

### IPH response to the UK government and devolved administrations' consultation 'Creating a smokefree generation and tackling youth vaping'

06 December 2023

The Institute of Public Health in Ireland www.publichealth.ie

Dublin Office:Belfast Office:700 South Circular RoadCity ExchangeDublin 811-13 Gloucester StreetIreland D08 NH90Belfast BT1 4LSPh: + 353 1 478 6300Ph: + 44 28 9064 8494

### Introduction

The Institute of Public Health (IPH) informs public policy to support healthier populations in the Republic of Ireland and Northern Ireland. Our key priorities are promoting health and wellbeing, improving health equity, and reducing health inequalities through evidence, policy and partnership.

On 4 October 2023, the Department of Health and Social Care (DHSC) in England published a command paper 'Stopping the start: our new plan to create a smokefree generation', setting out proposed action to protect future generations from the harms of smoking by creating the first smokefree generation, which the UK Government and devolved administrations (including the Northern Ireland Executive) consulted on.

The consultation asked questions in 3 areas for which new legislation would be needed:

- 1. Creating a smokefree generation
- 2. Tackling youth vaping
- 3. Enforcement

Full details of the consultation can be found on the DHSC website: <u>https://www.gov.uk/government/consultations/creating-a-smokefree-generation-and-tackling-youth-vaping/creating-a-smokefree-generation-and-tackling-youth-vaping-your-views</u>

IPH has developed a response to this consultation with a focus on Northern Ireland and in the context of all-island tobacco endgame ambitions. IPH is represented on the Tobacco Strategy Implementation Steering Group in Northern Ireland and supports the development of tobacco policy in Northern Ireland. Relevant work produced by IPH includes:

- Mid-Term Review of the Ten-Year Tobacco Strategy for Northern Ireland
  Stakeholder Engagement Report (1)
- End of term Review of the Ten-Year Tobacco Control Strategy for Northern Ireland (2012-2022) - Stakeholder Engagement Report (2)

### **Key Points**

#### Context

Tobacco causes around 2,200 deaths in Northern Ireland every year. Tobacco-related illness, disability and death requires a robust response with short-term, medium term and long-term strategic actions.

Regular use of e-cigarettes is increasing among children in Northern Ireland and measures are required to reduce the appeal and accessibility of ecigarette products to children.

The regulatory measures proposed in this consultation are necessary, proportionate, feasible, equitable and supported by both evidence and public opinion.

#### **Tobacco regulation**

IPH strongly supports the introduction of legislation prohibiting the sale of tobacco products for anyone born on or after 1 January 2009, as a long-term strategic action for endgame.

**IPH** recommends

- Introduce a package of short-term and medium-term tobacco endgame measures including further regulation of nicotine concentrations and product packaging, tobacco pricing and a more comprehensive approach to retailer licensing and density
- Invest in the workforce within the Public Health Agency, health and social care system, local councils and the PSNI to support both enforcement and state-supported smoking cessation
- Prohibit proxy sales of all tobacco products within the new legislation
- Include all tobacco products, cigarette papers and herbal cigarettes within the legislation
- Increase fixed penalty notices for underage sale of tobacco products
- Introduce a legal requirement for all UK government departments and elected officials to report on compliance with Article 5.3 of the World Health Organisation Framework Convention on Tobacco Control.

### **E-cigarette regulation**

IPH recommends an approach to e-cigarette regulation that focusses on reducing the appeal and accessibility of e-cigarettes to children and young people

IPH recommends

- Keep e-cigarette products behind the counter and prohibit their display including instore marketing and promotional materials
- Prohibit the use of all imagery, colouring and branding for both ecigarette packaging and device
- Phase out the sale of disposable e-cigarettes
- Include short-fills and non-nicotine vapes within the legislation
- Restrict e-cigarette flavours through restrictions primarily on product descriptors, but also, in a proportionate manner, on e-cigarette ingredients and characterising flavours
- Introduce progressive e-cigarette taxation targeted to products preferred by young people, but maintaining a price differential with tobacco products
- Increase fixed penalty notices for sale of e-cigarette products to minors
- Resource change management, communications, evaluation and monitoring systems to assess policy impacts on children, tobacco users, dual users and e-cigarette only users.

#### Tobacco, e-cigarettes and the environment

IPH recognises that tobacco and e-cigarette use harms the environment, fuels the climate crisis and disfigures public spaces through littering.

IPH recommends that the UK adopt a stronger and more strategic approach to reducing the environmental impact of tobacco and e-cigarette use, and

- Prohibit the use of filters in tobacco products and including tobacco products within all environmental measures on plastics
- Prohibit the sale of disposable e-cigarette products
- Prohibit government departments and agencies from partnering with the tobacco and e-cigarette companies, and their affiliates, on environmental campaigns and programmes.

### **IPH Response**

1. Do you agree or disagree that the age of sale for tobacco products should be changed so that anyone born on or after 1 January 2009 will never be legally sold (and also in Scotland, never legally purchase) tobacco products?

#### Agree

- Disagree
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

IPH considers this proposal to be the single most important measure to progress in this UK smoke-free generation policy, on the basis that

- Tobacco use is the single largest preventable cause of death in Northern Ireland, causing around 2,200 deaths annually and driving health inequity (3, 4)
- Northern Ireland tobacco control policies have reduced some of the appeal, accessibility and affordability of tobacco but further measures are needed to achieve tobacco endgame (<5% smoking prevalence) by 2035 (4, 5)
- Evidence supports that this measure will reduce health and social inequity caused by tobacco use (6)
- There is public support among the British and Irish public and tobacco control stakeholders in Northern Ireland (1, 7, 8).

In 2019/20, there were 38,617 smoking-attributable hospital admissions in Northern Ireland, an 18% increase on 2010/11's figures (4). Tobacco-related harms place an unsustainable burden on families, communities, the health service and the environment. Long-term strategic actions are necessary, proportionate, equitable, feasible and evidence-based.

Passing legislation for this measure will be challenging due to tobacco industry interference compounded by political instability in Northern Ireland. Delays in passing the legislation, together with an inevitable time lag for effects means

that many people remain at risk of tobacco-related harms in the short and medium term. Therefore, IPH recommends that other measures should be progressed, including:

- Enhance regulations on tobacco packaging, cigarette design and mandate inclusion of quit information in packs (9, 10)
- Enhance retailer licensing systems to support compliance and address retail density (11, 12)
- Increase investment in workforce capacity and resources for enforcement within local councils, PSNI and for smoking cessation staff
- Reduce allowable nicotine concentrations in tobacco products (13)
- Introduce a legal requirement for all UK government departments and elected officials to report on compliance with Article 5.3 of WHO FCTC (14).

### 2. Do you think that proxy sales should also be prohibited?

- Yes
- No
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Proxy sales of all tobacco products should also be prohibited on the basis that:

- Proxy sales may be a significant route of supply for children so a deterrent must be in place to enhance the effectiveness of the core legislation and ensure consistency
- Prohibiting proxy sales raises overall societal awareness and understanding of the lethal nature of tobacco products and can support communities to denormalise tobacco use and act in ways that protect children
- Including proxy sales within the legislation minimises any loopholes that could be exploited by illicit operators to evade prosecution for facilitating supply.

There is limited evidence around proxy sales, as the behaviours by their nature are challenging to capture and explore. It is unclear what interventions, if any, can support compliance with a ban on proxy sales and further evidence is needed. Notwithstanding the real-world challenges in monitoring and enforcement, a ban on proxy sales should be maintained and protected (15). Although there are no specific estimates on proxy sales in Northern Ireland, 37% of 11-16-year-olds who smoke in Northern Ireland get their cigarettes from friends, and it is reasonable to assume that a substantive proportion of these transactions involve some payment rather than solely through gifting, making proxy purchasing a viable target for regulation (16).

### 3. Do you agree or disagree that all tobacco products, cigarette papers and herbal smoking products should be covered in the new legislation?

#### Agree

- Disagree
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

The rationale for including all aforementioned products in the new legislation includes:

- All tobacco products are harmful to health
- It is currently illegal to sell any 'tobacco product', including cigarette papers, to under 18-year-olds. For consistency, all mentioned products should be included in the new legislation as creating exemptions would limit effectiveness
- There is no reliable or consistent evidence that 'novel', next generation, heated tobacco products (HTPs) or 'heat not burn' tobacco products result in fewer harms (17, 18)
- HTPs may be more efficient in delivering nicotine to users than other tobacco products, including cigarettes (18)

- There is no reduction in the chronic disease burden among smokers who switch to HTPs and an increased risk of chronic diseases in nonsmokers who initiate HTP use
- Product descriptors on combustible cigarettes or HTPs including 'natural' or 'herbal' can create false perceptions on the level of risk associated with their use. (19)
- There is limited independent evidence on the safety profile of herbal smoking products. The precautionary principle should apply to any combustible smoking product
- Herbal cigarettes have no proven benefit as a stop smoking aid and are they are not recommended within statutory stop smoking guidelines in the UK or Ireland
- Herbal products can be used as vehicles to side-step regulations on promotion and marketing of tobacco products through branding, display and other means.

### 4. Do you agree or disagree that warning notices in retail premises will need to be changed to read 'it is illegal to sell tobacco products to anyone born on or after 1 January 2009' when the law comes into effect?

- Agree
- Disagree
- Don't know

## Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Warning notices in retail premises will need to be changed to read 'it is illegal to sell tobacco products to anyone born on or after 1 January 2009' when the law comes into effect, on the basis that

- Retail management and staff are aware of their responsibility to abide by the legal provisions and can signal this to customers thereby supporting compliance
- Customers have a right to understand why they may be asked for identification and why they may be refused a sale.

It is illegal to sell tobacco products to anyone under the age of 18 in the UK. However, in Northern Ireland, 41% of 11-16-year-olds who smoke report buying their cigarettes from a shop (16). A number of fixed penalty notices have been issued including for sale of single cigarettes (20). In addition to warning notices being placed in retail premises, fixed penalty notices and potential loss of licence should be issued for breaches of age of sale legislation for tobacco products, and this is addressed in the response to Q25 and Q26.

To comply with the legislation, retailers across all UK jurisdictions must only accept one or more of the following forms of identification:

- A passport
- A European Union "photo-card" driving licence
- A Ministry of Defence Form 90
- A photographic identity card bearing the national Proof of Age Standards Scheme (PASS) hologram
- EU national identity card.
- 5. Do you agree or disagree that the UK Government and devolved administrations should restrict vape flavours?
  - Agree
  - Disagree
  - Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

IPH agrees that e-cigarette flavours should be restricted on the basis that

- E-cigarette use is increasing among children in Northern Ireland, indicating that the current regulatory framework is not sufficient (16)
- The best available review evidence concludes that restricting flavours is effective in reducing youth e-cigarette use (21)
- Flavours contribute to the appeal and palatability of e-cigarettes to nonsmokers and children (22)

- Certain flavours are used more consistently by children and young people than among smokers switching to e-cigarettes (23)
- Although adults switching to e-cigarettes use flavoured products, there is no evidence that certain flavours enhance the ability of smokers to stop using tobacco (24).

In Northern Ireland, one fifth of 11-16-year-olds reported ever having tried an e-cigarette, while 6% reported to be regular users of e-cigarettes (16). Of those, 86% use disposable rather than refillable e-cigarettes (16). Among those who had ever smoked and used e-cigarettes, 38% said they started using e-cigarettes before smoking cigarettes (16). 77% of 11-18-year-olds agreed that the flavours and colourful packaging used for e-cigarettes make them appealing (25).

Flavours attract both youth and adults to use e-cigarettes (22). However, there is no evidence that certain flavours enhance the ability of smokers to stop using tobacco (24).

Many countries and regions across the world, including Finland, the Netherlands, and Australia are already implementing restrictions on e-cigarette flavours. There are limited reports on policy impacts available at this time in terms of reducing youth e-cigarette use or on the risk behaviours of cigarette smokers, e-cigarette users and dual users. A watching brief on outcomes from different policy approaches is advised, but inaction on e-cigarette flavours is not a viable option.

- 6. Which option or options do you think would be the most effective way for the UK Government and devolved administrations to implement restrictions on flavours? (You may select more than one answer)
  - Option 1: limiting how the vape is described
  - Option 2: limiting the ingredients in vapes
  - Option 3: limiting the characterising flavours (the taste and smell) of vapes
  - Don't know

Please explain your answer and provide evidence or your opinion to support

#### further development of our approach. (maximum 300 words)

The most effective way for the UK Government and devolved administrations to implement restrictions on flavours is to introduce a regulatory system that substantially and rapidly restricts how e-cigarettes are described. In addition, there should be a prescribed list of allowable characterising flavours and ingredients. The regulatory framework should seek to limit e-cigarette flavours to reduce their appeal and palatability to children and non-smokers.

In Northern Ireland, 77% of 11-18-year-olds agreed that the colourful packaging and flavours used for e-cigarettes make them appealing (25). Among 11- to 17-year-olds in Britain who use e-cigarettes, the most popular flavours are fruit (60%), followed by sweet or soft drink (25%) (26). E-cigarette products with flavours other than tobacco are perceived by youth to be less harmful (22).

Prohibited descriptors should include:

- Food-based descriptors (including, but not limited to, candy, dessert, confectionery)
- Drink-based descriptors (including but not limited to soft drinks, coffee)
- Fruit-based descriptors
- Descriptors referring to branded or unbranded products primarily used by children, including toys or games
- Product descriptors relating to temperatures, textures or oral sensations (e.g. ice, chill).

Emerging evidence shows that concentrations of flavour chemicals in e-liquid are high enough to be cytotoxic (27, 28). Further toxicological studies of e-liquid ingredients are warranted, and there is a need to determine health risk profiles for different ingredients.

Ingredients that are known carcinogens should be prohibited, in line with the process taken in the Netherlands (29).

The presence of cooling e-cigarette flavours is concerning, given that the cooling attributes of menthol have been shown to play a role in initiating tobacco use among young people (30). Cooling flavours can suppress the

irritable effects of nicotine, counterbalancing a barrier that may otherwise prevent young people from using e-cigarettes (28). The percentage of cooling flavoured e-cigarette sales from total sales doubled in the US during 2017–2021, with sales of non-menthol cooling disposable e-cigarettes experiencing the highest percentage increase (31).

# 7. Which option do you think would be the most effective way for the UK Government and devolved administrations to restrict vape flavours to children and young people?

- Option A: flavours limited to tobacco only
- Option B: flavours limited to tobacco, mint and menthol only
- Option C: flavours limited to tobacco, mint, menthol and fruits only

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

The most effective way for the UK Government and devolved administrations to restrict vape flavours to children and young people would be to adopt Option A for the general retail market, adopting this position through a phased change management process.

The Institute for Global Tobacco Control report, 'State of the Evidence: Flavored Tobacco Product Bans or Restrictions concluded that e-cigarette flavour bans or restrictions may reduce e-cigarette use among adults and youth, with larger reductions for younger users (24). There are no clear estimates of effect size in terms of reductions in youth e-cigarette use or of changes in behaviour of adult e-cigarette users. With these information deficits in mind, a clear evaluation framework should be agreed in advance of adoption, and baseline data should be collected.

However, in order to meet the flavour preferences of people who have fully switched to e-cigarettes from tobacco, a different range of flavoured nicotine replacement products could be made available solely through state-run stop smoking services. This approach would direct dual users, and those exsmokers who have switched to e-cigarettes to engage, and benefit from, the full range of available stop smoking supports. This approach could provide an incentive for e-cigarette users to optimise their stop smoking journey through engagement with statutory services, providing an opportunity for them to benefit from advice and support that is free from commercial interest, while not excluding them from access to e-cigarette devices.

## 8. Do you think there are any alternative flavour options the UK Government and devolved administrations should consider?

- Yes
- No
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Please see response to Q7 above.

In 2017, nearly 20,000 e-liquids and 250 unique flavour descriptions were available to the Dutch market, and this number is likely to be even higher now (32). In response, the Dutch government introduced a ban on the production of flavoured e-cigarettes and refill e-liquids (excluding tobacco flavours) on 1 July 2023, with a sell-out period in place until 1 January 2024 (33). The impact of this flavour ban should be reviewed once available.

## 9. Do you think non-nicotine e-liquid, for example shortfills, should also be included in restrictions on vape flavours?

- Yes
- No
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

IPH recommends that non-nicotine e-liquid, for example shortfills, should also be included in restrictions on vape flavours, on the basis that

- The long-term safety profile of non-nicotine e-liquids, including shortfills, is unknown but flavours and other ingredients may have some toxic effects
- Some products are designed for customisation to allow addition of nicotine shots
- Restricting non-nicotine e-cigarettes will help to denormalise use and prevent future loopholes in tobacco and e-cigarette regulation.

Short-fill e-liquids are not covered by UK Tobacco and Related Products Regulations, are typically nicotine-free and come in larger, underfilled bottles allowing customisation with the addition of 'nicotine shots' (34). Awareness of short-fills was common among youth in England, including among those who had never used e-cigarettes or smoked. Among youth who used e-cigarettes in the past 30 days, shortfill use was more prevalent among those who also smoked and those who vaped nicotine-containing e-liquids (34).

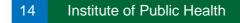
There is some evidence that concentrations of flavour chemicals in e-liquid are high enough to be cytotoxic (27, 28). Further toxicological studies of e-liquid ingredients are warranted, and there is a need to determine if these flavours will lead to adverse health effects. There are also concerns that using nonnicotine e-cigarette use can foster transition to nicotine-containing products and/or tobacco products (35).

## 10. Which option do you think would be the most effective way to restrict vapes to children and young people?

- Option 1: vapes must be kept behind the counter and cannot be on display, like tobacco products
- Option 2: vapes must be kept behind the counter but can be on display

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

IPH recommends that 'Option 1: vapes must be kept behind the counter and cannot be on display, like tobacco products' is the most effective way to restrict e-cigarettes to children and young people. This recommendation is made on the basis that



- Keeping e-cigarettes behind the counter and restricting point of sale display of nicotine containing products raises customer awareness that they are not a general consumer product, are addictive and are not suitable for children
- Restricting point of sale display of nicotine containing products is important to restrict children's exposure to a wide range of in-store e-cigarette branding and promotions used in general retail settings and remove products from the 'eye-line' of younger children
- Keeping e-cigarettes behind the counter may reduce opportunities for theft of products by children or those facilitating proxy sales to minors
- Keeping e-cigarettes behind the counter and restricting point of sale display does not hinder the accessibility of e-cigarettes to adult users or dual users
- Evidence from tobacco products supports the effectiveness of prohibiting point of sale display (36).

There has been a significant development of displays with high in-store visibility in Northern Ireland, providing wide exposure to young people. E-cigarette branding in retail environments is promoted through the display of packaging, branded gantries, branded merchandise in and around the store and check-out desk, window displays and branding of staff clothing.

Prohibiting the sale of these products through self-serve kiosks and vending machines can also help to increase chances of appropriate age verification.

Finland has already restricted e-cigarette advertising and promotion and product display at points of sale, while the Minister for Health in Ireland has also committed to this issue (37).

Furthermore, it is important to bring forward evidence-based regulation of online and distance sales on a phased basis within the new legislative proposals.

## 11. Do you think exemptions should be made for specialist vape shops?

• Yes

• No

#### Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

It is unclear from this question, what exemptions might be considered, nor is there any definition provided for a 'specialist vape shop'. IPH recommends that an enhanced licensing system be developed in respect of the retail of tobacco and e-cigarettes prior to consideration of any exemptions for one type of retailer over another.

Research conducted on 11- to 18-year-olds in Northern Ireland found that of those who did buy their e-cigarettes from an outlet, 58% bought from a 'vape shop' (25). We could not see any convincing evidence that the business model operated by 'vape shops' was any more or less compliant with the law than other retail environments. We could not locate any evidence that 'vape shops' offer evidence-based behavioural support to smokers seeking to stop using tobacco to any greater or lesser extent than other retail stores. We could not find any convincing evidence that 'vape shops' offer products with more stringent safety or testing requirements. With these consideration in mind, it does not seem appropriate to offer any exemptions to 'vape shops' at this time.

In Australia, e-cigarettes are regulated by the Therapeutic Goods Administration, the government authority responsible for evaluating, assessing and monitoring products that are defined as therapeutic goods (38). Under new regulations, e-cigarettes will only be available with a prescription at authorised pharmacies in Australia (38). An import permit will be required to bring any e-cigarettes (with or without nicotine) into the country - and only pharmacies will be given permits (39). The UK government should consider carefully the results of the Australian experience in deciding on future developments to the regulatory framework in the UK.

# 12. If you disagree with regulating point of sale displays, what alternative measures do you think the UK Government and devolved administrations should consider?

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

- N/A

## 13. Which option do you think would be the most effective way for the UK Government and devolved administrations to restrict the way vapes can be packaged and presented to reduce youth vaping?

- Option 1: prohibiting the use of cartoons, characters, animals, inanimate objects, and other child friendly imagery, on both the vape packaging and vape device. This would still allow for colouring and tailored brand design
- Option 2: prohibiting the use of all imagery and colouring on both the vape packaging and vape device but still allow branding such as logos and names
- Option 3: prohibiting the use of all imagery and colouring and branding (standardised packaging) for both the vape packaging and vape device

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Option 3 is the most effective way for the UK Government and devolved administrations to restrict the way e-cigarettes are packaged and presented to reduce youth e-cigarette use. This option is preferred, on the basis that

- Imagery, colouring and branding are all appropriate targets for regulation as they act synergistically to communicate with consumers about the flavour and nicotine experience
- Imagery, colouring and branding are all appropriate targets for regulation as they all contribute to the brand identity, attractiveness and appeal of the product (40)
- Several components of packaging and device design must be regulated in order to increase the salience of existing health warnings on the addictiveness of the product
- Most children in Northern Ireland identify that colourful packaging used for e-cigarettes make them appealing (25).

- Evidence from the introduction of standardised packaging of tobacco shows that the measure is feasible and effective, and that comprehensive measures encompassing imagery, colouring and branding are needed (41)
- UK studies show that standardised packaging measures may reduce the appeal of e-cigarettes among youths without reducing their appeal among adults (42, 43).

# 14. If you disagree with regulating vape packaging, what alternative measures do you think the UK Government and devolved administrations should consider?

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

N/A

## 15. Do you agree or disagree that there should be restrictions on the sale and supply of disposable vapes?

That is, those that are not rechargeable, not refillable or that are neither rechargeable nor refillable.

- Agree
- Disagree
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

IPH agrees that there should be restrictions on the sale of disposable ecigarettes on the basis that:

• Disposable e-cigarettes are more commonly used by children, so product regulation is a viable target to respond to youth e-cigarette use

- Disposable e-cigarettes are more harmful to the environment than nondisposable e-cigarettes, and potentially more environmentally harmful than tobacco products
- Disposable e-cigarettes are more strongly associated with poor compliance in terms of their propensity to exceed allowable nicotine concentrations
- There is no evidence that disposable e-cigarettes make it easier for people to switch from tobacco to e-cigarettes or to stop using tobacco (44).

In Northern Ireland, 86% of 11-16-year-olds who use e-cigarettes use disposable type devices (16). A disposable e-cigarette can be purchased for as little as £2.99, which is of concern as this may increase the accessibility of this product to young people (45).

In Ireland, the HSE has, on several occasions, needed to take market surveillance action on disposable e-cigarettes due to products exceeding the permitted amount of nicotine (20mg/ml or 2%), with levels up to 50.4mg/ml detected (46).

As disposable e-cigarettes are relatively new products, there will be a latency period before long-term health effects are established. However, current research on general e-cigarette use has already identified several health risks, particularly among children and adolescents. There is a strong association between ever e-cigarette use and subsequent ever or current cigarette use at follow up based on longitudinal data and a high quality systematic review (35). Systematic reviews also found some evidence to support the association between e-cigarette use and having asthma, increased coughing, mental health, marijuana use, and alcohol use (47-51).

## 16. Do you agree or disagree that restrictions on disposable vapes should take the form of prohibiting their sale and supply?

- Agree
- Disagree
- Don't know

### Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

IPH agrees that restrictions on disposable e-cigarettes should take the form of prohibiting their sale of supply, on the basis that:

- Prohibiting disposable e-cigarettes is likely to reduce the accessibility and appeal of e-cigarettes to children and non-smokers
- Smokers who have switched to using e-cigarettes will still have a range of other products available to them as well as free state-run stop smoking services offering a suite of evidence-based interventions and medicines at no cost
- Recycling and product adaptation cannot mitigate the environmental impact of disposable e-cigarettes to the same degree as a complete ban, and these approaches provide an opportunity for both tobacco and ecigarette companies to greenwash their reputation.

E-cigarettes comprise three types of waste: plastic, electronic and hazardous chemical waste (52). Disposable e-cigarettes also contain single-use plastics, which contribute to land and marine pollution, adverse effects on human and animal health and climate change (53). E-cigarettes contain circuit boards and lithium-ion batteries, which release toxic compounds into the environment as they degrade. Batteries are also associated with explosion and fire risk (52). When improperly discarded, e-cigarettes leach heavy metals, such as mercury, lead and bromides, as well as battery acid, lithium and nicotine into the environment (54). Some e-cigarettes contain enough toxic chemicals to qualify as hazardous waste (55). Lithium is a precious metal and an important component of electric car batteries (56). UK research on discarded disposable e-cigarettes found that approximately 10 tonnes of lithium is wasted per year, which is the equivalent to the batteries of 1,200 electric vehicles (57). Lithium mining also leads to substantial environmental impacts, including land and water use, pollution and carbon emissions (58).

## 17. Are there any other types of product or descriptions of products that you think should be included in these restrictions?

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Ongoing market innovation by tobacco companies, e-cigarette and other industries in pursuit of profit and 'expanding the nicotine consumer pool' is inevitable (29). Many e-cigarette companies have found a loophole around the law by using synthetic nicotine in their products. It is therefore critical that regulations on nicotine containing products include all forms of nicotine (including synthetic) in addition to nicotine derived from tobacco plants (59).

This proposed legislation should extend to any non-medicinal product that contains nicotine from any source, including, but not limited to, nicotine pouches (NPs), powders, drinks, gummies.

In the UK, NPs and nicotine gummies are regulated under general consumer product safety regulations, not as tobacco products (60). Therefore, they are legally allowed to be sold to under 18s. UK survey data shows that in 2020, 2.7% tried NPs which increased to 3.9% in 2022 (61). In 2022, 48% of survey respondents had never heard of NPs, while 40% had heard of them but had never tried them. This changed from 59% and 32% respectively in 2020, showing a rapid increase in awareness (61). Research based on a different survey comparing 2020-2021 data indicates that 'current use' prevalence was 0.26%, which had doubled from 2020 (62). In April 2023, the Netherlands became the first nation in the EU to ban NPs (63).

In the US, nicotine gummies are considered tobacco products and cannot be sold without authorisation by the Food and Drug Administration (FDA). Not much known about the use of nicotine gummies in the UK. Very few shops, including online, currently sell these products, and there is no survey data available (60).

# 18. Do you agree or disagree that an implementation period for restrictions on disposable vapes should be no less than 6 months after the law is introduced?

- Agree
- Disagree
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

An implementation period for restrictions on disposable e-cigarettes should be no less than 6 months after the law is introduced, on the basis that

- There will inevitably be delays in passing and enacting legislation. This will allow ample time to plan for a transition, rather than an extended time period after the law is introduced
- A prolonged implementation period may contribute to further increases in youth e-cigarette use.

In Northern Ireland, 86% of 11-16-year-olds who use e-cigarettes use disposable type devices (16). This figure highlights the urgent need to implement the restrictions as soon as possible.

The implementation of the new measures should be accompanied by a communications campaign which can guide people towards smoking cessation services. It is important that the legislation is implemented in full, and that there is regular data collection and monitoring in place.

# 19. Are there other measures that would be required, alongside restrictions on supply and sale of disposable vapes, to ensure the policy is effective in improving environmental outcomes?

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Yes, other measures are required to address the profound environmental impacts of tobacco and e-cigarette use. The environmental impact of tobacco products and e-cigarette products should be managed in a strategic way, with regulations proportionate to their environmental harm and short-term, medium term and long-term targets. The following measures should be considered

- Ban single-use cigarette filters, which offer no proven protection from the harms caused by inhaled or second-hand tobacco smoke
- Include cigarette filters within all legislation relating to single-use plastics without exception
- Introduce an environmental levy on tobacco and e-cigarette manufacturers that is proportionate to their environmental impact, including littering

- Deliver government messaging to raise awareness of the environmental impact of tobacco and e-cigarette products and include signposting to supports for stopping smoking
- Prohibit government departments and agencies from co-partnering with tobacco and e-cigarette industries on environmental programmes.

Tobacco products are the most littered item on the planet (64). Roughly 4.5 trillion cigarette filters pollute the environment every year, making them the second-highest form of plastic pollution worldwide (64). In addition, the tobacco industry costs the world more than 600 million trees, 200,000 hectares of land, 22 billion tonnes of water, and 84 million tonnes of CO<sub>2</sub> every year (64). The tobacco industry uses greenwashing tactics to cover up the harm of tobacco farming, production, consumption and waste on the environment, on farmers and on communities (64). The tobacco industry also uses corporate social responsibility strategies to present themselves as responsible corporations, and to distract from the overwhelming harm they cause to the environment (65).

# 20. Do you have any evidence that the UK Government and devolved administrations should consider related to the harms or use of non-nicotine vapes?

- Yes
- No
- Don't know

### Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Little is known about the effects of using non-nicotine e-cigarettes. However, a review by Yoong et al (2021) suggested that non-nicotine e-cigarettes were associated with a higher risk of later cigarette smoking, suggestive of a possible 'gateway' effect (35). There was no evidence that non-nicotine e-cigarettes have a role as an effective aid to stopping tobacco use or assisting people stop use of other nicotine products.

There are no reliable estimates on the use of non-nicotine e-cigarettes in

Northern Ireland to the best of our knowledge. We could not source any reliable evidence on the user profile or product profile of non-nicotine e-cigarettes available on the Northern Ireland market at this time.

As mentioned in Q6, concentrations of flavour chemicals in e-liquid, including those used in non-nicotine e-cigarettes, are high enough to be cytotoxic (27, 28). Further toxicological studies of e-liquid ingredients are warranted, and there is a need to determine if these flavours will lead to adverse health effects.

# 21. Do you think the UK Government and devolved administrations should regulate non-nicotine vapes under a similar regulatory framework as nicotine vapes?

- Yes
- No
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

For reasons outlined in Q20, non-nicotine e-cigarettes should be regulated under a similar regulatory framework as nicotine-containing e-cigarettes.

For example, under Regulation 26 of the European Union (Manufacture, Presentation and Sale of Tobacco and Related Products) Regulations 2016 (S.I. No. 271 of 2016), there are requirements that e-cigarettes and refill containers are child-resistant and tamper proof and have a mechanism that ensures refilling without spillage to protect consumers (66). However, if these requirements do not apply to non-nicotine e-cigarettes, this provides opportunities for cannabis oil and other unintended substances to be consumed.

# 22. Do you have any evidence that the UK Government and devolved administrations should consider on the harms or use of other consumer nicotine products such as nicotine pouches?

24 Institute of Public Health

- Yes
- No
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Currently, there are no reliable estimates on other consumer nicotine products in Northern Ireland in terms of

- The product profile and range available on the market
- The user profile
- Patterns of use among children and adults
- Use among users of tobacco and/or e-cigarettes as a harm reduction option
- Use among non-users of tobacco and/or e-cigarettes
- Consumer risk perceptions among different user groups.

There is insufficient evidence to recommend commercially available nicotine pouches as an aid to stop smoking. Like e-cigarettes, there are concerns that young people and non-smokers will use these products and be placed at risk of developing nicotine addiction.

Little is known about the long-term impact of e-cigarettes and other consumer nicotine products. Longitudinal studies are needed to understand the true effects of these products and should therefore be regarded with caution. Any new nicotine product should undergo regulatory assessment before becoming publicly available.

It is difficult to predict the rise in popularity of certain consumer nicotine products. However, the rapid rise in e-cigarette use may suggest that other consumer nicotine products could follow suit and could rapidly penetrate both the adult and the youth markets. Evidence found that in South Korea, where e-cigarettes are extensively regulated, adolescent e-cigarette use remains stable at a low level and combined e-cigarette plus cigarette use has declined (67). In the USA, where e-cigarette regulation is more limited, e-cigarette use has increased, as has combined e-cigarette plus cigarette use (67). This suggests that more restrictive policies are likely to contribute to lower e-cigarette use

and overall use of e-cigarette and cigarette, and the earlier restrictions are put in place, the more effective they can be. Similar restrictions should be placed on all other consumer nicotine products to prevent their use becoming more popular and widespread.

## 23. Do you think the UK Government and devolved administrations should regulate other consumer nicotine products such as nicotine pouches under a similar regulatory framework as nicotine vapes?

- Yes
- No
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

See answer to Q17.

### 24. Do you think that an increase in the price of vapes would reduce the number of young people who vape?

- Yes
- No
- Don't know

### Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

An increase in the price of e-cigarettes is likely to reduce the number of young people who use them, but the optimal pricing strategy to adopt is unclear at this time (21). Progressive e-cigarette taxation targeted to those products preferred by young people, alongside tobacco cigarette minimum pricing and progressive tobacco taxation, may be more effective than adopting siloed approaches to pricing of tobacco and e-cigarette products. Price differential between tobacco products and e-cigarettes should be maintained so as not to penalise those who had already switched fully to non-combustible tobacco. If a

decision is made to retain disposable e-cigarettes on the market in the UK, the price differential between disposable and non-refillable e-cigarette devices should be closed.

One study found that price increases resulted in an overall decrease in ecigarette use, with no increase in tobacco or marijuana use (68). Another found that jurisdictions that implemented an e-cigarette tax had a significantly smaller increase in consumption than those that did not (69). However, implementation of taxes or price increases may not be enough on their own.

Reducing the affordability of tobacco has been highly effective in reducing consumption. Affordability has the most impact on those who are most price sensitive, such as younger smokers (70). In response to a hypothetical minimum price for cigarettes and roll-your-own tobacco, approximately a fifth of smokers in the UK indicated they would smoke less or quit and almost two-fifths of ex-smokers indicated the prices would help them stay quit (71).

Disposable e-cigarette can be purchased for as little as £2.99, which is of concern as this may increase their accessibility to children and young people (45). It is likely that e-cigarette companies will manipulate pricing to maintain low cost e-cigarette products. This should be actively monitored and further regulation considered if required.

## 25. Do you think that fixed penalty notices should be issued for breaches of age of sale legislation for tobacco products and vapes?

Powers to issue fixed penalty notices would provide an alternative means for local authorities to enforce age of sale legislation for tobacco products and vapes in addition to existing penalties.

- Yes
- No
- Don't know

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Fixed penalty notice should be issued for breaches of age of sale legislation

for tobacco and e-cigarette products on the basis that

- Fixed penalty notices can act as deterrents to non-compliance for retailers in terms of financial impact and reputational damage
- Parents and guardians of children can be made aware, through the use of fixed penalty notices, of retailers where underage sales have occurred and support the authorities by reporting concerns about compliance
- Children in Northern Ireland continue to report accessing tobacco and ecigarette products in shops, indicating substantive issues with compliance.

Additional penalties, including potentially a closure order or loss of licence, should be issued for retailers found to be

- Selling single cigarettes or cigarettes in units less than 20
- Selling tobacco products that are not fully compliant with existing UK tobacco legislation (packaging)
- Non-compliance with regulations on tobacco point of sale display (and any future regulations on e-cigarette point of sale display)
- Selling e-cigarette products that are not compliant with existing UK and EU legislation.

The legislation should facilitate authorities to seize and test any tobacco or nicotine containing products suspected of being illicit or counterfeit.

As mentioned in Q4, 41% of 11-16-year-olds who smoke in Northern Ireland report buying their cigarettes from a shop (16). Between 1 April 2023 and 30 June 2023, 15 test purchases were undertaken for tobacco products with one Fixed Penalty Notice issued for selling to an under 18 and a further Fixed Penalty Notice issued for selling single cigarettes (20).

It is also evident that compliance with the ban on sales of e-cigarette products to those aged under 18 is poor. Between 1 April 2023 and 30 June 2023, 88 test purchases for nicotine inhaling products were undertaken, with 15 sales to under 18s reported (20).

## 26. What level of fixed penalty notice should be given for an underage tobacco sale?

- £100
- £200
- Other

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Fixed penalty notices should be set at £500 for an underage tobacco sale. A system of escalating fines and clear grounds for closure orders and permanent loss of licence should be devised and implemented across the UK.

Currently in Northern Ireland, there is a fixed penalty notice of £250, or a maximum fine of £5,000 if prosecuted and convicted by a court, for selling tobacco products to a person under the age of 18 (72). IPH proposes a sliding scale of penalty notices, with a maximum of three prosecutions resulting in termination of licence. The level of fixed penalty notice should be proportional to the level of harm caused by the product. A licencing system should be in place with penalty notices on public record.

## 27. What level of fixed penalty notice should be given for an underage vape sale?

- £100
- £200
- Other

Please explain your answer and provide evidence or your opinion to support further development of our approach. (maximum 300 words)

Fixed penalty notices should be set at £500 for an underage e-cigarette sale. The fixed penalty notice system should be based on escalating fines for repeat offenders and clear grounds for closure orders and permanent loss of licence.

At present there is evidence of limited compliance with the ban on sales of e-

cigarette products to those aged under 18. In Northern Ireland, 88 test purchases were undertaken between 1 April and 30 June 2023, with 15 sales to under 18s reported (20).

Currently in Northern Ireland, there is a fixed penalty notice of £250, or a maximum fine of £5,000 if prosecuted and convicted by a court, for selling nicotine inhaling products (including e-cigarettes/vapes) to a person under the age of 18 (72). IPH proposes a sliding scale of penalty notices, with a maximum of three prosecutions resulting in termination of licence. The level of fixed penalty notice should be proportional to the level of harm caused by the product.

#### **References**

1. Rodriguez L, Purdy J, McAvoy H. Mid-Term Review of the Ten-Year Tobacco Strategy for Northern Ireland: Stakeholder Engagement Report developed by the Institute of Public Health for the Department of Health in Northern Ireland. Dublin and Belfast; 2020.

2. Rodriguez L, McAvoy H. End of term Review of the Ten-Year Tobacco Control Strategy for Northern Ireland (2012-2022). Stakeholder Engagement Report. Dublin; 2022.

3. World Health Organization. WHO Report on the Global Tobacco Epidemic, 2008: the MPOWER package. Geneva; 2008.

4. Department of Health Northern Ireland. The 10 Year Tobacco Control Strategy For Northern Ireland: Final Review. Belfast; 2023.

5. Department of Health Social Services and Public Safety. Ten Year Tobacco Control Strategy for Northern Ireland. Belfast; 2012.

6. Royal College of Physicians in Ireland. Tobacco Free Ireland: Time For Tobacco 21. Dublin; 2022.

7. ASH. Public support for Government action on tobacco in Great Britain: Results of the 2023 ASH Smokefree survey. London; 2023.

8. Cosgrave EJ, Blake M, Murphy E, Sheridan A, Doyle F, Kavanagh P. Is the public ready for a tobaccofree Ireland? A national survey of public knowledge and attitudes to tobacco endgame in Ireland. Tobacco Control. 2023.

9. Government of Canada. Tobacco Products Appearance, Packaging and Labelling Regulations SOR/2019-107 2019 [Available from: <u>https://laws-lois.justice.gc.ca/eng/regulations/SOR-2019-107/page-1.html</u>.

10. Office for Health Improvement and Disparities. Mandating quit information messages inside tobacco packs: consultation 2023 [Available from: <u>https://www.gov.uk/government/consultations/mandating-quit-information-messages-inside-tobacco-packs/mandating-quit-information-messages-inside-tobacco-packs-consultation</u>.

11. Glasser AM, Roberts ME. Retailer density reduction approaches to tobacco control: A review. Health Place. 2021;67:102342.

12. Pearson AL, van der Deen FS, Wilson N, Cobiac L, Blakely T. Theoretical impacts of a range of major tobacco retail outlet reduction interventions: modelling results in a country with a smoke-free nation goal. Tob Control. 2015;24(e1):e32-8.

13. Donny EC, White CM. A review of the evidence on cigarettes with reduced addictiveness potential. Int J Drug Policy. 2022;99:103436.

14. WHO Framework Convention on Tobacco Control. Guidelines for implementation of Article 5.3 2013 [Available from: <u>https://fctc.who.int/publications/m/item/guidelines-for-implementation-of-article-5.3</u>.

15. National Institute for Health and Care Excellence (NICE). Evidence reviews for reducing proxy purchasing of tobacco and reducing illicit supply of tobacco: Tobacco: preventing uptake, promoting quitting and treating dependence: update: Evidence review C and D. London; 2021.

16. Foster C, Scarlett M, Stewart B. Young Persons' Behaviour and Attitudes Survey 2022 - Substance Use - (Smoking, Alcohol & Drugs). Belfast; 2023.

17. Office on Smoking and Health: National Center for Chronic Disease Prevention and Health Promotion. Smokeless Tobacco: Health Effects. 2020.

18. World Health Organization. WHO study group on tobacco product regulation: report on the scientific basis of tobacco product regulation: eighth report of a WHO study group: World Health Organization; 2021.

19. Gupta A, Sharda S, Yogitha P, Goel S, Goyal A, Gauba K. Herbal smoking products: a systematic content analysis and mapping of the e-retail market. Tob Control. 2022;31(4):572-5.

20. Personal communication from the Public Health Agency.

21. Reiter A, Hébert-Losier A, Mylocopos G, Filion KB, Windle SB, O'Loughlin JL, et al. Regulatory Strategies for Preventing and Reducing Nicotine Vaping among Youth: A Systematic Review. American Journal of Preventive Medicine. 2023.

22. Meernik C, Baker HM, Kowitt SD, Ranney LM, Goldstein AO. Impact of non-menthol flavours in ecigarettes on perceptions and use: an updated systematic review. BMJ Open. 2019;9(10):e031598.

23. Lindson N, Butler AR, Liber A, Levy DT, Barnett P, Theodoulou A, et al. An exploration of flavours in studies of e-cigarettes for smoking cessation: secondary analyses of a systematic review with meta-analyses. Addiction. 2023;118(4):634-45.

24. Institute for Global Tobacco Control. State of the Evidence: Flavored Tobacco Product Bans or Restrictions. 2020.

25. Public Health Agency Health Intelligence Unit. Knowledge, Perceptions and Behaviours of Young People towards E-cigarettes/Vaping. Belfast; 2023.

26. Action on Smoking and Health (ASH). Use of e-cigarettes (vapes) among young people in Great Britain. London; 2023.

27. Hua M, Omaiye EE, Luo W, McWhirter KJ, Pankow JF, Talbot P. Identification of Cytotoxic Flavor Chemicals in Top-Selling Electronic Cigarette Refill Fluids. Sci Rep. 2019;9(1):2782.

28. Omaiye EE, McWhirter KJ, Luo W, Pankow JF, Talbot P. High-Nicotine Electronic Cigarette Products: Toxicity of JUUL Fluids and Aerosols Correlates Strongly with Nicotine and Some Flavor Chemical Concentrations. Chem Res Toxicol. 2019;32(6):1058-69.

29. British American Tobacco. Delivering Multi-Stakeholder Value through The Enterprise of the Future. Deutsche Bank Conference2021.

30. Truth Initiative. Young e-cigarette users report widespread use of flavor blends and "concept" flavors like Iced Mango, Blue Dream, and OMG Washington DC2023 [Available from:

https://truthinitiative.org/research-resources/emerging-tobacco-products/young-e-cigarette-users-report-widespread-use-flavor.

31. Ali FRM, Seaman EL, Diaz MC, Ajose J, King BA. Trends in unit sales of cooling flavoured e-cigarettes, USA, 2017-2021. Tob Control. 2022.

32. Havermans A, Krüsemann EJZ, Pennings J, de Graaf K, Boesveldt S, Talhout R. Nearly 20 000 e-liquids and 250 unique flavour descriptions: an overview of the Dutch market based on information from manufacturers. Tob Control. 2021;30(1):57-62.

33. Netherlands Enterprise Agency RVO. Ban on flavoured e-cigarettes 2023 [Available from: <u>https://business.gov.nl/amendment/ban-flavoured-e-cigarettes/</u>.

34. Taylor E, East K, Reid JL, Hammond D. Awareness and use of short-fill e-liquids by youth in England in 2021: findings from the ITC Youth Tobacco and Vaping Survey. Tobacco Control. 2023.

35. Yoong SL, Hall A, Turon H, Stockings E, Leonard A, Grady A, et al. Association between electronic nicotine delivery systems and electronic non-nicotine delivery systems with initiation of tobacco use in individuals aged < 20 years. A systematic review and meta-analysis. PLoS One. 2021;16(9):e0256044.

36. Hoek J, Rowse B. Point-of-sale displays: a comparison of tobacco and vaping product retail strategies. Tobacco Control. 2023.

37. Donnelly S. Select Committee on Health debate – 12 October 2023: Public Health (Tobacco Products and Nicotine Inhaling Products) Bill 2023: Committee Stage. Dublin; 2023.

38. Therapeutic Goods Administration. Australian Government: Department of Health and Aged Care 2023 [Available from: <u>https://www.tga.gov.au/</u>.

39. Butler M. Taking action on smoking and vaping. 2023.

40. Smith MJ, MacKintosh AM, Ford A, Hilton S. Youth's engagement and perceptions of disposable ecigarettes: a UK focus group study. BMJ open. 2023;13(3):e068466.

41. Gravely S, Chung-Hall J, Craig LV, Fong GT, Cummings KM, Borland R, et al. Evaluating the impact of plain packaging among Canadian smokers: findings from the 2018 and 2020 ITC Smoking and Vaping Surveys. Tob Control. 2023;32(2):153-62.

42. Taylor E, Arnott D, Cheeseman H, Hammond D, Reid JL, McNeill A, et al. Association of Fully Branded and Standardized e-Cigarette Packaging With Interest in Trying Products Among Youths and Adults in Great Britain. JAMA Netw Open. 2023;6(3):e231799.

43. Tobacco and Alcohol Unit. Post-Enactment Report Public Health (Standardised Packaging of Tobacco) Act 2015 (No. 4 of 2015). Dublin; 2019.

44. Gravely S, Yong H-H, Reid JL, East KA, Liber AC, Cummings KM, et al. An examination of quitting smoking as a reason for vaping by the type of nicotine vaping device used most often among adults who smoke and vape: Findings from the Canada, England and the United States 2020 ITC Smoking and Vaping Survey. Preventive Medicine Reports. 2023;33:102201.

45. Mahase E. Paediatricians call for ban on disposable e-cigarettes as child vaping rises. British Medical Journal Publishing Group; 2023.

46. Health Service Executive. HSE Environmental Health Service issues a RAPEX safety alert notice relating to disposable electronic cigarettes: HSE; 2023 [Available from:

https://www.hse.ie/eng/services/news/media/pressrel/hse-environmental-health-service-issues-a-rapex-safety-alert-notice-relating-to-disposable-electronic-cigarettes.html.

47. Li X, Zhang Y, Zhang R, Chen F, Shao L, Zhang L. Association Between E-Cigarettes and Asthma in Adolescents: A Systematic Review and Meta-Analysis. Am J Prev Med. 2022;62(6):953-60.

48. Bourke M, Sharif N, Narayan O. Association between electronic cigarette use in children and adolescents and coughing a systematic review. Pediatr Pulmonol. 2021;56(10):3402-9.

49. Becker TD, Arnold MK, Ro V, Martin L, Rice TR. Systematic Review of Electronic Cigarette Use (Vaping) and Mental Health Comorbidity Among Adolescents and Young Adults. Nicotine Tob Res. 2021;23(3):415-25.

50. Chadi N, Schroeder R, Jensen JW, Levy S. Association Between Electronic Cigarette Use and Marijuana Use Among Adolescents and Young Adults: A Systematic Review and Meta-analysis. JAMA Pediatr. 2019;173(10):e192574.

51. Rothrock AN, Andris H, Swetland SB, Chavez V, Isaak S, Pagane M, et al. Association of E-cigarettes with adolescent alcohol use and binge drinking-drunkenness: A systematic review and meta-analysis. Am J Drug Alcohol Abuse. 2020;46(6):684-98.

52. Pourchez J, Mercier C, Forest V. From smoking to vaping: a new environmental threat? Lancet Respir Med. 2022;10(7):e63-e4.

53. Maquart P-O, Froehlich Y, Boyer S. Plastic pollution and infectious diseases. The Lancet Planetary Health. 2022;6(10):e842-e5.

54. Chapman M. Rise of single-use vapes sending tonnes of lithium to landfill: The Bureau of Investigative Journalism; 2022 [Available from: <u>https://www.thebureauinvestigates.com/stories/2022-07-15/rise-of-single-use-vapes-sending-tonnes-of-lithium-to-</u>

landfill#:~:text=Published%20July%2015%202022&text=A%20joint%20investigation%20by%20the,disposable %20vapes%20are%20currently%20booming.

55. Krause MJ, Townsend TG. Hazardous waste status of discarded electronic cigarettes. Waste Manag. 2015;39:57-62.

56. ASH Scotland. Briefing on e-cigarette waste. 2022.

57. Material Focus. One million single use vapes thrown away every week contributing to the growing ewaste challenge in the UK. 2022.

58. Zheng M. The Environmental Impacts of Lithium and Cobalt Mining: Earth.org; 2023 [Available from: <u>https://earth.org/lithium-and-cobalt-mining/</u>.

59. Berman ML, Zettler PJ, Jordt S-E. Synthetic Nicotine: Science, Global Legal Landscape, and Regulatory Considerations. World Health Organization technical report series. 2023;1047:35.

60. ASH Scotland. Nicotine pouches and gummies: Factsheet: ASH Scotland; 2023 [Available from: https://www.ashscotland.org.uk/media/884208/nicotine-pouches-and-gummies factsheet may 2023.pdf.

61. ASH. Awareness and use of nicotine pouches London: ASH; 2022 [

62. Tattan-Birch H, Jackson SE, Dockrell M, Brown J. Tobacco-free Nicotine Pouch Use in Great Britain: A Representative Population Survey 2020-2021. Nicotine Tob Res. 2022;24(9):1509-12.

63. Meijer B, Porter M. Netherlands bans sale of all nicotine pouches: Reuters; 2023 [Available from: https://www.reuters.com/world/europe/netherlands-bans-sale-all-nicotine-pouches-2023-04-21/https://doi.org/10.1093/ntr/ntac099.

64. World Health Organization. Tobacco: Poisoning our planet. Geneva; 2022.

65. Tobacco Tactics. Tobacco and the Environment: Tobacco Tactics; 2022 [Available from: <u>https://tobaccotactics.org/article/tobacco-and-the-environment/</u>.

66. European Commission. Directive 2014/40/EU of the European Parliament and of the Council of 3 April 2014 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products and repealing Directive 2001/37/EC. Off J Eur Union. 2014;127:1-38.

67. Cho HJ, Dutra LM, Glantz SA. Differences in Adolescent E-cigarette and Cigarette Prevalence in Two Policy Environments: South Korea and the United States. Nicotine Tob Res. 2018;20(8):949-53.

68. Anderson DM, Matsuzawa K, Sabia JJ. Cigarette taxes and teen marijuana use. National tax journal. 2020;73(2):475-510.

69. Han D-H, Seo D-C, Lin H-C. Statewide vaping product excise tax policy and use of electronic nicotine delivery systems among US young adults, 2014–2019. Tobacco control. 2023;32(3):352-8.

70. Chaloupka FJ, Straif K, Leon ME. Effectiveness of tax and price policies in tobacco control. Tobacco control. 2011;20(3):235-8.

71. Critchlow N, Moodie C, Best C, Stead M. Anticipated responses to a hypothetical minimum price for cigarettes and roll-your-own tobacco: an online cross-sectional survey with cigarette smokers and exsmokers in the UK. BMJ Open. 2021;11(3):e042724.

72. NI Direct. Smoking and vaping regulations in Northern Ireland Belfast: nidirect; 2022 [Available from: <a href="https://www.nidirect.gov.uk/articles/smoking-and-vaping-regulations-northern-ireland#:~:text=prisons-">https://www.nidirect.gov.uk/articles/smoking-and-vaping-regulations-northern-ireland#:~:text=prisons-</a>, Restrictions%20on%20retailers, under%20the%20age%20of%2018.