

Unrecorded and illicit alcohol

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Introduction

The EC report, *Alcohol in Europe. A public health perspective* (Anderson & Baumberg, 2006), considered unrecorded alcohol as a dimension of the economic and public health impact of alcohol in Europe. Based on Hvalkof & Anderson (1995), the report defined unrecorded alcohol consumption as “alcohol consumption which is not reflected in official statistics on alcohol consumption”.

Although unrecorded consumption is by its nature difficult to measure, WHO figures (Rehm et al., 2004) show that illicit and cross-border consumptions seem to be highest in eastern Europe (particularly the Baltic countries, Bulgaria and Slovenia). Based on a tentative estimate of trends in unrecorded consumption, such consumption has been increasing since the mid-1970s in the Nordic countries and the United Kingdom while remaining stable elsewhere in the countries belonging to the EU before May 2004 (Leifman, 2001). No information on trends was available in the countries joining the EU in May 2004.

The amount of unrecorded consumption of alcohol in the EU is currently about 13% of all alcohol consumed, but with marked differences between the European countries.

The following problems related to unrecorded and illicit alcohol currently occur in the EU:

- illegal production, tax fraud, counterfeiting and smuggling of alcoholic beverages leads to loss of tax income for governments, to a distortion of competition leading to loss of income for the honest trade, and to deception of the consumer if such products are sold as being legally produced;
- surrogate alcohol (alcohol not originally intended for human consumption) may additionally pose health risks due to toxic denaturants or additives (for example, in cosmetic alcohol);
- the large-scale marketing of illegal or surrogate alcohol may be interconnected with organized crime;
- cross-border shopping in the Nordic countries may undermine national alcohol policy (particularly if this occurs on a larger scale including (private) sale to others);
- home production of wine, beer and spirits may occur (depending on country, type of alcohol or annual production amount, this may be legal or illegal, registered or not registered);
- all these forms of unrecorded alcohol (except of cross-border shopping and registered home production) may pose a hazard for the consumer due to a lack of control by EU production hygiene regulations and of compliance with EU regulations regarding product quality and safety (for example, undetected methanol contents may lead to fatal poisoning).

Regarding health outcomes, no unique effects of unrecorded alcohol were pointed out other than an association with anomalously high rates of liver cirrhosis in Hungary, Romania and Slovenia. It was speculated that aliphatic alcohol congeners (so-called higher alcohols) arising from homemade spirits increase the risk of liver cirrhosis (Szücs et al., 2005).

Regarding the economic impact, the major problem was thought to be smuggling and tax fraud. Such illegal trade occurs, for example, by diverting goods that are held in duty suspension (alcoholic beverages within the EU may move in duty suspension where the tax is only paid when and where the goods are released for consumption). The fraud occurs when the goods are illegally diverted from their (low-tax) claimed destination to a new (high-tax) one. While it is difficult to obtain reliable statistics on illicit trade, the European High Level Group on Fraud has estimated that €1.5 billion was lost to alcohol fraud in 1996. The level of governmental enforcement is obviously a factor affecting the level of smuggling and fraudulent activity.

As well as smuggling, there may be tax losses or shifts between countries via cross-border shopping, especially when there are large price differentials across small distances such as have occurred in the Nordic countries. Trends in legitimate cross-border shopping were on the rise as a result of the relaxation of travellers' allowances for intra-EU purchases.

Apart from the need for improved enforcement against smuggling, the report provided no policy options specific to the other types of unrecorded alcohol (such as home production). However, it was pointed out that further research would need unrecorded consumption to be measured, particularly in the countries joining the EU in May 2004.

Updated evidence

In 2009, the Regional Office ([WHO Regional Office for Europe, 2009](#)) provided an update on the effectiveness and cost-effectiveness of interventions to reduce alcohol-related harm (Table 1). The book considered unrecorded alcohol in more detail than did [Anderson & Baumberg \(2006\)](#), including a chapter dedicated to the reduction of the public health impact of unrecorded alcohol. First and foremost, the book provided an updated definition of unrecorded alcohol (see Box 1). Further details about definition and examples are provided in [Lachenmeier, Gmel & Rehm \(in press\)](#).

In order to combat smuggling, illegal trade and diversion fraud, which are believed to have increased in some EU member states, the EC and member states have taken some initiatives, including the adoption of a Commission Recommendation concerning warehouse-keepers, and the computerization of the movement and surveillance system of excisable products.

In settings with higher levels of unrecorded production and consumption, increasing the proportion of consumption that is taxed may represent a more effective pricing policy than a simple increase in excise tax, which may only encourage further illegal production, smuggling and cross-border shopping ([WHO Regional Office for Europe, 2009](#)). As no data on the full extent of smuggled alcohol are available, no evidence-based research about the effectiveness and cost-effectiveness of these measures is currently available.

While smuggled alcohol (especially from diversion fraud) will most likely be of similar quality to legally traded alcohol, the [WHO Regional Office for Europe \(2009\)](#) pointed out that surrogate and home-produced alcohol could be more detrimental to health due to contamination with substances added either as a denaturant (methanol) or flavouring (coumarin in cosmetic alcohol) or inadvertently introduced during home-production (ethyl carbamate or lead). The foremost problem from these may be methanol, which has led to several outbreaks of acute poisoning in the past ([Lachenmeier, Rehm & Gmel, 2007](#)). An effective policy measure to reduce methanol-

Table 1. An updated evidence base on unrecorded alcohol

Type of unrecorded alcohol	Policy option	Reference
All	Europe-wide tax stamps and mechanisms to track the movements of all alcohol products in the distribution chain, including effective enforcement of laws, should be introduced.	WHO Regional Office for Europe (2009); Babor et al. (2010)
All	In countries with high levels of unrecorded production and consumption, increasing the proportion of consumption that is taxed could be more effective than a simple increase in excise taxes.	Babor et al. (2010)
Cross-border trade	Lowering tax rates on alcohol to offset cross-border trade or an illicit market in alcohol can bring the risk of extra alcohol-related harm.	WHO Regional Office for Europe (2009)
Smuggled alcohol	Producers and retailers could commit themselves to sharing intelligence and knowledge of illegally traded and illicit alcohol.	WHO Regional Office for Europe (2009)
Surrogate alcohol	The use of methanol or methanol-containing products should be disallowed as denaturing agents.	WHO Regional Office for Europe (2009)
Surrogate alcohol	The use of substances with unfavourable toxic profile if consumed (such as polyhexamethyleneguanidine hydrochloride (PHMG) or coumarin) should be disallowed in consumer products.	Lachenmeier, Taylor & Rehm (2011)
Surrogate alcohol	Surrogate alcohols could be treated with bittering agents to avoid consumption.	WHO Regional Office for Europe (2009)
Medicinal alcohol	Rigorous controls should be introduced on the sale of medicinal alcohol and only small container sizes permitted.	WHO Regional Office for Europe (2009)
Home production	Financial incentives could be offered to the producers for registration and quality control.	Lachenmeier, Taylor & Rehm (2011)

Box 1. Definition of unrecorded alcohol

Unrecorded alcohol is:

- home-made;
- illegally produced; or
- smuggled alcohol products; as well as
- surrogate alcohol that is not officially intended for human consumption (mouthwash, perfumes and eau-de-colognes).

Source: WHO Regional Office for Europe, 2009.

attributable morbidity and mortality is to disallow the use of methanol (or methanol-containing wood alcohol) as a denaturing agent, as is the case in some EU countries (European Commission, 1993).

Recent research has shown that fears about the toxicity of unrecorded alcohol are mostly exaggerated (Rehm, Kanteres & Lachenmeier, 2010). For example, quantitative risk comparisons have shown that the potency of ethanol for liver toxicity is at least 5000-fold higher than that of ethyl carbamate (Lachenmeier, Kanteres & Rehm, 2011). Exposure to higher levels of alcohol from home-produced spirits also does not exceed toxicological thresholds and cannot explain the high rates of liver cirrhosis in Hungary, Romania and Slovenia mentioned above (Lachenmeier, Haupt & Schulz, 2008). Rather than by alcohol quality, the liver cirrhosis rates could be as well explained by a higher alcoholic strength of the unrecorded alcohol consumed, problematic drinking patterns, lower socioeconomic status and poor health status and the interaction effect of these factors (Rehm, Kanteres & Lachenmeier, 2010).

A large industry-financed study in the Russian Federation was also not able to find substantial differences in toxicity between home-produced and commercial spirits (Nuzhnyi, 2004). The exception may be the occurrence of PHMG, which was associated with an outbreak of acute cholestatic liver injury in the Russian Federation connected to the consumption of surrogate alcohol (Ostapenko et al., 2011). The alcohol that was consumed was a liquid for indoor disinfection containing PHMG as an antiseptic compound.

The evidence base on policy measures regarding unrecorded alcohol has recently been reviewed (Lachenmeier, Taylor & Rehm, 2011). Besides the policy options discussed by the Regional Office (WHO Regional Office for Europe, 2009) and Babor et al. (2010), the review article (Lachenmeier, Taylor & Rehm, 2011) provides a detailed discussion regarding small-scale artisanal home production of alcohol. On the basis of historic examples from western Europe, the authors concluded that incentive-based systems (intended to bring home production under state control) probably work better than prohibiting home production, which is difficult to enforce.

Influence of price policies on the informal market

The disadvantage of pricing policies is that the informal or illicit market for alcohol in some countries can complicate policy in this area by shifting consumption to unrecorded beverages (Babor et al., 2010). Thus, the measures discussed in this paper are needed concomitantly in a comprehensive alcohol policy approach. The alcohol industry regularly lobbies against tax increases with clearly exaggerated fears about the public health impact of unrecorded alcohol (Lachenmeier & Rehm, 2009). There is also evidence that there is never a complete substitution between beverage types following price changes (Babor et al., 2010). Nevertheless, it must be mentioned that alcohol policy science provides comparably weak evidence as to the effectiveness of measures against unrecorded alcohol in general, and of measures against substitution when pricing and taxation are being adjusted in particular (Lachenmeier, Taylor & Rehm, 2011; Babor et al., 2010).

Conclusions for practice and policy

It was already known that the chemical composition of unrecorded alcohol is unlikely to pose a substantial health hazard beyond the effects of ethanol (WHO Regional Office for Europe, 2009; Lachenmeier et al., 2011), except in the rare cases (especially in the EU) of methanol poisoning (Lachenmeier, Rehm & Gmel, 2007).

The current state of research shows that the surplus health hazards of unrecorded alcohol predominantly arise from: (i) a higher potential intake of ethanol compared to the same volume of commercial alcohol, because unrecorded alcohol is typically higher in alcoholic strength; (ii) a higher potential intake of ethanol, as unrecorded alcohol is cheaper than recorded alcohol; and (iii) anecdotal evidence that the patterns of drinking could be more detrimental for unrecorded than for recorded consumption.

Research gaps

The first step to address unrecorded alcohol is to provide better estimates of the size of the market and of measurement of the amount of consumption (Anderson & Baumberg, 2006).

As the policy measures largely depend on the type of unrecorded alcohol (for example, home production requires different measures to those needed for large-scale smuggling), insight into a country- or region-specific distribution of consumption between the categories of unrecorded

alcohol is also required. Reliable consumption data over time are also required to provide adequate monitoring of the effectiveness of policy measures.

Conclusions

The following conclusions should be helpful for policy and practice.

- Unrecorded alcohol consumption is highest in eastern Europe, particularly the Baltic countries, Bulgaria and Slovenia.
- The major economic impact comes from losses due to smuggling and tax fraud. The level of illegal trade and smuggling predominantly depends on the level of governmental enforcement.
- Especially in settings with higher levels of unrecorded production and consumption, increasing the proportion of consumption that is taxed may represent a more effective pricing policy than simple increase in excise tax.
- The health effects and toxicity of unrecorded alcohol were found to be very similar to commercial alcohol, predominantly caused by ethanol itself. The major problem is certainly that unrecorded spirits are often sold at higher alcoholic strength (>45% vol) but for half the price of legal beverages, possibly leading to more detrimental patterns of drinking and overproportionate health hazards.
- Overall in the EU, the health risks from unrecorded alcohol are not much greater than would be true for an equivalent amount of recorded alcohol.
- To improve the knowledge base about unrecorded alcohol, better estimates of the size of the market and of the amount of consumption need to be provided. Insight into the distribution of consumption between the categories of unrecorded alcohol would be also required to provide a targeted country or region-specific policy response.

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