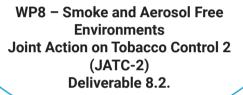# Position paper on best practices for second-hand smoke (SHS) & second-hand aerosol (SHA) protection and evidence supporting the expansion of Smoke- and Aerosol-Free Environments (SAFE)

WP8 – Smoke and Aerosol Free Environments
Joint Action on Tobacco Control 2 (JATC-2)
Deliverable 8.2.

JATC² JOINT ACTION ON TOBACCO CONTROL

Date	Activity	Responsibility / Actors
End of July 2023	JATC2-WP8 D8.2 (position paper) Draft	IRFMN
22nd August 2023	JATC2-WP8 D8.2 (position paper) 2nd Draft with comments from NIJZ, NPHO, UIC, CNPT, NTAKD and ISPRO introduced and shared with IRFMN for them to finalize the document.	ICO
28th August 2023	3rd Draft shared with ICO and final agreements commented to produce the final document	IRFMN
29th August 2023	ICO sends final document to NPHO (WP2) for final layout to be sent back before the end of August	ICO and NPHO
31st August 2023	ICO receives D8.2 from NPHO and: - sends it to coordination WP1 and WP8 partners - places the document in CIRCABC	ICO

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Executive Summary

Background: Exposure to second-hand tobacco smoke (SHS) has been recognized as a major health concern, prompting the implementation and monitoring compliance of smoke-free environments across different settings. However, the comprehensiveness and enforcement of smoke-free legislation vary among European Union (EU) member states (MS). Moreover, emerging products like electronic cigarettes (e-cig) and heated tobacco products (HTP) generating harmful aerosols lack adequate regulation.

The Second Joint Action on Tobacco Control (JATC-2) aims to promote the expansion of smoke and aerosol free environment (SAFE) policies. This position paper aims to provide comprehensive recommendations on SAFE in the EU, based on the activities within Work Package 8 of the JATC-2, such as a comprehensive experts' consultation on best practices, barriers and opportunities for SAFE, a systematic review of the literature, a dedicated webinar and an experts' Symposium.

Recommendations: Ensuring SAFE and protecting individuals from the harmful effects of SHS requires a comprehensive approach. To achieve this, the following recommendations are crucial for EU-MS:

- Implement and enforce complete smoke-free legislation for indoor and outdoor:
    1. public and private workplaces
    2. hospitality venues
    3. public transport
    4. settings frequented by minors and sports settings
    5. healthcare facilities
    6. private vehicles
    7. parks, forests, and beaches
    8. public housing and multiunit dwellings
- Promote voluntary smoke-free homes
- Equalize regulations to protect bystanders from aerosols from emerging tobacco and nicotine products, such as e-cigs and HTPs, to that of conventional cigarettes

Barriers and opportunities: The main barriers against the expansion and enforcement of SAFE include tobacco industry interference, government reluctance, resistance from specific business settings, misinformation, lack of support from general population, and concerns about stigmatization of smokers. Opportunities include extending policies to outdoor places, improving attitudes, conducting campaigns, promoting transparency and funding, and aligning legislation.

Conclusions: Promoting SAFE in the EU is vital for protecting public health and reducing the harm caused by tobacco and nicotine products. Comprehensive smoke-free regulations covering indoor and outdoor settings, including private vehicles along with advocating for voluntary smoke-free homes, are essential steps. Additionally, equalizing legislation for emerging tobacco products with conventional cigarettes is crucial for public health protection. By addressing barriers and capitalizing on opportunities, collaborative efforts can create healthier environments, reducing risks associated with second-hand tobacco smoke and second-hand aerosols exposure.

Background

Exposure to second-hand tobacco smoke (SHS) causes several adverse health effects in adults and children, including cancer, chronic obstructive pulmonary diseases, lower respiratory infections, asthma, ischaemic heart disease, stroke, and otitis media [1-3]. Globally, more than 1.2 million people annually die due to exposure to SHS, including 65,000 children [4].

In Article 8 of the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC),

countries are encouraged to establish completely (indoor and outdoor) smoke-free environments in healthcare and educational facilities, and in indoor workplaces and public places [5]. In alignment with this recommendation, European Union (EU) member states (MS) have implemented smoke-free legislations over the past two decades to mitigate the effects of the exposure to SHS in public areas. However, many countries still have the so-called designated smoking rooms (DSRs) under "very strict technical requirements" as exceptions to their smoke-free law in certain public places and workplaces. A law that allows DSRs in any form (with or without very strict technical requirements) does not provide complete protection.

In addition, the current smoke-free legislation does not cover new nicotine and non-nicotine containing products such as electronic cigarettes (e-cig) and heated tobacco products (HTP) in most EU countries [6, 7] and compliance in countries with such extended legislation is far from satisfactory.

Several studies have already demonstrated the effectiveness of **comprehensive national smoking bans** in reducing SHS exposure in public working places among non-smokers in Europe [8, 9]. These bans have also been instrumental in increasing the adoption of smoke-free homes [10, 11, 12] and in improving health outcomes associated with SHS exposure. Moreover, the strong support of EU citizens towards smoke-free settings, including areas and municipalities that are already smoke-free according to national laws, indicates the feasibility and opportunity of extending smoking bans to outdoor settings [13, 14, 15].

Promoting the expansion of Smoke- and Aerosol-Free Environments (SAFE) throughout EU countries is a key objective of the Second Joint Action on Tobacco Control (JATC-2), co-funded by the European Commission. To address this objective, Work Package 8 (WP8) focused on the current framework and potential expansion of SAFE in Europe. As part of this effort, a consultation was conducted in 2022, engaging 110 experts from 30 EU-MS as well as Norway, Serbia, and the UK. The responses from these experts provided valuable information on the barriers, opportunities, and best practices associated with SAFE policies across different countries. By synthesizing the collective knowledge and insights from experts, together with a previous systematic review and dedicated discussion activities (a webinar and an experts' Symposium) we aim to provide recommendations for developing effective strategies and interventions to protect individuals from SHS and second-hand aerosol (SHA).

Issue Criteria

To provide recommendations on SAFE in the EU, overall and in major specific settings, based on the evidence from the independent scientific literature and the deliverables obtained from WP8 of the JATC-2, including best practices collected on the issue.

Recommendations

Complete ban – without exemptions – and enforcement for:

1. Indoor and outdoor workplaces (public and private)

In order to protect the health and well-being of workers, it is crucial to implement comprehensive and efficient smoking bans in both indoor and outdoor public and private workplaces. Despite the strong support for the implementation of smoke-free legislation in workplaces, even among smokers themselves [15] and the presence of smoke-free regulations in almost all EU countries regulating the consumption of conventional cigarettes at workplaces, there are challenges in ensuring full compliance of the law, especially in outdoor places, and many legislations are not effectively enforced [16, 17]. Furthermore, there are still some EU countries that do not have a complete smoking ban in workplaces [17].

The primary reason to implement a complete smoking ban in workplaces is to safeguard the health of employees [18]. By implementing a complete smoking ban in both indoor and outdoor workplaces, employers can ensure that their employees are protected from harmful substances contained in SHS and SHA and maintain a healthy work environment [7, 19]. It can also serve as an incentive for smokers to quit or reduce their smoking habits [6, 20].

Furthermore, smoking has been linked to substantial productivity loss [8, 21]. SHS can also cause discomfort and irritation to non-smoking employees, leading to increased sick days and decreased concentration. This healthy environment targets also customers attending these workplaces.

Finally, smoking materials and improperly discarded cigarette butts can pose fire hazards, particularly in workplaces where inflammable materials or substances are present.

Among the best practices collected in WP8, examples from Denmark demonstrate the feasibility and effectiveness of comprehensive smoking bans in workplaces. In Denmark, several workplaces, both public and private, have implemented the "Smoke-free work hours" policy, where employees are not allowed to smoke during work time [9]. Moreover, it is noteworthy that legislation to protect the general population from exposure to SHS in all enclosed workplaces has been enacted in most EU countries [16].

2. Indoor and outdoor hospitality venues (public and private)

In the EU, significant progress has been made in implementing complete smoking bans in indoor settings for both the hospitality sector with generally good compliance in most countries [16, 17]. However, the situation regarding outdoor places is still a challenge, as many countries have either partial bans or no legislation at all [16]. Banning smoking exclusively in indoor spaces might be insufficient to provide full protection for non-smokers from the harm of SHS exposure. This is because indoor smoking bans have inadvertently prompted smokers to identify new venues for smoking, particularly outdoor areas that are neglected in smoke-free regulations, leading to high levels of nicotine exposure in bar/restaurant terraces [22, 23]. Moreover, the presence of smoking in such places delays the desired complete de-normalization of smoking [24].

By implementing and enforcing smoking bans both in indoor and outdoor public places, it is possible to significantly reduce exposure to harmful substances contained in SHS and SHA, minimizing the health risks for both smokers and non-smokers [1, 19]. In addition, this helps create clean and pleasant environments for everyone and prevents discomfort and irritation to non-smokers whose overall experience and well-being could be affected by SHS and SHA exposure.

Smoking bans in public places also play a role in encouraging positive role modelling and de-normalization, particularly for younger generations. Smoking bans in public settings send a clear message that smoking is not a socially acceptable behaviour [25]. This can help deter young people from initiating smoking habits, preventing future generations from becoming smokers and contributing to overall public health. Additionally, this can also have a positive impact on current smokers by creating an environment that supports cessation or reduction of smoking habits [26, 27].

Complete smoking ban is crucial since there is no safe level of exposure to tobacco smoke, and engineering approaches like ventilation and designated smoking areas do not offer adequate protection [7, 28].

3. Indoor and outdoor public transports

Smoking bans in public transportation, even in outdoor areas, also contribute to enhanced safety and accessibility for all passengers. Among the best practices collected by WP8, the Netherlands serves as an example, where more than 400 train stations, including platforms, became total smoke-

free areas [29]. A similar example is represented by Estonia, where smoking is prohibited in buses, tramways, trolleybuses, and stop waiting areas [29].

Finally, the implementation of outdoor smoke-free policies can contribute to reduce PM2.5 levels and pollution caused by discarded cigarette butts, which represent the biggest component of litter worldwide [30, 31].

It is essential for governments, policymakers, and communities to recognize the significance of these arguments towards the implementation of smoking bans in indoor and outdoor public places. In particular, there is a need for the implementation of complete smoking bans in outdoor public places, where legislation may currently be lacking or only partial. Furthermore, it is imperative to prioritize the enforcement of existing smoking bans in indoor settings.

4. Indoor and outdoor settings frequented by minors, sports settings

Besides schools and kindergartens, in other public places frequented by children as sports' facilities and playgrounds, many EU countries have implemented bans to improve the protection of children and adolescents. Nevertheless, it is important to note that the legislation remains either partial or absent in approximately half of the EU countries [16]. Recent studies have highlighted concerning findings, including the presence of airborne nicotine and the presence of cigarette butts in many of the EU playgrounds analysed [23, 32].

On the other hand, a recent study highlights a very high support to the implementation of smoke free policies for outdoor settings frequented by children [33].

One of the primary motivations for implementing smoking bans in settings frequented by minors is to protect children from the harmful effects of SHS [34]. Children are more susceptible to the health risks associated with tobacco smoke, and exposure can lead to respiratory issues, ear infections, and other related health problems [4]. In addition, implementing smoking bans in these settings plays a crucial role in discouraging young people from initiating smoking habits [7, 25]. Among practices collected by WP8, an important example comes from Luxembourg, where children's playgrounds are smoke-free [29].

Smoking bans in sports settings, including stadiums, arenas, or any kind of sports facility, promote health and wellness among athletes and spectators. Engaging in physical activity and watching sports events should be associated with healthy lifestyles, and exposure to tobacco smoke contradicts this objective. Some outdoor sports clubs in the Netherlands, Spain and around Europe that have voluntarily implemented outdoor smoke-free policies at their venues, setting a positive example for other sports clubs and creating healthier environments for participants and spectators [35].

5. Indoor and outdoor healthcare facilities

The majority of EU countries have successfully implemented complete smoking bans to protect people from the exposure to SHS in indoor healthcare facilities. However, the situation is different for outdoor healthcare facilities, where there are generally partial or no smoking bans in place across almost all EU-MS [16].

Implementing smoking bans in healthcare facilities is crucial to ensure clean and healthy environments for patients, staff, and visitors. SHS can pose significant risks in healthcare settings, particularly for individuals with compromised immune systems or respiratory conditions [30]. Furthermore, healthcare professionals, including doctors and nurses, play a vital role in promoting healthy habits and setting a good example for patients and the community. In Ireland, smoking is strictly prohibited anywhere in The Health Service Executive (HSE) facilities, displaying their proactive approach in creating a clean and healthier smoke-free environment for staff, patients, service users, and visitors

[29].

The notable practice from Ireland serves as successful model and provides valuable suggestions for future developments in creating healthier environments. It is also noteworthy that there is strong support for smoking bans in healthcare facilities, even among smokers themselves [36]. By prioritizing these measures, it is possible to significantly contribute to improving public health and fostering a healthier future.

6. Private vehicles

Lighting cigarettes in cars can be a significant distraction for drivers, potentially leading to car accidents and compromising road safety [37, 38]. Moreover, smoking while riding motorcycles can pose similar risks, further compromising road safety for both the smoker and other road users. Thus, the legislation of smoke-free private cars can help in reducing the risk of accidents caused by smoking-related distractions, ensuring the well-being and safety of both smokers and passengers.

Also, the recognition of the SHS harmful effects on children's health, has prompted numerous jurisdictions to enact laws prohibiting smoking in cars with minors [39]. Clear examples of these laws are Austria [40], Ireland [41], Italy [39], Luxembourg [42] and Slovenia [43], among others. A recent systematic review and meta-analysis exploring support for smoke free policies in outdoor areas identified the highest support for policies promoting smoke free cars when children are present [33].

Implementing a smoking ban is particularly important in cars. Smoke can reach exorbitant high levels at the back seat, when cigarettes are smoked in a small place like a car, even with open window next to the smoker at the front seat [44]. A study in two EU countries found a broad range of SHS in cars. It showed considerable differences in SHS and THS levels related to the smoking profile of drivers, with higher concentrations in cars of smokers who smoked inside the vehicle. Elevated SHS and THS markers were also present in cars of smokers who do not allow smoking in the vehicle, indicating tobacco smoke contamination is pervasive [45].

Additionally, the risk of fires is also increased by the fact that smoking drivers most probably will through their butts to the route. This is an environmental threat of major consideration.

Therefore, complete ban on smoking in private vehicles should be prompted across EU MS.

7. Selected outdoor settings, including parks, forests, and beaches

Implementing smoking bans in selected outdoor settings, such as parks, forests, and beaches, plays a vital role in creating healthier environments and protecting public health. Although these locations are particularly susceptible to high levels of SHS [23], in the current landscape only a few EU countries have implemented comprehensive local smoking bans in parks and beaches, highlighting the need for stronger regulations in these outdoor settings. Beaches such as Bibione [23, 46] in Italy and Barcelona in Catalonia (Spain) [47] are clear examples of the bans' effectiveness.

The primary reason for implementing smoking bans in outdoor settings is to reduce SHS exposure, giving the possibility to families and children to enjoy the fresh air and natural surroundings without being exposed to SHS. Additionally, the implementation of smoking bans encourages healthier behaviours, such as physical activity and outdoor socialization, contributing to overall well-being.

Outdoor smoking bans also contribute to the preservation of natural spaces. Cigarette butts, which are frequently discarded in these areas, pose a significant environmental concern as they contain toxic chemicals that can contaminate soil and water [28]. In addition, butts represent a significant fire hazard, especially in dry and flammable environments. These fires can cause extensive damage to ecosystems and wildlife, endangering the biodiversity of these outdoor areas [29]. By banning smoking, we can reduce the likelihood of accidental fires caused by improperly discarded cigarette

butts, protecting both the environment and public safety.

To effectively implement smoking bans in outdoor settings, it is crucial to raise awareness through targeted campaigns and communication strategies. Additionally, collaboration between local authorities, community organizations, stakeholders, and environmental organization is essential.

8. Public housing and multiunit dwellings

Public housing and multiunit dwellings are a clear candidate to implement smoking bans. Second-hand smoke is easily transferred between apartments, hallways and community rooms. Denmark [48] studied the prevalence of exposure to neighbour smoke, resulting on 22% of those living in multiunit dwellings being exposed to neighbour smoke and 58% of these advocating for a smoke free multiunit dwelling. A systematic review including 35 studies from the USA suggests that smoke-free multiunit housing policies are supported by most residents [49].

Voluntary smoking ban for homes: avoid exposure to vulnerable populations, including minors

Promoting voluntary smoke-free homes through comprehensive information campaigns and government support is a proactive measure that can significantly contribute to protect vulnerable populations, particularly minors, from the harmful effects of SHS. The implementation of comprehensive legislation banning smoking in public places has led to a significant increase in smoke-free homes in recent years [10, 12]. This notable trend can be attributed to the success of government smoke-free regulations and their accompanying information campaigns, which have not only reduced SHS exposure among non-smokers but also reduced the social acceptability of smoking [10, 31].

Implementing a smoking ban in private homes significantly improves indoor air quality, reducing PM10 and PM2.5 levels [50, 51].

Since smoking poses not only health risks but also potential fire hazards in enclosed spaces, by choosing to abstain from smoking in houses, individuals also reduce the risk of accidental fires and help create safer environments.

In addition, a voluntary smoking ban in homes sets a positive example for children and encourages healthy behaviours. Children learn from the actions and behaviours of their parents and caregivers, and by experiencing a smoke-free environment, they are more likely to adopt a smoke-free lifestyle [52, 53]. This can have long-lasting effects on their health and well-being and contribute to a reduction in smoking initiation rates among the younger generations.

The successful campaign "Smoke-free Homes – Take 7 steps out" conducted in the UK from 2015 serves as an inspiring example of a campaign that aims to extend a voluntary home smoking ban [29]. It is essential to implement successful campaigns that lead individuals and families to recognise the importance of these motivations and to actively choose to make their private spaces smoke-free, contributing to a healthier, smoke-free future for generations to come.

Equalizing legislation for electronic cigarettes and heated tobacco products to that of tobacco products

E-cigs and HTPs are nicotine-containing products that have gained popularity in Europe since 2010. The market of these products is still growing. The WHO has highlighted the health risks associated with the use of e-cigs, particularly respiratory disorders [5]. HTPs are not risk-free either, as they emit toxic and potentially carcinogenic substances, although generally in lower concentrations compared to traditional cigarettes, and they also emit other substances not generated by traditional

cigarettes [54]. To date, there is no evidence of reduced health risks associated with HTPs compared to conventional cigarettes.

The latest Cochrane review showed a higher success rate for smoking cessation for e-cigs compared to nicotine replacement therapy, but still extremely low since at least 90% of cases failed in quitting cigarette smoking [55]. Moreover, more than 80% of those who quit smoking using e-cigs continue to use them after treatment, therefore hardly leading to a cessation of nicotine addiction. Outside of a clinical context, as consumer products, e-cigs are not effective in increasing smoking cessation. A recent Italian cohort confirmed, using a prospective study design, that e-cigs and HTPs do not help smokers quit smoking, but they do facilitate smoking initiation among never smokers, particularly young people, and relapse among former smokers [56].

Given the potential health risks associated with e-cigs and HTPs, there is an urgent need to include them in the legislation of tobacco products, aligning their regulation to that of conventional cigarettes. While some countries have taken steps to regulate these products, there is still a lack of uniformity in their classification and regulation across different jurisdictions, with the majority of countries having either no bans or only partial bans for their use in both indoor and outdoor public places [16].

The dynamic nature of e-cigs and HTPs, with their constantly evolving variants and flavours, presents a significant challenge for regulation. The lack of strict regulation allows new products, about which very little is known in terms of long-term health effects, to proliferate rapidly in the market. This raises concerns about the potential risks they may pose to public health and consumer protection.

Additionally, the use of e-cigs and HTPs, particularly in public settings, undermines the progress made in de-normalizing smoking and promoting smoke-free environments [57, 58]. The renormalization of smoking behaviours can have detrimental effects on societal attitudes toward smoking and the perception of smoking as a socially acceptable behaviour.

The lack of a comprehensive regulation for e-cigs and HTPs use, particularly in indoor hospitality venues and workplaces, led many cigarette smokers to the use of e-cigs or HTPs in indoor public places to circumvent smoking bans [59, 60]. As a result, the large majority of smokers are dual users, using both conventional cigarettes and e-cigs or HTPs [56].

Furthermore, the high prevalence of e-cig and HTP use in public indoor places contributes to a significant proportion of the population being exposed to SHA. One study conducted in 12 EU countries has shown that approximately 16% of non-users of e-cigs report being exposed to SHA in indoor settings [59]. Considering that in the same study the prevalence of e-cig users at the time of the interview was only 2.4%, this means that one e-cig user exposes an average of 6.5 non-users to SHA. This is substantially higher than the figure for conventional cigarettes, used by 26% of the EU population, where approximately 30% of non-smokers reported to be exposed to SHS. This means that one cigarette smoker exposes approximately 1 non-smoker to SHS [61]. Thus, comprehensive regulations to protect both users and non-users from the potential health risks associated with the use of e-cigs and HTPs are urgently needed.

In conclusion, it is imperative to establish consistent legislation that equally addresses conventional cigarettes and emerging tobacco and nicotine-containing products. Equalized legislation will play a crucial role in addressing the challenges posed by these products and ensuring a comprehensive approach to tobacco control. Also non-nicotine e-cigs should be covered by this regulation, to guarantee and facilitate the enforcement of this policy.

Barriers and opportunities

The expansion of SAFE is crucial for protecting public health and reducing the harm caused by tobacco and nicotine-containing products. However, several barriers that hinder the progress of implementing and expanding SAFE policies, have been identified through the consultation conducted

by WP8.

One important barrier is the interference of the tobacco industry through lobbying and funding activities. This includes lobbying efforts directed at policymakers, parliamentarians, public servants, health professionals, and small business owners, as well as funding campaigns promoting "smoke-free" and "harm reduction" initiatives, often through social media and events aimed at increasing the social acceptability of e-cigs and HTPs [62]. The article 5.3 of the FCTC which is ratified by EU and EU member states should be respected.

Additionally, reluctance and low commitment from governments and authorities obstruct the expansion of SAFE policies. These barriers encompass the absence of legislation for SAFE outdoor places, inadequate prevention and monitoring measures, lax sales regulations, and the misconception that the smoking issue has already been resolved. Resistance from specific settings, such as the hospitality and tourism sectors, small businesses, and private homes, where expanded SAFE policies may be seen as conflicting with human rights, further impedes progress. Misinformation about tobacco nicotine-containing products can also represent a barrier, with a perception that the public and health professionals lack accurate information about non-combustible products and believe there is insufficient evidence of their harmful health effects. Insufficient capacity, lack of public and professional support for enforcing SAFE policies, and concerns about stigmatizing smokers are additional barriers that need to be addressed.

Nonetheless, opportunities have also been identified by experts for the expansion of SAFE policies. One relevant opportunity lies in the extension of these policies to specific outdoor places, including beaches, parks, crowded areas, places where children or vulnerable people are present, hospitality venues, balconies of private homes, and cars. Improving awareness and support towards SAFE policies among citizens, politicians, governmental and non-governmental organizations can also create opportunities for progress. National and local campaigns, along with educational initiatives for the general population, can help enhancing the understanding and acceptance of SAFE policies.

Other opportunities include promoting transparency in financial operations within the industry, allocating funding for smoking cessation services and the enforcement of SAFE policies, and imposing significant fines as deterrents. Ongoing national "smoke-free" or "smoke-free generation" strategies, as well as local campaigns, provide additional opportunities to advance SAFE policies. In addition, there is an urgent need for the extension of SAFE legislation, equalizing legislation of e-cigs and HTPs to that of conventional cigarettes.

Lastly, it is crucial to focus on providing clear strategies for enforcing smoke-free laws, actively involving civil society in policy development and implementation, and establishing robust monitoring and evaluation mechanisms to assess the effectiveness and impact of smoke-free legislation. These efforts will contribute significantly to promoting public health and creating healthier environments across the EU [10].

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