



FEDERAL RESEARCH PROGRAMME ON DRUGS

SUMMARY

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Contract - DR/94/SUBOD

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SUMMARY OF RESULTS

The "Improved monitoring of the disease burden attributable to substance use (SUBOD)" project aims to enhance and establish a routine system for monitoring the health and economic impact of tobacco and alcohol use in Belgium. The project employs a structured approach, organized into six work packages (WPs) to ensure a systematic and integrated analysis. WP1 focuses on the appraisal and modeling of substance use prevalence, WP2 synthesizes evidence on the associations between risk factors and diseases, WP3 quantifies the health and economic burden, WP4 ensures project coordination and reporting, WP5 manages data governance and integration, and WP6 facilitates the dissemination and application of findings. The SUBOD project addresses three key dimensions: data quality and monitoring, methodological refinement, and policy translation.

To achieve these goals, the project aims to assess (1) the availability and reliability of data sources on tobacco and alcohol consumption and sales in Belgium, (2) perform a scoping review of relative risks for tobacco and alcohol use and their associated diseases, and (3) extend the Belgian national burden of disease study to include additional causally associated health outcomes. This approach will allow for a comprehensive quantification of the burden of tobacco and alcohol use in terms of attributable deaths, Years of Life Lost (YLL), Disability-Adjusted Life Years (DALY), and economic costs, disaggregated by age, sex, region, and year.

In terms of data appraisal, four data sources were critically evaluated for their reliability, international comparability, and consistency over time. These sources provide essential insights into the patterns of substance use in Belgium, including the Belgian Health Interview Survey (HIS), which has been a crucial source of data on self-reported tobacco use for over 25 years and tobacco sales data for 40 years. The HIS provides a nationally representative sample and includes key variables necessary for estimating the attributable burden of disease, such as the number of smokers, former smokers, never smokers, cigarettes per day, pack-years, and time since quitting for former smokers. Despite its strengths, the HIS is not without limitations, including its five-year frequency and potential biases in survey responses, which can result in underestimation of substance use. Nonetheless, it remains the most suitable source for tobacco data, offering the required level of detail to support the integration of findings into Belgium's National Burden of Disease study (BeBOD).

Similarly, for alcohol consumption, the HIS and total Alcohol Per Capita Consumption (APC) were identified as the most suitable sources. The HIS provides data on drinking categories, while the APC gives estimates of consumption among current drinkers. However, these data sources have limitations, such as underreporting, the absence of certain indicators in every HIS wave (e.g., former drinkers), and potential non-recall bias in survey data. To address these limitations, the SUBOD project combines APC with HIS data, using survey information to estimate the distribution of alcohol consumption by age, sex, and region. This allows for the allocation of national APC estimates across these demographic groups, providing a more detailed assessment of alcohol consumption and its associated burden.

Using the HIS data, we developed an annual time series in tobacco use in Belgium by developing a modeling approach to project consumption from 2013 to 2040. The adoption of the Inter-federal Strategy 2022-2028 for a Tobacco-Free Generation aims to reduce smoking among the general population, particularly among young people aged 15-24 years. The strategy sets ambitious targets, including reducing the prevalence of daily smokers to 10% by 2028 and 5% by 2040, and reducing

smoking initiation rates to nearly 0% by 2040. However, current trends suggest that Belgium is not on track to meet these targets without additional policy interventions. Projections indicate that the prevalence of daily smoking will likely remain above 10% until 2040. There are also notable disparities in smoking rates based on educational attainment, with individuals with higher education levels showing a more rapid decline in smoking rates.

Regarding the health burden of tobacco, smoking was responsible for 9,362 deaths in Belgium in 2021, accounting for 8.3% of all deaths. The leading causes of tobacco-related mortality were lung cancer, chronic obstructive pulmonary disease (COPD), and ischemic heart disease. The burden of tobacco-related mortality was higher in men than in women and varied across regions, with the highest rates observed in the Walloon Region. Despite a general decline in smoking-related deaths since 2013, regional differences persist, and further efforts are needed to reduce the disease burden associated with smoking.

The global cost of smoking was also evaluated, with a mean total healthcare cost estimated at €2,320 per capita. Former and daily smokers incurred the highest healthcare costs, with former smokers having an even higher per capita cost than daily smokers. In 2018, the national cost for daily smokers was estimated to be over €533 million.

Turning to alcohol consumption, modeling trends from 2013 to 2040 show that the average alcohol consumption is expected to increase in Belgium, with men consistently exhibiting higher consumption levels than women.

Regarding alcohol-related deaths in 2021, we found that the use of alcohol was responsible for 4,022 deaths (3.6% of all deaths that year), with the majority of deaths occurring in men (71%) and in people aged 65-84 years. The main causes of alcohol-attributable mortality were cirrhosis of the liver, alcohol use disorders, and colorectal cancer. Significant differences were observed in the specific causes of death between men and women, with breast cancer being the leading cause for women and cirrhosis of the liver for men. The increasing trend in alcohol-attributable mortality rates across regions underscores the need for effective interventions.

Looking at the cost of alcohol, the mean total healthcare cost for alcohol was estimated at €2,500 per capita. Stratified for alcohol use, the results indicate that the highest costs were found for former drinkers (€4,600 per capita per year). In the most complete model, a lower cost was found for current drinkers (€-470; $P=0.002$). Despite this, a higher cost was found for former alcohol users compared with alcohol abstainers. The adjusted mean attributable cost for former drinkers was estimated at €889. Taking into account that 7% of the Belgian population were former drinkers in 2018, the national cost for former drinkers equates to €711,288,900.

RECOMMENDATIONS

Based on the findings from the SUBOD project, we outline a series of policy recommendations. These recommendations were shaped through discussions with our follow-up committee, representing Belgium's public health sector. For each theme, we summarize the supporting key findings and their relevance to the study. The recommendations are categorized into five key themes:

1. **SUSTAIN:** Maintain and strengthen the developed monitoring framework
2. **IMPROVE:** Address current data gaps in the monitoring of substance use
3. **EXPAND:** Extend the monitoring framework beyond alcohol and tobacco use
4. **ACT:** Strengthen and improve existing policies, regulation, and health literacy while limiting industry interference
5. **IMPACT:** Set up mechanisms to go from estimates to policy

1. SUSTAIN — Maintain and strengthen the developed monitoring framework

Maintaining and strengthening the substance use monitoring framework in Belgium is essential to support effective, data-driven public health policies. Accurate, consistent, and timely data, particularly on tobacco and alcohol use, are critical for tracking trends, evaluating past interventions, and guiding resource allocation. The existing time series from 2013–2021, based primarily on the HIS, already serves as a valuable baseline for monitoring tobacco- and alcohol-related mortality. However, improvements are needed to ensure the system remains responsive to changing consumption patterns and emerging public health challenges. Indeed, currently, the HIS is conducted every 4–5 years (Demarest et al., 2018). While this long-standing consistency allows for robust trend analysis, transitioning to more frequent data collection, potentially on an annual basis, could enable more timely tracking of substance use behaviors. For example, inviting participants each year to report on selected indicators may provide quicker insights and more timely and accurate data to support policy evaluation and trend assessment, though such a change would require careful calibration to preserve comparability with past waves.

Improving the monitoring framework also involves enhancing its ability to detect emerging risks, such as shifts in use among young people or the rise of dual use (e.g., smoking and vaping), and addressing persistent socioeconomic inequalities in substance use and its consequences. Regular assessments of the effectiveness of prevention and cessation programs, particularly among vulnerable groups, should be integrated into routine monitoring efforts.

Integration of the monitoring framework within the BeBOD study offers a sustainable path forward, embedding substance use monitoring into Belgium's broader national health data strategy. This integration reinforces the role of monitoring as a foundational tool for evidence-based action and long-term health planning. Moreover, using data from global initiatives, such as the Global Burden of Disease Study, can offer valuable insights into the broader impact of tobacco and alcohol on health. The monitoring framework should also investigate the consumption of alternative tobacco products, such as e-cigarettes and nicotine pouches, and incorporate previous binge drinking behaviours. Understanding the timing of substance use, when individuals begin, the duration of intensive use, and the timing of cessation efforts, will deepen the analysis.

To further improve the framework, greater attention should be paid to socioeconomic disparities and emerging patterns of substance use, such as dual use of tobacco and vaping. These enhancements will support more comprehensive, data-driven public health responses that are equitable and responsive to population needs.

2. IMPROVE — Address current data gaps in the monitoring of the burden of tobacco and alcohol use

Accurate and timely data are essential for shaping effective public health policies, particularly concerning tobacco and alcohol use. By assessing the burden of tobacco and alcohol use in Belgium, the SUBOD project has identified some gaps and limitations in the data inputs required for the calculations. Indeed, one major challenge with the method we are using is the reliance on mortality data, which often suffers from delays in determining the causes of death. In addition, there is underexposure to indirect mortality caused by alcohol, such as cancers, chronic diseases, and accidents, deaths that are often underestimated due to the reliance on relative risk estimates or incomplete observed data (Rehm et al., 2021; Rehm & Shield, 2014). This statistical lag can obscure the real-time impact of tobacco and alcohol on public health. Furthermore, there is a notable lack of comprehensive exposure data for youth under the age of 15, leaving a significant gap in our understanding of substance use patterns in this vulnerable population. To address these challenges, the implementation of electronic death certificates (e-death certificates) is vital. This approach has shown promise in countries like France and Norway, where faster data processing has led to more accurate and timely reporting of causes of death (Eng et al., 2024; Lefeuvre et al., 2014).

Furthermore, there is a call for incorporating additional data into our monitoring, such as statistics on using proxies such as alcohol intoxication from the (IMA-AIM), to further enhance our understanding of alcohol-related harms. Updating the BHIS to include comprehensive data on alcohol use and its determinants is essential. Collaboration among health agencies (HIS-link) will also play a critical role in enhancing data sharing and integration, leading to more informed public health strategies.

Overall, a comprehensive overview of healthcare interactions related to alcohol problems, encompassing general practitioners, early intervention programs, and emergency services, will be instrumental in developing targeted interventions. Strengthening monitoring and data collection will support ongoing assessments of alcohol use. Also, about the use of classic and newer tobacco products, better registration in patient records, for example, could be very helpful for setting up better care and better follow-up care. Both smoking status and smoking cessation status, with e.g. information on previous smoking cessation attempts, could improve the quality of care, informing policy decisions and ensuring a responsive approach to public health challenges. Lastly, collecting representative exposure data related to tobacco or alcohol consumption will be critical for establishing a clearer picture of tobacco and alcohol use trends, allowing policymakers to make informed decisions that effectively address these public health challenges. Those findings help us understand limitations regarding the data use and how addressing those challenges can help improve the monitoring of substance use. By launching this first national effort to improve monitoring as part of the SUBOD project, Belgium can better understand the impacts of these substances on public health and implement effective strategies to mitigate their harm.

3. EXPAND — Extend the monitoring framework to other risk factors

The SUBOD project focused initially on tobacco and alcohol use as a first step towards integrating risk factors into the BEBOD study. Other addictive behaviors, are also important to consider in the context of the ACD.

The CRA framework is a robust methodology that can be effectively applied to a variety of risk factors (Plass et al., 2022). While each risk factor possesses unique characteristics that necessitate tailored approaches, the overarching principles of the CRA framework allow for a consistent evaluation strategy. By expanding our monitoring to include additional risk factors, we can gain a more comprehensive understanding of public health dynamics in Belgium. As part of the SOCOST2 project, the health and cost implications of **gambling** in Belgium, acknowledging its rising profile as a public health concern, will be assessed. This application will contribute to the broader Belgian National Burden of Disease Study.

There is also a pressing call to expand our focus to include **illicit drug use** such as cannabis, cocaine and ketamine use, which presents a critical area of concern for public health. By integrating data on substance use beyond just alcohol and tobacco, we can better understand the new emerging risks affecting the population and formulate targeted interventions.

Another important aspect to consider is the trade-off between different risk factors. For instance, when individuals decide to quit drinking alcohol, there may be a tendency to compensate by increasing food intake, potentially leading to overeating and subsequent weight gain, or live a healthier lifestyle. Understanding these behavioural interactions is crucial for developing effective public health strategies that address multiple risk factors simultaneously, rather than in isolation, which is currently a limitation of the CRA framework.

Moreover, the role of social norms and cultural factors in shaping health is not to be overlooked. Understanding how societal attitudes influence individual choices is essential for designing interventions that resonate with the community. By addressing these social determinants of health, we can foster environments that encourage healthier lifestyles. For now, the project assesses the burden of tobacco and alcohol use by age, sex, region, and education status as a proxy for socio-economic status. Expanding to other variables driving health inequity can help reduce the widening gap among individuals. This will be further explored in the proposed SOCOST2 project, which is currently under review.

In addition, evaluating the costs associated with exposure to second-hand and third-hand smoke, as well as prenatal exposure to alcohol use, will highlight the broader public health implications of tobacco use. Investigating intergenerational patterns and coping mechanisms can provide further insights into substance use dynamics in Belgium.

Looking into the future, examining disease-specific costs associated with various risk factors will provide valuable insights into the economic burden imposed on the healthcare system. This analysis will not only highlight the financial implications of poor health outcomes but also assist in prioritizing interventions and allocating resources effectively.

4. ACT — General recommendations based on the results

- **Strengthen existing policies**

Our findings indicate that tobacco and alcohol use remain major contributors to ill health and premature mortality in Belgium, and this leads to high costs for society. While guidelines such as the SAFER framework (World Health Organization, s. d.-c) and the Framework Convention on Tobacco Control (FCTC) (World Health Organization, s. d.-d) have driven significant progress in reducing alcohol and tobacco consumption, challenges persist. The FCTC emphasizes the importance of comprehensive smoke-free policies and advertising bans (among others), while the WHO SAFER framework advocates for increased alcohol taxes (among others) (World Health Organization, s.d.-d, s.d.-a). Implementing such measures has been shown to be effective (Rehm et al., 2023). Additionally, recommendations from the Superior Health Council highlight the need for continued vigilance, including measures like raising the legal age for purchasing tobacco and alcohol (Conseil Supérieur de la Santé., 2024, 2025).

Despite these advancements, our results show that although cigarette smoking has declined, it may continue to pose a public health concern, especially as inequalities widen among different regions and educational levels. Regarding alcohol use, the consumption also remains problematic, with no significant decrease in the number of current drinkers and a projected rise in average daily consumption. Cost related to alcohol and tobacco consumption in Belgium sums to 1.2 billion euros annually, which can be avoided if no one were drinking or smoking.

For the first time ever, Belgium has adopted a national alcohol plan, an important milestone made possible through coordinated action across policy levels. However, our results highlight that past consumption patterns and existing policies have not been sufficient to reduce alcohol use. If current trends continue, alcohol consumption is expected to rise in the coming years.

To effectively address these challenges, Belgium must strengthen its ongoing initiatives and adopt more ambitious policies to reduce the health and economic burdens associated with tobacco and alcohol use. Achieving the goal of a “smoke-free generation” by 2040 and curbing harmful alcohol consumption requires a more thorough reevaluation of the Interfederal Strategy for Tobacco and Alcohol (Cellule Général de Politique de Drogues, 2022, 2023), which outlines key objectives and proposed actions. However, it is important to note that not all measures included in these strategies are (or will be) currently implemented.

To support these objectives, both tobacco and alcohol strategies should be fully implemented and prioritized measures such as increasing prices, marketing ban, implementing clear warning labels, restricting product availability, and raising the minimum purchase age (Conseil Supérieur de la Santé., 2024; World Health Organization, 2024). Success in these measures relies on collaboration among various stakeholders, including federal, regional, and local governments, non-governmental organizations, educational institutions, and the healthcare sector (World Health Organization, 2024). Public engagement is also needed as fostering broad societal support is essential for achieving the ambitious goals of a smoke-free generation and reducing alcohol consumption.

Moreover, improving screening and brief interventions for alcohol use within healthcare settings, workplace and productivity initiatives where companies can actively promote a smoke-free and alcohol-responsible culture, could benefit from incentives that encourage employee well-being,

alongside integrating smoking cessation support into the health system, can significantly improve intervention effectiveness. Campaigns like *Tournée Minérale* should continue to promote awareness and encourage alcohol-free lifestyles, ensuring that preventive efforts resonate with the public and contribute to a healthier society. Similar initiatives regarding tobacco use, such as campaigns like *Mois sans Tabac* in France or *Stoptober* in the UK and the Netherlands, have also been proven effective and cost-effective. The evaluation of *Mois sans Tabac* by Santé Publique France and the OECD found that every € 1 invested saves € 7 in health care costs (Santé Publique France, 2023).

Regarding the cost, our results highlight that economic and social considerations must be considered when developing public health policies. The economic impact of alcohol and tobacco on healthcare budgets and national productivity requires careful evaluation to ensure cost-effective interventions. It is also important to address socioeconomic disparities, as lower-educated individuals tend to have higher rates of smoking and, although they are less likely to be current drinkers, they often consume larger quantities of alcohol when they do drink. Tailored prevention and intervention strategies for these populations can help reduce health inequalities and economic strain.

To achieve a meaningful reduction in alcohol consumption and its related harms, more ambitious and effective measures are needed, and were suggested by stakeholders, such as:

- Raising the minimum age for alcohol sales and introducing stricter controls on availability, such as banning alcohol sales in hospitals, gas stations, highway service areas, and night shops.
- Implementing a comprehensive ban on alcohol advertising and sponsorship, particularly in sports, to reduce exposure and influence on public behavior.
- Increasing alcohol prices through taxation and introducing a minimum unit price are both proven effective measures to reduce consumption.
- Reducing the density of alcohol shops and ensuring greater availability of non-alcoholic alternatives in public spaces.
- Developing a long-term national strategy that addresses overall alcohol use, not just harmful consumption, with clear objectives and accountability mechanisms.
- Protecting alcohol policy development from industry interference, as has been done successfully in tobacco control.

In parallel, tobacco control efforts must also be reinforced by:

- Expanding smoke-free environments to include more public spaces (f.i, beaches or terraces of bars and restaurants)
- Increase tobacco taxation, the best measure in tobacco control, going hand in hand with better help for smokers to quit the nicotine addiction
- Strengthening regulations on e-cigarettes and other tobacco-related products is essential to prevent uptake among youth and ensure consistent public health protection. At the same time, for adults who already smoke, the temporary use of e-cigarettes, as an effective cessation aid or a less harmful nicotine source, can support smoking cessation and offer health benefits, particularly for those unable or unwilling to quit immediately, in line with the advice of the Superior Health Council. For smoking cessation aid, special attention is needed to better serve the most disadvantaged groups in society, including individuals with lower socio-economic status, people with mental health conditions, and those in prison settings.

- Continue reducing the number of points of sale for tobacco and nicotine products, and introduce a licensing system for retailers to strengthen oversight, limit access, especially for youth, and align sales practices with public health goals.

Indeed, such policies have been proven effective in the reduction of hospitalizations and fully attributable deaths in Scotland (Wyper et al., 2023) and are recommended in several international but also national reports from the High Council for health (Conseil Supérieur de la Santé., 2024) and some are already stated in the Inter federal strategy for a smoke-free generation (Cellule Général de Politique de Drogues, 2022). Australia has implemented similar strategies, but with a more stringent and ambitious focus on improving population health through a tobacco-free approach (Greenhalgh et al., 2024).

- Limit industry interference and strengthen regulation

While our findings focus on the burden of disease and related costs associated with tobacco and alcohol use in Belgium, they point to the continued need for stronger public health action. Indeed, to support meaningful reductions in consumption, it is essential to limit the influence of the alcohol and tobacco industries on policy development. This influence can also help understand stagnating consumption trends, especially regarding alcohol use.

Although our study does not assess the impact of specific policy measures, evidence from the wider literature increasingly highlights how industry lobbying delay, weaken, or obstructs effective public health policies (Garde et al., 2025; Gilmore et al., 2023). For instance, strategies used by the food industry on sugar-sweetened beverages and ultra-processed foods, such as reframing public health issues or opposing fiscal measures, mirror those historically used by the tobacco and alcohol industries (Lauber et al., 2022; Serodio et al., s.d.; VAD, 2022).

Safeguarding the independence of public health policies from industry interests remains crucial. Frameworks like the Commercial Determinants of Health (CDOH) provide useful guidance in this regard (Gilmore et al., 2023). National efforts, such as stricter regulation of advertising, particularly in sports and cultural settings, and enhanced control of emerging products like electronic smoking devices, may contribute to reducing exposure and use.

Ongoing projects at Sciensano, including analyses of corporate political activity and participation in the Global Tobacco Industry Interference Index, aim to provide better insight into how industry strategies might influence policymaking in Belgium. This index evaluates countries based on their efforts to counter industry influence, with a lower score indicating less interference from the tobacco industry. However, it is important to note that the index relies solely on official data, and therefore captures only part of the actual influence exerted by the industry. These efforts are especially relevant when considering policies that affect vulnerable groups, such as youth, pregnant women, and those from lower socioeconomic backgrounds.

- Improve public awareness, health promotion, and literacy

Our findings highlight the continued health burden associated with tobacco and alcohol use, underlining the need for a comprehensive and sustained prevention approach when addressing both risk factors. This means investing across the entire **prevention continuum**: from primary prevention (stopping problems before they start), through early intervention and assistance, to harm reduction

and social reintegration. Addressing all levels of this continuum is crucial not only to reduce the future burden of disease but also to tackle **persistent health inequalities** by addressing the social determinants of health and promoting **equity** across populations.

Public understanding of the risks associated with alcohol and tobacco use remains limited. Even low levels of alcohol consumption can increase health risks, yet awareness of these dangers is low (World Health Organization, 2024). This lack of understanding can be attributed to insufficient information about the harms of alcohol and can be translated into the stagnation of the prevalence of current drinkers in Belgium. Strengthening alcohol health literacy through effective labeling, pictograms, and clear messaging is one element to better inform consumers as suggested by WHO's Best Buy and international recommendations (World Health Organization, 2024).

Similarly, for tobacco use, targeted campaigns should emphasize that quitting smoking at any age significantly reduces disease risk. Most tobacco-attributable deaths occur among current smokers, while those who quit, especially at younger ages, can gain up to 10 years of life expectancy and, in some cases, approach the longevity of never-smokers (Gruer et al., 2009; Jha et al., 2013; Pirie et al., 2013; Reitsma et al., 2021). This message is particularly important for older smokers (aged 55 and over), who not only have the highest rates of cigarette consumption but also bear a disproportionate burden of premature mortality, as shown in the findings of the SUBOD project.

3.1 IMPACT — Set up mechanisms to go from estimates to policy

- Future Directions

By systematically tracking trends, we can assess the current state and evaluate how policies influence these trends through ex-post evaluations, helping us understand the effectiveness of past interventions. However, current data alone cannot continuously evaluate the impact of policies on the population, highlighting the need for a more comprehensive approach that integrates both evaluation and monitoring stages to enhance policy development and effectiveness.

Looking ahead, the framework should expand to include **Health Impact Assessments (HIA)**. The HIA framework offers a promising approach to linking estimates with policy decision-making. It evaluates the potential health effects of policies across various sectors, such as transportation, housing, and taxation, considering both direct and indirect impacts (World Health Organization, s.d.-b). By providing evidence-based insights, HIA helps policymakers identify risks and benefits, supporting informed decision-making. Beyond assessing health outcomes, HIA fosters cross-sector collaboration, engaging stakeholders and emphasizing the connections between health, environmental, social, and economic factors. It also raises awareness among decision-makers about the broader health implications of their actions (World Health Organization, s.d.-b). Although not used in this project, HIA is a valuable tool for integrating health considerations into policy, strengthening the evidence base, and ensuring more effective public health strategies (World Health Organization, s.d.-b).

To improve the monitoring of indicators and evaluate the implementation and impact of national plans, Sciensano, through the IMPACT project (proposed project currently under review), aims to use HIA to provide actionable recommendations for decision-makers and stakeholders. These recommendations will guide data-driven decisions regarding alternative and enhanced public health interventions. Furthermore, incorporating HIA into our framework will enable us to conduct ex-ante

evaluations, modeling the potential impacts of future policies before they are implemented, ensuring decisions are based on robust evidence and better anticipating their outcomes.

- Navigating the political landscape in Belgium

Navigating the political complexity of Belgium presents significant challenges in implementing effective public health policies, particularly when addressing substance use. The country's federal structure, divided into regional and community governments, often leads to fragmented approaches to public health issues. Each region has its own priorities and governance, which complicates the creation of cohesive, nationwide policies and, in the long run, can create disparities within and between regions (Levy & Annemans, 2023), as highlighted in the results of the project.

Another layer of complexity is that alcohol and tobacco regulations also come from the EU level, where industry interests can influence decisions, further complicating Belgium's ability to implement robust national policies (Kluge et al., 2025). The strong influence of tobacco and alcohol industries at the EU level, through lobbying efforts and campaigns, often aims to soften regulations or delay stronger policy measures (Gilmore et al., 2023; The Lancet, 2023; Willemsen et al., 2022). These industries frequently push back against stricter regulations or higher taxes, citing economic impacts and questioning the effectiveness of public health measures (Gilmore et al., 2023). This, coupled with ongoing EU-level debates, can delay the implementation of effective public health measures in Belgium. The combination of political fragmentation at the national level and industry influence at both the EU and national levels creates significant barriers to achieving comprehensive public health policies (Duncan, 2002). As a result, EU policies on tobacco and alcohol use directly impact Belgium's political landscape, contributing to further delays in enacting effective measures (McCambridge et al., 2019).

A key moment in Belgium's policy development came with the introduction of the first national plan specifically addressing alcohol use in 2023. This initiative marked a significant step forward by recognizing the need to tackle alcohol-related harm at a national level. However, the plan primarily focused on harmful alcohol use without considering the broader context of overall consumption patterns or preventive measures that could reduce alcohol use at all levels. This limited scope may have been influenced by political and economic pressures from the alcohol industry, which has historically resisted policies that could harm its profits.

Another pivotal moment was the adoption of the 2022–2028 Inter-federal Strategy for a Smoke-Free Generation. For the first time, Belgium has a relatively comprehensive anti-tobacco plan, jointly endorsed by federal and regional governments. The major challenge now lies in fully implementing the agreed strategies and operational targets. However, to truly achieve a smoke-free generation by 2040, several key policy levers are still missing.

In times of budget constraints, innovative funding mechanisms may be necessary. One option is to require the tobacco industry to contribute financially to prevention and cessation efforts, as recently implemented in Canada. There, tobacco companies will reimburse the government based on market share, covering costs related to cessation programs, public campaigns, compliance and enforcement, research, indigenous initiatives, and international cooperation under the FCTC (Gouvernement du Canada, 2024).

There is a growing call for effective government collaboration across all layers of governance, transparent dialogue, and sustained public pressure to ensure that public health policies are both evidence-based and equitable. Moving forward, a broader, more inclusive approach to alcohol policy, addressing that all levels of consumption can lead to an increased risk for diseases and that focuses on prevention such as: prevention (preventing problems), early intervention (intervening early), assistance, harm reduction and social integration, will be essential to securing the long-term health and well-being of the population.

- Knowledge transfer and collaboration

One key solution to strengthen the impact of the monitoring framework is having a more systematic exchange of insights with stakeholders. Regular presentations at platforms such as the ACD or other policy forums can provide a space for sharing data, trends, and recommendations, ensuring that key actors are informed and engaged. Furthermore, it is essential to continue building and nurturing the relationship between Sciensano, UGent and the FOD volksgezondheid/SPF santé publique, which was fostered during the SUBOD project. This collaboration is critical for ensuring that evidence generated from monitoring and evaluations directly informs policy decisions and contributes to effective, evidence-based public health strategies.

To effectively address the public health challenges associated with tobacco and alcohol use in Belgium, it is essential to continue implementing a comprehensive communication strategy. While maintaining existing initiatives, there is a pressing need to strengthen capacity building and collaboration with key organizations, particularly in advocacy and communication. Engaging specialists in these areas will enhance our ability to convey health messages and mobilize citizens (Street et al., 2014).

Dissemination and knowledge transfer were also part of the core of the SUBOD project. A well-designed communication strategy, led by specialists, can draw attention to the costs and cost savings associated with interventions, helping decision-makers. Strengthening the link between estimates and policy can be achieved by incorporating foresight exercises into the decision-making process. These exercises help anticipate future trends, identify potential risks and opportunities, and establish clear priorities. By adopting a forward-looking approach, policies can become more adaptable, proactive, and better suited to addressing emerging challenges (Pagel et al., 2024).

- Focus on Economic Impact

Additionally, addressing the economic impact of substance use is critical. The issues of productivity loss and absenteeism due to alcohol and tobacco-related health problems must be highlighted. However, there is often a lack of know-how in the prevention sector regarding the estimation of the cost-effectiveness of various interventions. This gap can affect the development of evidence-based policies. Indeed, tensions between the revenue generated from tobacco taxes and the economic costs of tobacco use necessitate a careful examination. We need to explore solutions such as training and developing guidelines that can help practitioners effectively communicate these issues, especially during relevant media coverage (e.g., discussions around alcohol consumption in traffic incidents).

Another call suggested was projecting the total value of taxes against the economic costs of tobacco and alcohol use would help evaluate the feasibility of proposed interventions and the potential return on investment.

- **Public Health Lobbying**

A crucial component of this strategy involves public health lobbying. Identifying key actors and stakeholders who can support our initiatives. This includes forming alliances with health organizations, academic institutions, and community groups that share a common goal of reducing the burden of tobacco and alcohol consumption. By working together, we can help make policy decisions more effective.

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