Public Health England

Protecting and improving the nation's health

Use of e-cigarettes in public places and workplaces

Advice to inform evidence-based policy making

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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Published July 2016
PHE publications gateway number: 2016129

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Introduction

Smoking is a uniquely harmful activity. Despite continued declines in smoking rates, it remains the leading cause of preventable illness and premature death in England, with the damage spreading far beyond smokers, to their families and others around them, to their communities and to wider society. The estimated total annual cost of smoking to society in England, including lost productivity and health and social care costs, is £13.9bn.[i]

Legislation under the Health Act 2006, which prohibits smoking in enclosed public places and workplaces, on public transport and in vehicles used for work, is based on conclusive scientific evidence of the direct health harm caused to bystanders through the inhalation of secondhand smoke.

E-cigarette use, known as vaping, is not covered by smokefree legislation. E-cigarettes do not burn tobacco and do not create smoke. While debate continues about their absolute level of safety, the consensus across England's public health community is that e-cigarettes are significantly safer for users than smoked tobacco. An independent review of the latest evidence[ii] published by Public Health England (PHE) in 2015 found that, based on the international peer-reviewed evidence, vaping is around 95% safer for users than smoking. It also confirmed the findings of PHE's 2014 independent evidence review,[iii] that there is no evidence of harm to bystanders from exposure to e-cigarette vapour and the risks to their health are likely to be extremely low.

E-cigarettes and the endgame for tobacco

Around 2.8m adults in Great Britain use e-cigarettes. Almost all are smokers or ex-smokers.[iv] E-cigarettes have rapidly become the most popular stop smoking aid in England[v] and a developing body of evidence[vi] shows that they can be effective. While experimentation with e-cigarettes among young people has increased over recent years, regular use remains rare and almost entirely confined to current or ex-smokers.[vii]

PHE's ambition is to secure a tobacco-free generation by 2025. We believe e-cigarettes have the potential to make a significant contribution to its achievement. Realising this potential depends on fostering an environment in which e-cigarettes can provide a route out of smoking for England's eight million smokers, without providing a route into smoking for children or non-smokers.

Balancing risks and opportunities

The role of e-cigarettes in tackling tobacco dependency, especially in the long term, is hotly debated within public health and wider society. We don't yet know everything there is to know about e-cigarettes and their impact. For that reason, some commentators cite the 'precautionary principle' in support of prohibition until more evidence is available. Our stance on the precautionary principle is that it requires analysis of the consequences of action and inaction, in this context prohibition as well as toleration. Both approaches demand evaluation, neither is without its risks. Our aim is to build an evidence-based consensus around an approach to e-cigarettes that harnesses the potential benefits to individual and public health while managing the risks.

Appropriate regulation is essential to ensure that e-cigarettes are as safe and effective as possible and to protect against uptake among young people. The UK has one of the most comprehensive regulatory systems for e-cigarettes in the world, with high standards of quality and safety, and tight restrictions on promotion and advertising. The 2015 prohibition on selling e-cigarettes to under-18s, and on adults buying them on behalf of under-18s, has provided additional protection for children and young people.

It is also essential that we continue to monitor the evidence on uptake of e-cigarettes, their health impact on individuals and populations, and their effectiveness for smoking cessation as the technology and products develop.

Finally, if e-cigarettes are to do their job of making smoking less of a social norm, they must be clearly positioned as products that help adult smokers to quit. In this way, vaping becomes synomyous with the rejection of smoking.

Concerns on e-cigarettes, the evidence and the implications

The main concerns surrounding e-cigarettes focus on their uptake by young people, their potential to renormalise smoking, safety for users and bystanders, and their effectiveness as quitting aids. A summary of the current evidence is on page 11.

Further concerns regarding e-cigarette use in public places include the possible reversal of advances in clean air achieved by banning smoking in public places, and a potential normalisation of nicotine addiction. These concerns will resonate with some people, and are especially relevant to risk assessments for particular settings. For instance, when developing its policy on e-cigarette use, it would be rational for a school to prioritise the risk of youth uptake and to decide to treat e-cigarettes in the same way as other age-restricted products and prohibit them onsite.

How to use this guide

Policies and practice on e-cigarette use in public places and workplaces are evolving and need to continue to do so in the light of the emerging evidence. Action on Smoking and Health and the Chartered Institute of Environmental Health took a lead in this field with the publication in 2015 of their 'five questions' briefing.[viii]

PHE has produced this guide in consultation with public health partners and other stakeholders.* It is deliberately non-prescriptive, because no one-size-fits-all answer exists to the issue of e-cigarette use in public places and workplaces. Instead, by setting out some key principles for an approach that fits with our current knowledge and protects against the unintended consequences of being either too permissive or too prohibitive, it can help organisations develop their own policies.

*For details see 'Report of PHE stakeholder 'conversation' on use of e-cigarettes in enclosed public places and workplaces', Public Health England, July 2016

Use of e-cigarettes in public places and workplaces: key principles to guide policy making

These five principles guide the development of evidence-based policies that maximise the potential for e-cigarettes to improve public health while managing the risks in any particular setting. It is recommended that policies are kept under regular review to take account of developments in the evidence base and changes in the regulatory environment.

1. Make clear the distinction between vaping and smoking

Smoking is defined clinically[ix] and in law,[x] and e-cigarette use does not meet the definition in either context. Based on the international peer-reviewed evidence, e-cigarettes carry a fraction of the risk of cigarettes and have the potential to help drive down smoking rates and improve public health. To the extent that they cut the number of smoking role models, reduce public smoking and provide a role model for the rejection of smoking, e-cigarettes can help to denormalise smoking. Therefore policies should make clear the distinction between vaping and smoking.

Considerations for policy development:

- while taking account of the specific circumstances applying to a public place or workplace, policies on e-cigarette use should be evidence-based and should aim to maximise the benefits while managing any identified risks
- when communicating an organisation's policy on e-cigarette use, make clear the distinction between vaping and smoking, and the evidence on the relative risks for users and bystanders
- to avoid confusion, do not use smoking terminology when referring to e-cigarettes. E-cigarette use is often known as 'vaping' and e-cigarette users are often known as 'vapers'
- NICE guidance for NHS secondary care recommends that estates should become completely smokefree, indoors and outdoors. Managers should seek to develop approaches to e-cigarettes that support smokefree sites

2. Ensure policies are informed by the evidence on health risks to bystanders

International peer-reviewed evidence indicates that the risk to the health of bystanders from exposure to e-cigarette vapour is extremely low. This is in contrast to the conclusive evidence of harm from exposure to secondhand smoke, which provides the

basis for UK smokefree laws. The evidence of harm from secondhand exposure to vapour is not sufficient to justify the prohibition of e-cigarettes. Managers of public places and workplaces should ensure that this evidence informs their risk assessments.

Considerations for policy development:

- e-cigarette use is not covered by smokefree legislation and should not routinely be included in the requirements of an organisation's smokefree policy
- reasons other than the health risk to bystanders may exist for prohibiting e-cigarette use in all or part of a public place or workplace, such as commercial considerations and professional etiquette
- people with asthma and other respiratory conditions can be sensitive to a range of environmental irritants, which could include e-cigarette vapour. The interests of such individuals should be taken into account when developing policies and adjustments made where necessary
- vaping can in certain circumstances be a nuisance or distraction for people nearby. Where a decision is taken to allow vaping in an enclosed place, policies could consider some simple etiquette guidelines for vapers, such as minimising the production of visible vapour

3. Identify and manage risks of uptake by children and young people

E-cigarette use is not recommended for young people. In the UK protection is in place via prohibitions on the sale of e-cigarettes to under-18s and purchase by adults on behalf of under-18s, and restrictions on advertising. However, because adult smokers use e-cigarettes to quit smoking and stay smokefree, the products can help reduce children's and young people's exposure to secondhand smoke and smoking role models. In developing policies on e-cigarette use in child and youth settings it is appropriate to guard against potential youth uptake, while balancing this with the need to foster an environment where it is easier for adults not to smoke.

Considerations for policy development:

- UK data shows little evidence that young people who try e-cigarettes progress to regular use, other than those who had previously smoked. Managers of child and youth settings such as schools have a particular responsibility in managing the risk of youth uptake of e-cigarettes and might want to treat e-cigarettes as they would any other age-restricted product
- while it is not recommended to allow adults who use or work in child and youth settings to vape in view of children, consider ways to make it easier to vape than to smoke. Approaches might include allowing vaping in a designated adults-only indoor area or allowing vaping but prohibiting smoking in outdoor areas

- while it is preferable for young people neither to smoke nor to vape, when assessing the risks policies should give priority to supporting young people not to smoke

4. Support smokers to stop smoking and stay smokefree

E-cigarettes are used almost exclusively by smokers and ex-smokers and are now the most popular stop smoking aid in England. To support smokers to stop smoking and stay smokefree, a more enabling approach may be appropriate in relation to vaping to make it an easier choice than smoking. In particular, vapers should not be required to use the same space as smokers, as this could undermine their ability to quit smoking and stay smokefree, particularly among those most heavily addicted.

Considerations for policy development:

- e-cigarettes have significant potential to help reduce tobacco use and the serious harm it causes to smokers, those around them and wider society. Recognition of this should be at the centre of policies on e-cigarette use in public places and workplaces
- while e-cigarettes are not currently available as licensed medicines, it is expected that products will come onto the market that can be prescribed on the NHS by GPs and other healthcare professionals alongside other stop smoking medicines
- to maximise the number of smokers switching to e-cigarettes, vaping should be made a more convenient, as well as safer, option
- while smokefree law protects people from the harm of secondhand smoke, forcing smokers outdoors has increased public visibility of smoking, including to children and young people. Having a more enabling approach to vaping can mitigate this and help make smoking less of a social norm
- smokers can achieve their desired blood plasma nicotine level with one cigarette every hour or so, and in a short space of time. Vaping provides a generally lower blood nicotine level and takes longer to reach a desired level, requiring frequent interim top-ups This difference should be taken into account, particularly when developing policies for workplaces
- it is never acceptable to require vapers to share the same outdoor space with smokers. Where a designated outdoor smoking area has been provided in a public place or workplace, vapers should be allowed to vape elsewhere

5. Support compliance with smokefree law and policies

Compliance with smokefree requirements can be maintained and supported by emphasising a clear distinction between smoking and vaping. Managers should indicate accurately where vaping is permitted or prohibited, and communicate the policy clearly to everyone it affects.

Considerations for policy development:

- UK smokefree law prohibiting smoking in enclosed public places and workplaces is well established, and compliance levels are high. While some e-cigarettes physically resemble cigarettes, the distinctive odour and ash of lit tobacco makes it generally easy to distinguish between someone who is vaping and someone who is smoking.
- policies on e-cigarette use should be communicated clearly so that everybody using a public place or workplace is aware of the policy and understands where vaping is or is not allowed. Where appropriate, this could include signs.
- the Action on Smoking and Health / Chartered Institute of Environmental Health 'five questions' briefing* advises: "It should be remembered that offering a safe and effective alternative to smoking tobacco to people who are addicted to nicotine may help support compliance with smokefree legal requirements and make smokefree policies easier to implement."

*'Will you permit or prohibit electronic cigarette use on your premises? Five questions to ask before you decide', ASH/CIEH, October 2015

Summary of the current evidence on e-cigarettes

Prevalence and patterns of use

Adults

An estimated 2.8m adults in Great Britain currently use e-cigarettes. Of these, 1.4m are smokers and 1.3m have completely stopped smoking. The principal reasons given for e-cigarette use are to support cutting down or quitting tobacco use and to help avoid relapse to smoking. Regular use of e-cigarettes among never smokers is negligible at 0.2%.

Early e-cigarettes all looked like cigarettes, however rapid innovation has resulted in a range of product designs. Rechargable devices with a reservoir/tank have increased in popularity, with over two thirds of vapers (71%) using this type of product in 2016. Cigalike or pen-type devices with pre-filled cartridges are used by 23% of vapers and only 3% use disposable products.[xi]

Young people

Evidence from UK studies indicates that while young people's awareness of, and experimentation with, e-cigarettes has increased, regular use remains rare and almost entirely confined to those who are current smokers or have smoked in the past.

Around 12% of British youth have ever tried e-cigarettes. Around 2% use e-cigarettes at least monthly and 0.5% weekly. Among young people who have never smoked, regular use (at least monthly) is 0.3% or less.

Overall, the youth data suggests that e-cigarettes are attracting very few young people who have never smoked into regular use.[xii]

E-cigarettes and smoking – renormalising or denormalising?

Concerns have been expressed that the presence of e-cigarettes might act to renormalise smoking, undermining decades of work to tackle the harm from tobacco. So far, there is no evidence that e-cigarettes are acting as a route into smoking for children or non-smokers. The authors of PHE's independent review of the latest evidence found that: "Since EC [e-cigarettes] were introduced to the market, smoking prevalence among adults and youth has declined. Hence there is no evidence to date

that EC are renormalising smoking, instead it's possible that their presence has contributed to further declines in smoking, or denormalisation of smoking."

The gateway hypothesis – the theory that the use of one drug leads to the use of another drug – features prominently in the academic and public discourse on e-cigarettes in relation to young people. In their review, the authors address this, pointing out that "The gateway theory is ill defined and we suggest its use be abandoned until it is clear how it can be tested in this field. Whilst never smokers are experimenting with EC, the vast majority of youth who regularly use EC are smokers. Regular EC use in youth is rare." [xiii]

Safety

For users

E-cigarettes are not risk free, but based on current evidence they carry a fraction of the risk of cigarettes. The authors of PHE's independent review of the latest evidence concluded that using an e-cigarette (known as 'vaping') is around 95% safer than smoking.[xiv] In an authors' note published to accompany the report, they explain that this estimate is based on the facts that:

- the constituents of cigarette smoke that harm health – including carcinogens – are either absent in e-cigarette vapour or, if present, they are mostly at levels much below 5% of smoking doses (mostly below 1% and far below safety limits for occupational exposure)
- the main chemicals present in e-cigarettes only have not been associated with any serious risk[xv]

Their overall assessment is that on current evidence, there is no doubt that smokers who switch to vaping dramatically reduce the risks to their health.

For bystanders

There is no published scientific evidence of harm to bystanders from exposure to e-cigarette vapour and the available evidence indicates that any risk of harm is extremely low, especially when compared with tobacco smoke.

In their independent evidence review conducted for PHE and published in 2014, Professor John Britton and Dr Ilze Bogdanovica concluded that: "Electronic cigarettes do not produce smoke so the well-documented effects of passive exposure of others to cigarette smoke are clearly not relevant…laboratory work suggests that electronic cigarette use in an enclosed space exposes others to nicotine at levels about one tenth

generated by a cigarette, but little else. The health risks of passive exposure to electronic cigarette vapour are therefore likely to be extremely low."[xvi] Following their assessment of the latest evidence, the authors of PHE's 2015 evidence review reached a similar conclusion: "EC [e-cigarettes] release negligible levels of nicotine into ambient air with no identified health risks to bystanders."[xvii]

Effectiveness for smoking cessation

PHE is clear that the best way for smokers to protect their health and the health of those around them is to stop immediately, completely and permanently. We also recognise that not all smokers are ready or able to stop in one step, and for those people we support the approaches set out in the NICE public health guidance on tobacco harm reduction (PH45). These include: cutting down to quit, reducing the amount smoked and temporary abstinence from smoking, with or without using licensed nicotine-containing products. Our advice is for smokers to switch to e-cigarettes and for e-cigarette users to stop smoking completely.

E-cigarettes have rapidly become the most popular stop smoking aid in England.[xviii] In PHE's independent review of the latest evidence, the authors conclude that: "Recent studies support the [2014] Cochrane Review[xix] findings that EC [e-cigarettes] can help people to quit smoking and reduce their cigarette consumption. There is also evidence that EC can encourage quitting or cigarette consumption reduction even among those not intending to quit or rejecting other support. It is not known whether current EC products are more or less effective than licensed stop-smoking medications, but they are much more popular, thereby providing an opportunity to expand the number of smokers stopping successfully…The evidence on EC used *alongside smoking* on subsequent quitting of smoking is mixed."[xx]

Evidence indicates that e-cigarettes are particularly effective when combined with additional support from local stop smoking services: in 2014-15, smokers in England who combined e-cigarette use with behavioural support had the highest quit rates, with two out of three quitting successfully.[xxi]

A much-cited study by researchers at King's College London and University College London found that the type of e-cigarette used and the frequency of use had an impact on outcomes. They concluded that daily use of tank models may give smokers a better chance of quitting.[xxii]

Impact on compliance with smokefree legislation

The ASH/CIEH guide 'Developing an organisational approach to the use of electronic cigarettes on your premises' advises that: "There are concerns that the appearance and use of electronic cigarettes could undermine our high levels of compliance with smoke-

free requirements. However, burning tobacco produces a distinctive and pervasive smell as well as deposits of ash. The Chartered Institute of Environmental Health advises that attempts to pass off smoking as using an electronic cigarette should be able to be detected by a diligent investigator."[xxiii]

The CIEH policy on use of electronic cigarettes in indoor workplaces and public places acknowledges that the organisation has been made aware of enforcement problems occurring in Wales, including some cases being lost when the enforcement officer's evidence is insufficient to secure a conviction. Taking this into account, the policy states: "A statutory prohibition on the use of nicotine vapourisers because of a limited number of smokefree legislation enforcement failures cannot be justified. This would be particularly perverse if the evidence is accepted of the effectiveness of nicotine vapourisers in assisting smokers to stop or reduce their smoking and all other risks are considered to be acceptable."

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