World Health Organization

Unrecorded alcohol: what the evidence tells us

Snapshot series on alcohol control policies and practice

Brief 2, 2 July 2021

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Brief at-a-glance

The problem

An estimated 25% of worldwide alcohol consumption is unrecorded, meaning not taxed and is outside the usual system of governmental control, such as home or informally produced alcohol -legal or illegal, smuggled alcohol, surrogate alcohol which is alcohol not intended for human consumption or alcohol obtained through cross-border shopping, which is recorded in a different jurisdiction. In addition to concerns around unregulated availability and generally higher affordability due to the lack of taxes, unrecorded alcohol may contain toxic ingredients such as methanol that could lead to poisoning and even death. However, recent evidence suggests that most of the harm derived from unrecorded alcohol is caused by hazardous drinking patterns and not by its quality. Unrecorded alcohol can undermine the impact of cost-effective alcohol control interventions if not specific measures are taken.

The evidence

Although unrecorded alcohol is often discussed as one crucial challenge when describing the alcohol policy landscape, it includes various subgroups, each of which ranges in importance and harm between countries. The usually cheaper price of this type of alcohol, its appeal to consumers from low socioeconomic status and people with underlying alcohol use disorders, irregular labelling and thus often unknown ethanol percentage by volume and the presence of potentially toxic compounds as well as a complex interplay of these factors is what can make unrecorded alcohol potentially more harmful than regulated alcohol. Although the various dimensions of harm are increasingly better understood, the policy options for regulating unrecorded alcohol require tailoring to a given context in consideration of the cultural and social aspects involved. Recent evidence highlights that to regulate recorded and unrecorded alcohol production and consumption effective measures exist and does not indicate possible substitution effects.

The know-how

Understanding country experiences in developing control policies to contend with unrecorded alcohol can help to inform governments' future policy decisions. Experiences from China, Kenya, and the Russian Federation speak to the types of policies that may be used to curb harm from unrecorded alcohol. While the case of the Pan-American region highlights the need to gather additional information on unrecorded alcohol.

The next steps

Policy- and decision-makers could pursue the development of contextualized policy approaches to curbing the production and consumption of unrecorded alcohol as well as working with other decision-makers on regional approaches that can combat the cross-border implications of policies addressing unrecorded alcohol. Civil society, community-based organizations, researchers and research institutions could focus on moving forward new methods for documenting the rates of production and consumption of unrecorded alcohol in settings where this work has yet to take shape. In addition, researcher and research institutions can work with government policy- and decision-makers evaluate the implementation of policies to address unrecorded alcohol.

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About the series

This Snapshot is part of a series of briefs tackling critical issues related to the determinants driving the acceptability, availability and affordability of alcohol consumption and how it affects people and their communities. The series aims to facilitate evidence and experience-informed conversations on key topics relevant to achieving the Sustainable Development Goals and the noncommunicable diseases targets in the context of the WHO Global Strategy for reducing the harmful use of alcohol and its global action plan. Each brief is the result of a global, multistakeholder conversation convened by the Less Alcohol Unit, part of the WHO Department of Health Promotion. The topics of the series emerged in response to blind spots in the current policy conversations. The approach and length of the Snapshots do not fully describe the complexities of each topic nor do the illustrative country experiences. The series is a conversation-starter rather than normative guidance. Relevant WHO resources are provided to explore the subject in more depth.

The series is intended for a wide audience, including professionals working in public health and local and national alcohol policy focal points, policy-makers, government officials, researchers, civil society groups, consumer associations, the mass media and people new to alcohol research or practice.

What is a health promotion approach to reducing alcohol consumption?

Drinking has multidimensional connotations. Robust and growing evidence demonstrates that cultural, social and religious norms influence alcohol consumption – acceptability, ease of purchase (availability) and price (affordability). Addressing this multidimensional causality chain requires a portfolio of health promotion interventions to moderate the determinants driving alcohol consumption and, in turn, enable populations to increase control over and improve their health to realize their full potential.

Determinants driving the consumption of alcohol

	Acceptability	Availability	Affordability
Public health objectives	Protect consumers	Promote healthier settings	Build resilient societies
Health promotion interventions	Raising awareness, e.g. labelling	Mediating licensing, e.g. outlet density and location, online sales	Increasing prices, excise taxes and moderating other fiscal measures, reducing and ending financial incentives and subsidies
	Banning or comprehensively restricting alcohol marketing, advertising, sponsorships and promotion	Promoting healthy settings and pro-health environment, e.g. schools, stadiums	Tackling unrecorded alcohol
	Adressing commercial determinants and conflict of interests		

How are the briefs developed?

The briefs result from a quick scanning of the recent evidence on the topic, insights from leading experts, consultation with selected countries and discussions that took place during webinars convened to create a platform to match evidence, practice and policies. Each webinar, attended by more than 100 participants, took place over 1.5 hours in English, Russian and Spanish. Between 8 and 10 speakers were invited to participate in each webinar, engaging global experts, officials from governments, academia, civil society and other United Nations agencies. Participants also engaged in the webinar by posting questions, sharing experiences and resources. The snapshot has been reviewed by the respective speakers – the contributors to each brief – to confirm the completeness and accuracy of the synthesis prepared.

Interested in other topics?

Visit the *Less Alcohol webpage* for other briefs in this series and forthcoming webinars. During 2021, topics including alcohol consumption and socioeconomic inequalities, unrecorded alcohol, conflicts of interest, labelling, digital marketing and per capita alcohol consumption have been explored. If you have a suggestion for a topic that has yet to be explored, contact our team at *lessalcohol@who.int.*

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The problem

This section provides a brief overview of why this issue matters to the health of populations and why it is worth further examining within global alcohol policy

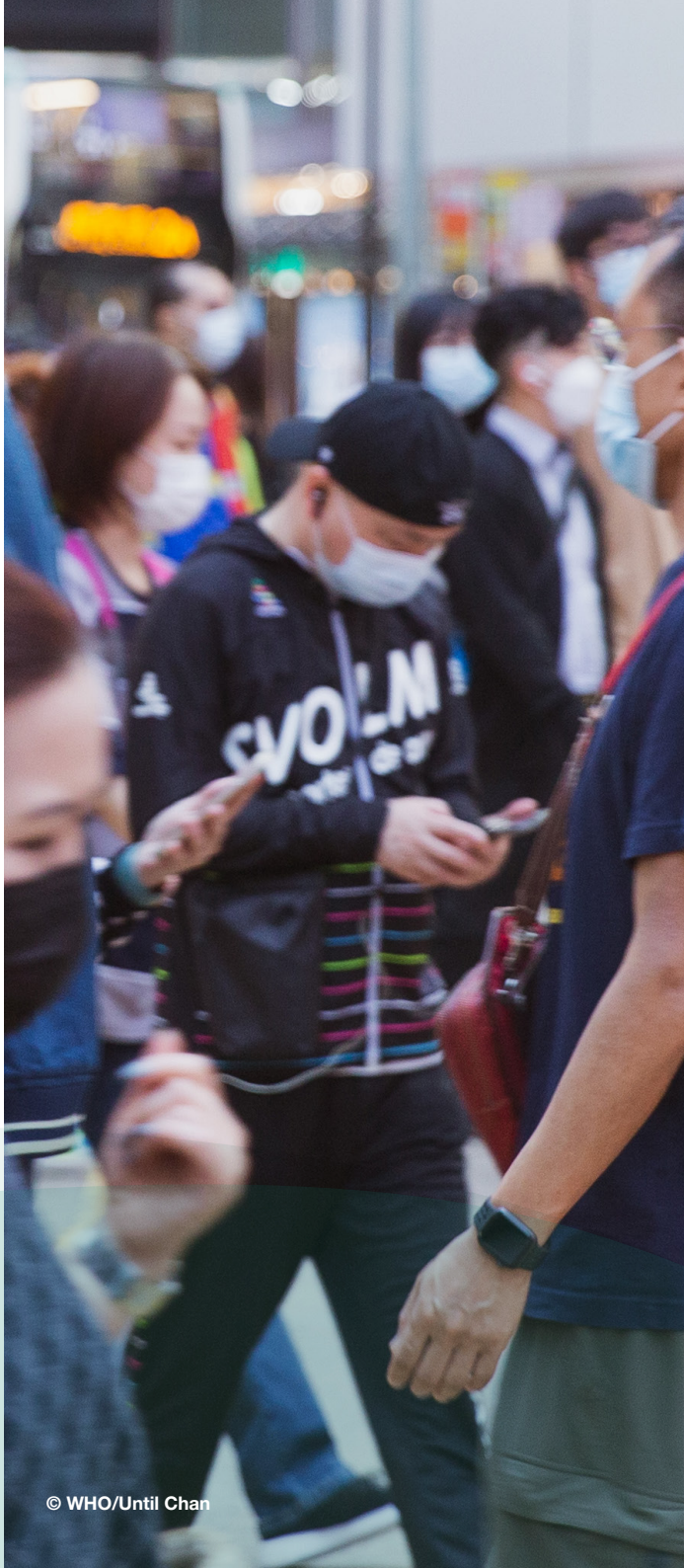
An estimated 25% of worldwide alcohol consumption is unrecorded, meaning not taxed and is outside the usual system of governmental control, such as home or informally produced alcohol -legal or illegal, smuggled alcohol, surrogate alcohol which is alcohol not intended for human consumption or alcohol obtained through cross-border shopping, which is recorded in a different jurisdiction *(1,2)*.

Unrecorded alcohol production is embedded in cultures and traditions around the world and it is shaped by economic development and globalization. In the countries of the former USSR, surrogate alcohol, artisanal spirits and counterfeit industrially produced alcoholic beverages are prevalent and their consumption is rooted in the area's history *(3,4)*. Cultural norms and traditions in countries in sub-Saharan Africa explain the consumption of home-brew alcohol and artisanal distilled beverages *(5,6)*. In some African countries, home production of alcoholic beverages represents the sole source of income for households and is essential to the economic independence and empowerment of women *(7)*. In northern Peru, mothers provide traditional home-brew beverages that sometimes contain alcohol to children as part of the local culture *(8)*. However, recent trends suggest that this homemade alcohol is slowly transitioning to mass production in some countries. Some of the artisanal spirits producers in eastern Africa have grown into enterprises. In rural China, *baijiu* (home-distilled spirit) is now produced in small-factory distillers operating in nearly every town *(9)*. In India, an estimated 50% of the alcohol consumed is illicitly made, including home-brewed liquor, while producing and consuming homemade alcohol is legal in many other countries *(10,2)*. In Finland, Sweden and other northern European countries, a large proportion of unrecorded alcohol is shipped across borders *(11)*. In addition to concerns around unregulated availability and often lower price per unit of ethanol, unrecorded alcohol may contain toxic ingredients such as methanol that could lead to poisoning and even death *(12)*.

However, recent evidence suggests that most of the harm derived from unrecorded alcohol is caused by hazardous drinking patterns and not just by its quality. The usually higher affordability of unrecorded alcohol increases and sustains inequalities in deleterious alcohol-related outcomes because it is often consumed by people of low socioeconomic status, heavy drinkers and people with alcohol use disorders, accelerating the harm attributable to alcohol consumption that they might already experience. Unrecorded alcohol may undermine the impact of cost-effective alcohol control interventions that aim to regulate production and consumption of recorded alcohol *(13)*. Data on unrecorded alcohol can be harder to obtain and to include in estimates of alcohol consumption and alcohol-attributable harm *(14)*. In addition, unrecorded alcohol also affects countries' economies since taxes on the production, import and sale cannot be collected.

What does this snapshot aim to achieve?

This snapshot seeks to shed light on the dimensions of the unrecorded alcohol phenomenon and showcase country practices, their challenges and possible policy responses.



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The evidence

This section provides a summary of what is known about the issue, implementation considerations for different settings, and any gaps in the existing knowledge base

The production and consumption of unrecorded alcohol is a global issue and disproportionately impacts poorer individuals and communities

Unrecorded alcohol accounts for about 25% of global alcohol consumption: between 42% and 44% in low-income countries and 9% and 24% high-income countries (*14*). Unrecorded alcohol is defined as alcohol that is consumed but is not registered in official statistics for sales, production or trade. Although some regions are larger producers and consumers of unrecorded alcohol, global survey data shows that this is a global issue, with countries annually consuming between 0.5 and 3.0 litres of unrecorded alcohol per capita. In addition, the shift to online purchasing is increasing the availability of unrecorded alcoholic beverages and production equipment regardless of the country of origin and escalating the issue at a global level.

Unrecorded alcohol is not homogeneous

Though unrecorded alcohol is often discussed as one challenge when describing the alcohol policy landscape, it is composed of various subgroups, each of which ranges in importance and harm between countries. There are various categories proposed to study unrecorded alcohol[1] *(13)*. One of those is proposed in Table 1. It includes, firstly, legal but unrecorded alcohol products produced in countries in which producing small quantities of alcohol at home, such as home-brewed beer, is legal. Secondly, alcohol products that are recorded but not in the jurisdiction in which it is consumed. This cross-border shopping often takes place in countries in which alcohol is significantly cheaper in one country than in another, such as between Nordic and Baltic states. Thirdly, surrogate alcohol, non-beverage alcohol products that are consumed but not intended for human consumption. These include, for

[1] https://www.who.int/data/gho/indicator-metadata-registry/imr-details/466

Table 1. Overview of different alcoholic beverage categories

Recorded consumption	Unrecorded consumption				
Taxed or otherwise registered alcoholic beverages meant for consumption	Illegal homemade and/or artisanal	Legal but unrecorded alcohol products (homemade or other)	Illegal production: counterfeit or smuggling on a commercial (industrial) scale	Legal and illegal surrogate alcohol: non-beverage alcohol products not officially intended for human consumption	Alcohol products recorded but not in the jurisdiction where consumed
	Moonshine; samogon; wine, beer, and spirits production in countries where it is illegal	Homemade spirits; homebrewed beer; wine products for home consumption	Mainly spirits, but also untaxed beer or wine (e.g., production of alcohol not on the books; 'third shift') and internet sales	Cosmetics (e.g. mouth wash, perfumes); denatured alcohol; automobile products' medicinal compounds	Cross-border shopping; medicinal products for human intake

Source: *(13)*

instance, alcohol-based cosmetic and cleaning products and medicinal compounds. Fourthly, illegal, homemade artisanal products such as fruit wines. Finally, illegal production or smuggling on a commercial scale, including counterfeiting. This final category is typically considered a type of organized crime that includes production in licensed facilities but diverted from legal production to evade taxes and may also be referred to as third-shift alcohol.

The harm each of these subcategories of alcohol produces varies significantly by country. Despite the focus in the literature on poisoning from surrogate alcohol and illegally produced alcohol, it remains relatively rare and accounts for about 5% of unrecorded alcohol-related harm. In contrast, about 95% of harm related to the consumption of unrecorded alcohol stems from increased availability and affordability. The cheaper price of unrecorded alcohol, its appeal to consumers of lower socioeconomic status, heavy drinkers and people with underlying alcohol use disorders, irregular labelling of unregulated contents, unknown strength and usually higher percentage of alcohol by volume compound associated unrecorded alcohol to heavy drinking patterns and explains the disproportioned harm associated with its consumption. Although the various dimensions of harm are increasingly better understood, the policy options for regulating unrecorded alcohol require tailoring to a given context in consideration of the cultural and social aspects involved.

Regional approaches are often needed to control the availability and affordability of alcohol

Given the potential for the effects of policies implemented in one country to carry over to another, policy-makers may want to consider regional approaches. Thus far, the experience of implementing alcohol control policies in countries that share a border has shown that the effects of these policies are not isolated to one market. Policy changes in one country's alcohol market often affect other nearby markets, especially across countries that are part of trade unions or belong to a single market, like the European Union. In Sweden, the largest category of unrecorded alcohol was from travellers' legal purchases from another country *(15)*. Travellers were able to access spirits at approximately 50% that of the price at the Systembolaget, the alcohol monopoly stores *(16).* Through cross-border shopping has traditionally stabilized in the years following a price change, the expansion of unrecorded alcohol sales onto the Internet has the potential to increase cross-border shopping. As a result, policy-makers may want to explore regional policies to reduce the incentives to purchase alcohol, whether recorded or unrecorded, outside the country. In addition, other regional initiatives such as the development of the

European STEPS survey have been critical to understand these cross-country effects and establish reliable data on the consumption and production of unrecorded alcohol.

Reducing harm from unrecorded alcohol consumption requires nuanced policy

Certain categories of unrecorded alcohol have long histories and significance in local cultures. Culture and local norms are part of what informs motivations for production, consumption and sale of unrecorded alcohol and ultimately, its acceptability for use. For example, unrecorded Mexican *pulque*, a traditional fermented drink derived from the agave plant, has been ascribed medicinal properties *(17)* whereas unrecorded alcohol consumption in Kenya is tied to traditional customs and practices. Unrecorded alcohol consumption in Kenya differs by regions, for example Kenyan chang'aa is derived from the distillation of liquor from fermented maize grains, is also a traditional spirit, but the high ethanol content and addition of admixtures of industrial ethanol has become a concern to public health and safety *(18).* Given the relationships between recorded and unrecorded alcohol and between subcategories of alcohol, policy options must avoid imposing solutions that ultimately result in an increase in overall consumption. Although often suggested as a measure to decrease unrecorded alcohol consumption, decreasing excise tax on alcoholic beverages results in surges in the alcohol consumption. For instance, in 2004, Finland decreased alcohol excise tax by one third in the expectation that cross-border shopping will increase significantly after the Baltic countries accessed the European Union. The recorded and unrecorded alcohol consumption increased shortly after the excise tax cut; however, unrecorded alcohol consumption was no longer associated with changes in taxation *(19).* Another example is Belarus, where new inexpensive fortified wines were government-produced while penalties for homebrewing increased to curb unrecorded consumption. These measures significantly reduced the production and consumption on unrecorded alcohol but resulted in a significant increase in recorded alcohol consumption of the wines and total alcohol consumption. In addition, in some countries, the production of unrecorded alcohol is critical to the economic opportunities and empowerment of women, since women tend to comprise most of the people making unrecorded spirits and wine. Putting in place policies that depress the economic activities of these countries without offering suitable economic alternatives can result in additional knock-on effects beyond the harm typically attributed to alcohol.

“Unrecorded alcohol pervades our society. Sometimes it is rooted in culture and linked to income for families, while in other settings it transitions through the systematic production and illicit trade. In both contexts, unrecorded alcohol limits the forces of the economy, deteriorates environments and spoils lives”

Naoko Yamamoto, WHO Assistant Director-General at the webinar Unrecorded alcohol: what the evidence tell us?

Taxation policies may be appropriate in some settings and do not increase the consumption of unrecorded alcohol

A common message provided by members of the alcohol industry and perpetuated by others is that increasing taxation as a policy measure to control alcohol consumption necessarily increases the production and consumption of unrecorded alcohol. However, a recent literature review *(19)* did not confirm this narrative, finding instead that taxation policies may be useful in curbing the consumption of alcohol generally across the population, including the unrecorded alcohol consumption. The review suggests instead that several factors mediate the relationship between the price of recorded alcohol and the consumption of unrecorded alcohol, including the initial level of consumption of unrecorded alcohol in a country, the normalization of unrecorded alcohol in a given setting and the stigmatization of its consumers. These findings suggest that, rather than writing off entire policy measures, a more appropriate response may be to carefully tailor policy approaches to a given country’s context and to develop holistic packages of policies that can mitigate any unintended consequences.

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The know-how

This section provides examples of country experiences that can be used as evidence and inspiration as to what policy approaches may be possible in different settings

Regulating Kenyan *chang'aa*

In Kenya, an estimated 7000 people have died from consuming unrecorded alcohol in the past four years. Homebrewing in Kenya is deeply ingrained in many of the regional cultures in the country, with each having its own type of alcohol produced with crops that are grown in nearby communities. These include coconut, cane sugar, corn and millet. The consumption of this homebrew is closely tied to celebrations including marriage and other ceremonies and varies across the country, with greater consumption in rural and lower-income communities. Low wages have been associated with popularity and acceptance of homebrew and the consumption of surrogate alcohols as individuals seek out inexpensive alcohol *(20)*. Further, the production of this homebrew is an important economic opportunity for many low-income women who sell the product for their livelihood. However, the lack of regulation and quality control in the homebrewing process leads to tainted batches. This results from using contaminated water, spoilt raw materials such as grains contaminated with mycotoxins and, unclean or rusty equipment and additives such as car battery acid, methanol and fertilizers to make the percentage of alcohol by volume higher *(21)*. The many different contextual layers of the production and consumption of homebrew make it an especially pressing and difficult policy problem to tackle.

Policy efforts have been in place since 1897, with restrictions placed on "native intoxicating liquors". More recent efforts have included the Kenya Supplement No. 70 Alcohol Bill and Alcoholic Drinks Control Bill. However, these have largely focused on banning homebrew,

which has proved ineffective and returned to legalization in 2010 *(22)*. In 2014, the Alcoholic Drinks Control Bill included amendments that created an education programme to work on developing policies and research to improve the existing context. In addition, it brought in a homebrew licensing programme that provided brewing kits and included water purification, guidelines on specific ingredients and regular testing of potency and toxicity. Despite the good intentions of this policy, the registration cost is extremely high, significantly limiting the number of individuals who take part *(23)*. Other opportunities for potential intervention include regulating homebrew at the local and county levels rather than at the national level, distribution of methanol detection systems, and using holistic policy approaches to address the unequal economic opportunities for women that continue to drive participation in the unrecorded alcohol market.

Implementing a comprehensive package of alcohol-control policies in the Russian Federation

The Russian Federation has very high rates of consumption of unrecorded alcohol and related harm, including high-levels of alcohol-related psychosis and alcohol-poisoning mortality. The different types of unrecorded alcohol are extremely diverse and therefore require a lot of attention from the government. As early as 2003, minimum unit pricing was implemented for vodka, later expanding to other types of alcoholic beverages. In 2005, a package of holistic alcohol control policies affecting both unrecorded and recorded alcohol were put in place and significantly reduced alcohol consumption, including consumption of various types of unrecorded alcohol. Several packages of alcohol control policies were rolled out between 2005 and 2018, with some of them specifically targeting unrecorded alcohol production. The packages of alcohol control policies included higher taxes on raw ethanol to curb its misuse in the production of illegal spirits as well as surrogates, an automated tracking system at the point of production through a global navigation satellite system (GLONASS) *(24)* and through transportation and at the point of sale through the Unified State Automated Information System to reduce the development of counterfeit or third-shift alcohol, satellite navigation system (*25)*. In addition, minimum unit prices were introduced on all products containing ethyl alcohol, except medicines, and a limit on the

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amount of medicine containing ethyl alcohol that could be sold to a single individual through a given pharmacy were put in place in efforts to discourage surrogate alcohol purchases and use in home distillations. To accompany these approaches, increases in fines and sanctions were put in place throughout the period alongside smaller measures such as requiring producers to register equipment within the nation-wide tracing and tracking system for producing alcohol. Together, these policies ensured that both, recorded and unrecorded alcohol consumption, have substantially decreased, together with strong declines in all-cause mortality as well as mortality from alcohol-attributable causes of deaths, such as alcoholic psychoses and alcohol poisonings *(26)*. In addition, no substitution effects were found after the substantial increases in alcohol excise tax and introduction of minimum prices for alcoholic beverages.

Legal approaches to controlling the consumption and production of unrecorded alcohol in China

In China, homemade alcohol is commonly seen in northern and rural areas, produced notably in time for festivals. Most of this alcohol is rice wine, which is produced from rice or millet, with an ethanol content of between 15-16%. Local governments permit the production of homebrewed alcohol such as rice or paddy wine, as in most cases it is consumed by neighbours and local community members. There is currently no tax for home alcohol produced and sold to family or community members. Given the nature of this type of production, commercial figures do not provide a precise measure of consumption of the amount of alcohol produced. However, results of a survey from five site in China found the 3-month recorded use rate of unrecorded alcoholic beverages, including both home-brewed and counterfeit alcohol, was 7.1% among respondents *(27)*. The study estimated that unrecorded alcoholic beverages account for 15% of total alcohol consumption within the country, however this estimate was made in 2003 and more recent estimates from the WHO place that number closer to 21% *(28)*.

Despite the allowance for the development of home-brewed alcohol, greater concern exists about the use of counterfeit alcohol marketed as popular alcoholic brands. In China, this type of alcohol has serious consequences for the people discovered to be producing these counterfeit commodities. In addition to a significant fine, individuals face suspension

or revocation of their licences. While cases still occur, the introduction of the law on the Rights and Interests of Consumers has deterred its production.

Counterfeit alcohol in the Pan-American Region

There is a relative dearth of information regarding counterfeit alcohol in the Pan-American Region; what is available is quite fragmented *(29)*. Counterfeit alcoholic beverages are those made to resemble recorded products such a spirits and wines. They typically bear the same branding and packaging as the product it is attempting to imitate. The prevalence of counterfeit alcohol is not well-established; however, it is a significant concern worldwide and in the Pan-American Region *(30)*. For example, the Dominican Government declared the problem of the manufacturing and commercialization of contaminated alcoholic beverages as a national security issue *(31)*. This was done in response to the more than 300 deaths the country witnessed since 2020 due to contaminated alcoholic beverages. In response to this problem, and in line with the limited work in the area, greater controls on methanol imports for commercialization and increased traceability of alcohol surrogates were established *(32)*.

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Next steps

This section provides directions to explore to ensure the conversation continues beyond this brief

Tackling the challenges laid out in this brief undoubtedly requires a multi-stakeholder approach with each partner playing to their comparative advantage. Some examples of this are provided below for each researchers and research-organizations and for government policy- and decision-makers. However, those best suited to move forward these next steps will be specific to each setting and may differ by country.

Civil society, community-based organisations, researchers and research institutions

Since relatively little information and data exist on either the consumption or production of unrecorded alcohol and on policy options to address it, the next steps for researchers and research institutions should focus on filling the evidence gaps by:

- developing new methods for documenting the rates of production and consumption of unrecorded alcohol in settings where this work has yet to take shape;
- continuing to evaluate the implementation of policies to address unrecorded alcohol;
- evaluating any effects of alcohol control policies on the consumption and production of unrecorded alcohol;
- advocating for protecting consumer's rights to informed decisions; and
- documenting the development of holistic packages of policies to address the many layers of harm produced through the ongoing production and consumption of unrecorded alcohol.

Policy- and decision-makers

In addition, policy- and decision-makers at both the national and regional levels have their own set of next steps to explore, including:

- enforcing existing legislation around the production and commercialization of unrecorded alcohol;
- developing new locally contextualized policy approaches to curbing the production and consumption of unrecorded alcohol, for example creating agencies to buy unrecorded alcohol, creating an electronic monitoring system for all products with alcohol, introducing more effective and less toxic denaturizing agents, bans on illegal or un-licensed online shops of alcoholic beverages, enforcement of prescriptions and limitations of quantities purchased on medicines containing alcohol;
- exploring the use of regional approaches, including fiscal and trade policies, to combat cross-border implications from policies addressing unrecorded alcohol; and
- ensuring that evaluations of policy approaches include an equity lens and consider consequences of new policies on women.

Takeaway messages

1. About 25% of worldwide alcohol consumption is unrecorded.
2. The production and consumption of unrecorded alcohol is a global issue and disproportionately impacts poorer individuals and communities.
3. Unrecorded alcohol can undermine the impact of cost-effective alcohol control interventions.
4. Reducing harm from unrecorded alcohol consumption requires nuanced policy and regional approaches are often needed to control the availability and affordability of alcohol.
5. Policy options need to be locally contextualized and account for gender and economic aspects linked to the production and consumption of unrecorded alcohol.
6. Taxation policies may be appropriate in some settings and do not increase unrecorded alcohol consumption.
7. There is a need to address the existing evidence gaps on the production and consumption of unrecorded alcohol.
8. Unrecorded alcohol may contain toxic ingredients such as methanol that could lead to poisoning and even death.

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