-2020



2 All low- and middle-income countries in the Americas that are WHO Member States were included: ARG, BLZ, BOL, BRA, COL, CRI, CUB, DMA, DOM, ECU, GRD, GTM, GUY, HND, HTI, JAM, LCA, MEX, NIC, PAN, PER, PRY, SLV, SUR, VCT, and VEN.

The Way Forward: SAFER

The most efficient way to make progress toward the global targets for alcohol use is to strategically implement the most effective alcohol policies. In 2018, WHO launched the SAFER Initiative to help countries bring together and implement several recent sets of guidelines and instruments related to alcohol prevention, including the 2010 **Global strategy to reduce the harmful use of alcohol** (Global strategy), the **Global action plan for the prevention and control of noncommunicable diseases 2013-2020** (NCD action plan), and the United Nation's Sustainable Development Goals (SDGs) (*169*).

The SAFER strategies

Recognizing the challenges that countries face throughout the alcohol policy development process, WHO framed the SAFER initiative using three strategies—implement, monitor, and protect—to encourage countries to adopt an unwavering orientation toward protecting the public's health throughout this process. In the first strategy, implementation, encourages countries to consider the five SAFER interventions (described in the following section), many of which require new or revised legislation. During the implementation phase, it is also critical for countries to be forward-thinking about the resources required for the future phases, such as resources devoted to enforcement and surveillance. Successful implementation of the SAFER initiative requires multisectoral collaboration, because alcohol-related harms span diverse sectors and the responsibilities for developing and enforcing regulations will likely fall under different purviews.

After the strategies are implemented, it is critical for countries to conduct routine and robust surveillance of the policy or program implementation and enforcement. The data provided by this monitoring will help assess quality, population coverage, and public awareness and support. WHO recommends that monitoring systems include the following five elements:

- **Policy implementation:** Policy or program implementation in relation to best practices
- **Alcohol surveillance:** Routine monitoring of alcohol consumption and sales
- **Health surveillance:** Surveillance of the alcohol-related morbidity and mortality
- **Social harms:** Surveillance of alcohol-attributable social outcomes (e.g., violence)
- **Regular reporting:** Disseminating the surveillance findings to the public at regular intervals

The most important means of protecting countries' work to implement the SAFER initiative is a staunch reliance on the scientific evidence. As the following section will describe, the evidence supporting which alcohol policies and programs are most effective and cost-effective is clear. Despite this consistent evidence, there is often a tendency for claims that are speculative, unproven or otherwise distracting to enter the alcohol policy arena. Regardless of whether these claims are well-intentioned, the data are clear that the policies and programs in the SAFER initiatives lead to some of the largest public health gains.

While protecting their alcohol prevention work, a special emphasis must be given to the role of the alcohol industry. Industry interference is a challenge to evidence-based alcohol policy development in the Americas and elsewhere. This interference may take many forms, including more overt actions like directly participating in the formulation of national alcohol policies as well as more subvert tactics like corporate social responsibility campaigns that may spread misinformation. Many of the most effective and cost-effective alcohol policies restrict the beverage alcohol industry's commercial activity and may run counter to their financial interests; therefore, the alcohol industry has a financial conflict of interest with alcohol policy development.

The SAFER policies and programs

There are five main policies and programs included in the SAFER initiative. In 2013, the NCD action plan first identified the "best buys," which were the most

effective and cost-effective interventions to reduce alcohol-related harms, particularly in low- and middle-income countries (*169*). The three best buys include effective and cost-effective interventions to reduce alcohol-related harms, particularly in low- and middle-income countries. Four years later, the World Health Assembly sharpened the focus of the best buys and added drink-driving countermeasures.

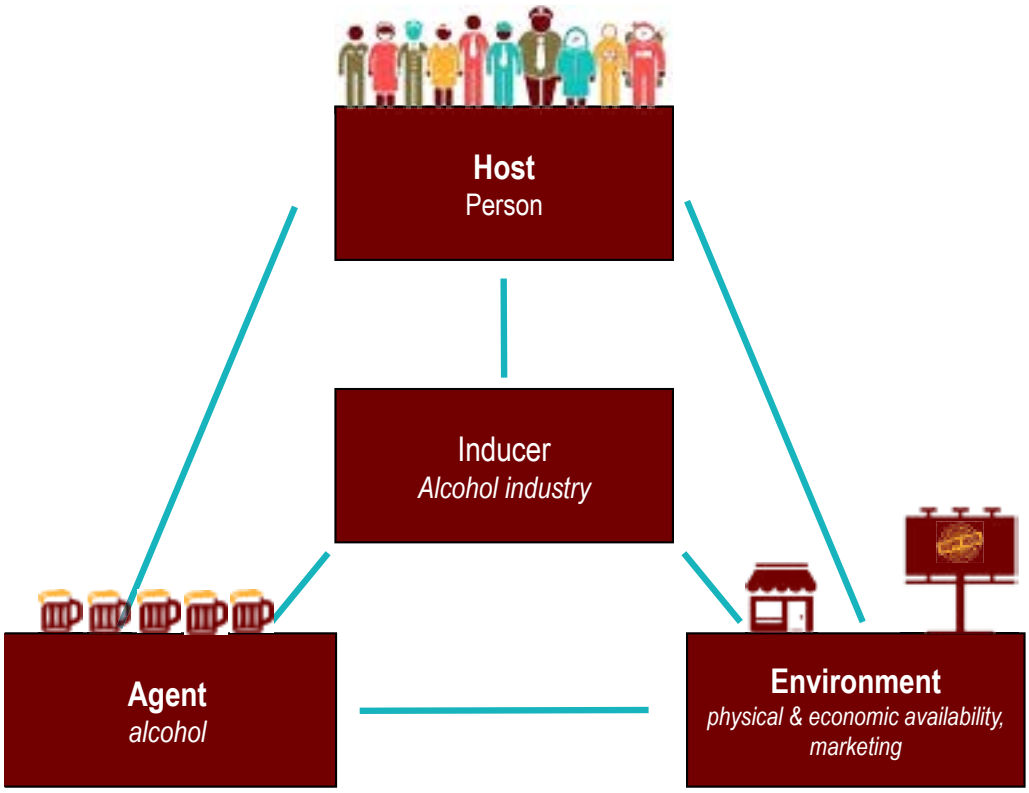
Figure 45. The ***SAFER*** **Action Package**

The alcohol industry

Any comprehensive analysis of the role of alcohol in a society must consider the alcohol industry, because alcohol is a commercial product that is legally produced, distributed, marketed, and sold. The **alcohol industry** includes a heterogeneous group of players who collaborate out of a common interest in the survival and growth of the alcoholic drinks (beer and spirits, and to a lesser extent, wine) market. This means that the alcohol industry has a financial stake in expanding alcohol sales to new markets and consumer groups as well as increasing alcohol consumption among existing markets, which can have downstream consequences for public health.

The notion of **industrial epidemics** can be a helpful analogy to understand the role of the industry in alcohol epidemiology and policy (*172*). The industrial epidemics research uses a modified version of the traditional epidemiological triad to describe the health effects of commercially produced products (Figure 46). In the traditional models, the **host** is the person who is susceptible to disease, and the **environment** is the context that supports the transmission of an **agent** to the host. The two primary modifications for the industrial epidemics frames are to consider agents that are commercial rather than infectious and to replace the notion of **vectors** (i.e., other means of spreading the agent to other hosts) with that of an **inducer** (i.e., the alcohol industry and their means of coordinating hosts, agents, and environments) (*172*).

Figure 46. Corporate epidemiologic triad



Source: *Based on Jahiel, R. I., & Babor, T. F. (2007). Industrial epidemics, public health advocacy and the alcohol industry: lessons from other fields. Addiction, 102(9), 1335-1339.*

Globally, alcohol companies are among the most profitable in the world. Their consolidation has also increased, particularly of beer (global market share increased from 28% in 1979-1980 to 67% in 2017), followed by distilled spirits (from 42.3% to 50.5%) (*173*). This market concentration greatly facilitates marketing (including branding, product design, product placement, sponsorships, stakeholder marketing), marketing expenditures, corporate social responsibility and the influence of the alcohol industry on policy making at national and international levels.

Using this perspective, it can then be seen that the alcohol industry has an interest in shaping the environments in which people make decisions about alcohol use to make them more conducive. When this happens, people are likely to increase their alcohol consumption, and, as a result, levels of chronic disease and injury will also rise. Often, these harms are induced among the most vulnerable (e.g., youth, pregnant women) and among groups who already drink large volumes. This underscores the reason why public health needs to be aware of the ways that the industry is controlling the alcohol environment, particularly as it relates to the best buys: increasing alcohol taxes, reducing physical availability, and restricting marketing. These effective and cost-effective policies run counter to the industry's financial interests. Instead, the alcohol industry often prefers to use a high-risk approaches such as treatment for alcohol dependence and drink-driving countermeasures that affect smaller populations of drinkers (*174*). While these high-risk drinkers represent disproportionately large portions of industry sales, they are smaller in number.

As high-income populations in other regions of the world are starting to drink less alcohol, the industry is looking for ways to replace those markets. Low- and middle-income countries, particularly those located in

the Americas and Africa, where few regulations exist, are attractive candidates (175). More specifically, recruiting current abstainers who live in low- and middle-income countries to become drinkers could produce economic opportunities for the industry. As low- and middle-income countries devote scarce resources to more pressing problems like malnutrition and infectious diseases, alcohol consumption is rising (175). As alcohol use rises, so will the risk of communicable and non-communicable diseases to which alcohol contributes.

Challenges

Figure 47. Problem definition feedback loop

Progress in implementing the global strategy and curbing the epidemic of alcohol-attributable harms in the Americas has been slow, and the challenges persist. There are several common themes that emerge when countries are asked to describe the most pressing challenges. One of the most commonly cited reasons for inaction on alcohol policy is that governments, even those faced with high costs of alcohol-related harms, do not attribute the diverse harms as related to alcohol use. Alcohol use is deeply embedded within the cultures of the Americas, and this can make it harder to define alcohol-related harms using a public health frame. This cultural tolerance toward alcohol use, intoxication, and heavy drinking can facilitate the spread of misinformation, and these cultural dynamics that undermine prevention efforts are made worse in areas with prevalent alcohol marketing and the interference of the alcohol industry. In particular, it can make it harder for decision makers to "see" their role in reducing alcohol-related harms (Figure 47) by implementing population-wide cost effective policies. Instead, many countries continue to adopt the alcohol industry's frame of alcohol-related harms, which defines the problem as coming from high-risk *people* instead of a high-risk *product*. This often leads governments to focus on only the most extreme alcohol-related harms such as alcohol dependence. Alcohol is a leading contributor to NCDs, injuries, and death in the Americas, and it is high unlikely that countries will be able to combat alcohol-related harms solely at the individual level, where individual interventions are more expensive to implement and reductions in alcohol use are often harder to sustain over time. In addition, this failure to identify alcohol's diversity of harms leaves many governments in a situation where the level of financial and human resources allocated to prevent alcohol use and related harms are dwarfed by the alcohol-attributable harms.

This lack of funding often results in a lack of data to describe the magnitude and nature of the problem. These local data are particularly important when advocating for policy change, as data from high-income countries in North America or Europe may be perceived is not valid or applicable to the local situation, and therefore inappropriate to use as a basis for policy decisions. Data on the solutions are also lacking; most countries have little or no local data that can be used to estimate the cost of implementing interventions or the reductions in consumption or harms that are associated with prevention strategies. Regardless of the type of data countries seek, the technology they have is often outdated and may limit the sophistication of what they are able to do.

The interdisciplinary nature of developing and implementing alcohol policies also poses unique challenges in countries with underdeveloped infrastructures. Alcohol's harms span the medical, psychological, and social domains, and effective responses require a coordinated effort that brings together several disciplines. Countries often treat alcohol-related harms like interpersonal vio-

lence, road traffic crashes, cancers, and digestive diseases only once they manifest and one at a time, which is inefficient, especially in settings with limited resources. This can be exacerbated in countries where alcohol is not viewed as a priority, because there is little government commitment to help coordinate across agencies or institutions. When multi-sectoral work it does occur, it is often the case that a clear structure is lost in the shuffle between agencies and there is no central agency responsible for coordinating the work. In 2016, every Member State that reported a national alcohol policy described it as multi-sectoral, and this approach also contains its own challenges and opportunities. While this opens a door to begin a national alcohol policy, several Member States have articulated that when alcohol is integrated into other national policies, the time and consideration devoted to the alcohol portion of the policy is far less than the burden of alcohol-related harms.

The Seventy-second World Health Assembly in May 2019 requested the World Health Organization (WHO) Director-General to "report to the Seventy-third World Health Assembly in 2020, through the Executive Board, on the implementation of the WHO Global strategy to reduce the harmful use of alcohol during the first decade since its endorsement, and the way forward" (decision WHA72.11). During the discussions at the 72nd World Health Assembly, the WHO Director-General committed that "the report will be elaborated in full consultation and engagement with Member States" and requested that this be reflected accordingly in the official records.

Figure 48. Most commonly used words in the Regional Consultation Report for the Americas

In response to decision WHA72.11, a regional consultation with Member States of the Americas was organized on September 19-20 at the Pan American Health Organization (PAHO) Headquarters in Washington D.C., USA. Focal points were appointed by the Ministry of Health of 30 countries to participate at the meeting and to discuss the current situation regarding alcohol and health in the Americas, the progress made at global, regional and na-

tional levels, as well as identify setbacks in the implementation of policies and interventions. They were also asked to make recommendations on how Member States could move forward in reducing the harmful use of alcohol at all levels. This was presented globally at the 146th session of the WHO Executive Board from 3 to 8 February 2020.

Box 11. Feedback on the role of the alcohol industry during the regional consultation

During the regional consultation in 2019, a clear consensus emerged that alcohol industry involvement was impeding alcohol policy development. A common and shared concern was that there were few opportunities within the scope of their role to document this interference. In addition, this interference was allowed to continue because other government officials and the public sector are unaware of the alcohol industry's conflict of interest with public health. In other instances, government officials who were responsible for developing alcohol policy were involved with the alcohol industry and had financial conflicts of interest themselves. As evidence of the consequences of this interference, several participants offered examples of ways that the alcohol environment is currently tilted in the alcohol industry's favor. For example, they pay far less in taxes than the burden of alcohol on society, vulnerable groups are overexposed to alcohol advertising, and marketing messages are not verified for scientific accuracy and can mislead the public and government officials.

In response to this interference, the focal points from Ministries of Health from the Region requested that a set of guidelines be developed that clearly outlines the appropriate roles and responsibilities for the alcohol industry. In addition, they requested that technical support in measuring and determining methods to limit industry interference be provided.

In instances where countries are able to implement evidence-based policies, they often do so on such limited budgets that there are no remaining funds to engage the media to promote public awareness of and support for the new measures. The alcohol industry has also consolidated over recent decades to form a handful of transnational corporations with substantial market shares. These near monopolies mean that the industry often has far more resources with which to lobby for specific policies and/or spread their messages about alcohol use than local member states. This can also tempt Member States to accept industry funding to support their prevention activities.

In addition to financial resources, human resources can also be in short supply. Government administrations may change over relatively short periods of time. This creates opportunities to engage new officials who may be amenable to policy solutions; however, it also means that Member States may need to devote precious resources to continually re-educating government and institutional officials and otherwise building the technical capacity, content area expertise, and vital networks that are lost with administration turnover.

In addition, another commonly cited challenge in the region was that the alcohol industry was too engaged in the policy-making process. As the industry also has an interest in shaping the alcohol environment, they may attempt to partner with civil society and gain a seat at the table for policy-making conversations. This is not appropriate because they do not have the expertise in public policy or public health that is required to lead those discussions. In addition, this inappropriate arrangement can induce financial conflicts of interest, create financial dependence, damage reputations, and serve as branded marketing.

Finally, another common sentiment is that the emphasis on alcohol policy stops short of supporting Member States in enforcing new policies. This is a profound limitation, because policies that are not enforced will not be able to reach their public health potential.

CONCLUSIONS

The scientific evidence of the harms that alcohol causes is clear and compelling. Alcohol plays a causal role in over 200 disease and injury codes. Since the last report summarizing the burden of alcohol in the Americas, the Global Burden of Disease study used data from 195 countries to conclude that there is no safe level of alcohol consumption (4). In addition, researchers carefully dissected the literature on the often-touted benefits of "moderate" alcohol consumption and concluded like it is likely a statistical anomaly—not a real finding *(81, 176)*. Based on this evidence, WHO's position is that any level or pattern of alcohol use carries some risk. There is still a pressing need to educate policy makers about the burden of alcohol use and the potential benefits of alcohol policies and interventions.

Alcohol-attributable consumption and harms remain persistently high. The way that drinkers drink in the Americas, in heavy episodic occasions, is associated with high levels of intoxication-related harms like road traffic injury and interpersonal violence. Consequently, many of the countries in the Americas have some of the highest rates of alcohol-attributable injury anywhere in the world. This report placed special emphasis on alcohol use among youth, because harms to the young can impede economic development. Attention was also paid to vulnerable groups such as pregnant women, indigenous populations, and the economically disadvantaged who often bear a disproportionate burden of alcohol-attributable harms. Alcohol widens inequality gaps and at current trends, alcohol targets related to NCDs and SDG will not be achieved.

To date, the policy response has been woefully inadequate to protect the people who live in the Americas from alcohol-attributable harms both from their drinking and from the drinking of others around them. Assessment of alcohol consumption and risks should be part of all health services for youth and adults, everywhere, and treatment services needs to become available, accessible, affordable and integrated into health systems along with other mental health services, community based and with support groups for recovery. Oftentimes, the countries that have the highest burdens of alcohol-attributable harms have the least restrictive policies in place to prevent and reduce harmful use of alcohol. If the policy environment remains as it is today, projections suggest that alcohol use will continue to rise, and harms will likely surge alongside these increases.

The information presented in this report can be used to understand the current drinking patterns, appreciate the magnitude of the burden of alcohol use, and promote the most effective and cost-effective policies and programs to combat these harms. In addition, there are examples from countries in the region that have successfully implemented evidence-based prevention strategies and could provide assistance or support to countries working on similar approaches. To end the epidemic of alcohol-attributable harms in the Americas, countries will need to be forward-thinking and embrace an interdisciplinary and multisectoral approach, with policy coherence so that public health prevails over commercial interests. Bringing together the data on alcohol use, related harms, the current policy environment, opportunities, and challenges unique to the Americas, the following section outlines a series of recommendations for the Region.

FINAL RECOMMENDATIONS

These final recommendations are based on the objectives established in the PAHO Regional strategy, the WHO Global strategy, the NCD action plan, the SDGs, and the research that has emerged since 2010. Together, these documents outline the best guidance available on how to achieve meaningful and sustainable reductions in alcohol use and related harms.

There is an urgent need to accelerate progress toward preventing alcohol use and related harms. The United Nations established ambitious goals to increase development and health around the globe. The harmful use of alcohol is one of few areas where countries have made little progress, and this is especially true in the Americas. Urgent action is required to change course; otherwise, it is likely that increases in the harmful use of alcohol will continue to undermine global health and development, making it more challenging to meet other targets as well. If nothing changes, approximately another 1.5 million people will die as a result of alcohol use in the Americas between 2020 and 2025.

Raise awareness and commitment

Problem definition is the first step in the public health process. It is also a critical step, because the way that problems are defined naturally suggests which solutions are considered appropriate. This means that campaigns to implement new policies and interventions must begin with a clear problem definition. However, Member States in the Americas are often confronted with two challenges when defining alcohol-related problems: 1) Convincing others that alcohol causes problems, and 2) Presenting the problem using a public health frame. Overcoming these challenges is one of the first steps in breaking the problem definition loop and building political will necessary to change policies and norms. While data for many Member States are limited, this report provides country-specific data on alcohol-attributable morbidity and mortality that can form a foundation to tell the story of how alcohol is harming each country. No two stories of alcohol's harms will be the same; in order to connect with communities and policy makers, each Member State must adapt their alcohol problem statement for their local context.

Member States should define their alcohol-related problems with the policy or intervention in mind. Specifically, they should consider which aspect of the alcohol product or environment the policy/intervention aims to address and center the problem definition around it. Recalling the alcohol industry's common focus of alcohol-related problems as individual problems, most of the time it will be beneficial to define the problem as the product (alcohol) rather than the person (drinker).

After Member States have clearly defined problems, they should improve the knowledge base by collecting new data about alcohol use, harms, policy, or policy support. After collection, findings should be shared widely with the public and decision-makers alike. Policy support data, while less common, often show widespread support for alcohol control policies and can be instrumental in policy change. For example, data from the International Alcohol Control Study data from Peru found majority support for 11 policies related to SAFER (*177*). These policy support data can communicate

the public's will to policymakers, who are often elected by the public. For those Member States who do not have these types of data, they should consider raising awareness about the gaps in knowledge. Routine monitoring of alcohol use, health harms, and social harms are integral to determining the solutions that are most appropriate for specific locations as well as monitoring the implementation of the NCD Action plan.

Member States should also find ways to continue to raise awareness of alcohol-related harms. For example, advances in the research base can also present opportunities to continue the dialogue. The accumulating evidence linking alcohol to cancer has produced several windows of opportunities for countries. First, it is an development issue, because countries in Latin America and the Caribbean are experiencing a double burden of infectious and lifestyle diseases as they develop *(103)*. Secondly, emergent evidence shows that awareness of the link between alcohol and cancer can increase support for alcohol control policies *(178)*. This has led countries in other regions to conduct awareness campaigns and/or establish warning labels about alcohol-related cancer. Given this, countries in other regions used this research as an opportunity to update national guidelines to clearly state that alcohol is a cancer-causing agent and there is no safe level of consumption.

Implement effective policies and interventions

The best buys—alcohol excise taxes, comprehensive marketing restrictions, and limits on the hours of retail alcohol sales—are powerful prevention tools that are underutilized in the Americas. Prioritizing these best practices is essential in resource-limited settings, because they will allow Member States to funnel the limited funds and personnel that are available into the strategies that are most likely to achieve meaningful change. This is because the best buys are all cost-saving or cost-neutral, making them feasible and sustainable in low- and middle-income settings. Establishing and raising alcohol excise taxes is a win-win. They prevent death and disease while simultaneously funding additional prevention strategies or government activities. If the best buys were fully implemented, it could prevent 800,000 premature deaths by 2030 in the Americas (*171*).

It is highly recommended that Member States use the SAFER Initiative and the NCD "best buys" to implement evidence-based solutions and strengthen their current policies. Member States should critically evaluate whether their policies are set at a level that is stringent enough to produce public health benefits. For example, Member States who have alcohol excise taxes that do not reduce the affordability of alcohol, minimum legal purchase ages set below 18 years, and blood alcohol concentration limits set above the recommended 0.05% threshold may be able to meaningfully reduce alcohol use and related harms by revising and updating their legislation.

Focus on equity

The way that alcohol-related harms distribute in society is inequitable, and it is essential that prevention strategies explicitly prioritize equity to counteract these potentially damaging patterns. This report summarized how drinking patterns differ among socio-demographic groups in the Americas, emphasizing high-risk groups like men and youth. In addition, it also examined disparities in harms experienced, which can stem from either risky drinking patterns or the layering and interactions of vulnerabilities (e.g., access to health care) experienced by marginalized groups. Together, these findings imply that countries should consider which potentially vulnerable populations live in their borders and proactively take steps to ensure that those groups have equitable access to policies and interventions as they are designed and implemented. For example, screening and brief interventions are effective in reducing consumption among the general population (*179*), but they can exacerbate disparities if they are only integrated into primary care facilities in areas where everyone does not have equal access to these services (*180*).

It is possible that investing in reducing and preventing alcohol-related disparities could be a more cost-effective strategy. The "alcohol harms paradox" states that low-income drinkers suffer more harms from similar levels of alcohol use. It is the possibility that the converse is also true: marginalized groups may have a more elastic association between consumption and harms such that prevention strategies focused on these groups may reap a greater return on investment by preventing more harms through lower reductions in alcohol use.

At the local level, a focus on equity can be introduced into alcohol prevention work using a social determinants of health framing to determine which group(s) have access to the resources that are needed to be healthy and thrive. WHO defines social determinants of health as, "as the circumstances in which people grow, live, work and age, and the systems put in place to deal with illness. These conditions in which people live and die are, in turn, shaped by political, social and economic forces, and are characterized by the unequal distribution of power, income, goods, and services; unequal access to healthcare, schools, and education; and conditions in work and leisure settings, homes, communities, towns, or cities" (*181*). This alcohol environment, which includes policies that establish parameters for alcohol outlet density, alcohol advertising, and alcohol prices, clearly fits within this definition. Conducting interim or ongoing monitoring of levels of access to the alcohol environment across socio-demographic subgroups can help identify priorities to increase equity.

Attention must also be paid to issues of inequitable protection from risky alcohol environments at the national level in the Americas. Looking across countries, policy change is often the slowest in areas of the Americas that are least likely to have resources to treat alcohol-related harms. Not a single low- or lower-middle-income country in the Americas had a SAFER implementation score that was greater than 50, and none reported having a written national alcohol policy in place in 2016. Although the largest percent of the population drinks in the countries with the highest incomes, the volumes of alcohol consumed by drinkers and rates of alcohol-attributable deaths are highest in lower- and upper middle-income countries. Given the favorable cost-benefit ratios for the best buys and the threats that alcohol poses to sustainable development, these countries have perhaps the most to gain from implementing these evidence-based policies.

Multisectoral action

Alcohol-related harms are a multisectoral problem, and they require a multisector solution. The most effective policies and interventions often emerge when stakeholders from various sectors of the government, research and academia, and civil society join forces to combine their expertise and craft feasible and evidence-based solutions. This broad stakeholder engagement is strategic, as each sector will contribute different expertise and resources, and can ensure overall policy coherence in actions taken, so they complement each other and have a common goal of reducing harmful use of alcohol.

The alcohol industry has a role as producer, distributor, marketer and seller of alcoholic products and need to take measurable steps to contribute to the reduction in harmful use of alcohol. Given their primary commercial interests in selling alcoholic beverages, their participation in the alcohol policy making poses an irreconcilable conflict of interest. Therefore, their position can be heard in public consultations, in a transparent way, and considered as appropriate, by national authorities, without any due influence. Monitoring corporate social responsibility activities of the industry would help identify how they influence social norms and views of the public on alcohol policy and how effective they are in reducing harmful use of alcohol.

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REGIONAL STATUS REPORT ON ALCOHOL AND HEALTH IN THE AMERICAS 2020

This report is designed to complement the WHO's 2018 *Global Status Report on Alcohol and Health* by providing greater detail on the current status on alcohol consumption, harms, barriers, and breakthroughs in the Region of the Americas in relation to alcohol's impact on health and the associated burden of disease.

This is the third regional report dedicated to alcohol and health in the Americas. The information provided is based on country responses to the WHO Global Survey on Alcohol and Health, undertaken in 2016, which informed the WHO Global Report of 2018. Data were reviewed and accepted by each country before the publication of the global report and the information used for the regional report largely relies on the global information system on alcohol and health (GISAH) of the WHO.

The report provides an update on alcohol consumption in the region and each Member State, trends in consumption over time, alcohol-related harms, and current alcohol policies being implemented in each Member State and to what extent they are in line with the WHO global alcohol strategy and regional plan of action. It provides examples of studies done in the Region that were not reported in the WHO Global Status Report. The report discusses gaps and challenges in reducing the harmful use of alcohol and how countries can reverse current trends in a cost-effective and expedited way, particularly if the WHO SAFER technical package is implemented at the national level.

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