GOV.UK

Research and analysis

Vaping in England: 2020 evidence update summary

Published 4 March 2020

Contents

Print this page

This publication is available at https://www.gov.uk/government/publications/vaping-in-england-evidence-update-march-2020/vaping-in-england-2020-evidence-update-summary

1. Aim of the report

This is the sixth report in a series of independent reports commissioned by Public Health England (PHE) to summarise evidence on e-cigarettes to inform policies and regulations.

Despite reductions in smoking prevalence, smoking remains the biggest single cause of preventable death and disease and a leading cause of health inequalities. So, alternative nicotine delivery devices that are less harmful could play a crucial role in reducing this health burden.

This report presents updates on the prevalence of vaping among young people and adults and reviews literature on vaping among people with mental health conditions and pregnant women.

A comprehensive e-cigarette safety review will be the focus of a future report.

1.1 Terminology

Vaping products refers to e-cigarettes and refill containers (e-liquids).

Vapers refers to people who regularly use vaping products and vaping is the act of using a vaping product.

Our terms do not include cannabis vaping or the vaping of other illicit substances, which are not the subject of this report.

1.2 Current regulations

Non-nicotine containing vaping products fall under the General Product Safety Regulations 2005 (http://www.legislation.gov.uk/uksi/2005/1803/contents/made), enforced by local trading standards.

Nicotine-containing vaping products are regulated more stringently through the revised European Union Tobacco Products Directive (2014/40/EU) (https://ec.europa.eu/health/tobacco/products/revision_en) (TPD), translated into UK law through the Tobacco and Related Products Regulations 2016 (http://www.legislation.gov.uk/uksi/2016/507/contents/made) (TRPR), which the government has committed to review by May 2021.

There are no medicinally licensed nicotine vaping products in the UK.

Selling vaping products to anyone under 18 is prohibited and so is buying vaping products for anyone under 18.

1.3 Recent developments

Nicotine vaping products have continued to evolve. The use of nicotine salt technology is becoming more popular.

Between 20 May 2016 (implementation of TRPR) and 9 January 2020, the Medicines and Healthcare products Regulatory Agency (MHRA) had received 84 reports of 245 adverse reactions believed to be associated with nicotine-containing vaping products through its Yellow Card Scheme (https://yellowcard.mhra.gov.uk/). A report is not proof that the reaction was caused by a vaping product, just that the reporter suspected it might have been.

In the US, where there is a very different regulatory system for vaping products (including products used to vape cannabis), there was a spate of serious lung diseases and deaths which appeared to peak in late 2019. This outbreak seems to have been caused by people vaping the cannabis derivative tetrahydrocannabinol (THC) oil and vitamin E acetate.

There has been no similar lung disease outbreak in England, although the MHRA has received reports of 4 deaths through the Yellow Card Scheme where vaping was suspected to be implicated (2 before the implementation of TRPR and 2 more recently). However, the connection with nicotine-containing vaping products has not yet been established. There is more information in the January 2020 MHRA drug safety update (https://www.gov.uk/drug-safety-update/e-cigarette-use-or-vaping-reporting-suspected-adverse-reactions-including-lung-injury). There are also 2 published serious cases of respiratory illness that have been linked to vaping.

Violations of the age of sale law for nicotine-containing vaping products (and for cigarettes) and the use of social media to promote vaping products are being reported. The Advertising Standards Authority recently upheld some complaints where the marketing of vaping products had violated the UK Advertising Code (https://www.asa.org.uk/codes-and-rulings/advertising-codes/non-broadcast-code.html).

Most mental health trusts in England allow vaping but there are inconsistencies in policy and practice. The report of the House of Commons Science and Technology Committee enquiry on e-cigarettes (https://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/inquiries/parliament-2017/e-cigarettes-17-19/) recommended that NHS England produce guidance on vaping in mental health trusts, which is still outstanding.

1.4 Implications

Since non-nicotine vaping products are less stringently regulated than nicotine-containing products, they may need to be reviewed alongside the forthcoming review of nicotine vaping regulations.

NHS England should issue guidance on vaping in mental health trusts to ensure consistency and equity across the NHS.

The spate of lung injuries and deaths in the US is not attributable to the regulated nicotine vaping products currently sold in England. But all suspected adverse reactions or suspected deaths need to be assessed.

The conclusions of our previous reports are still important messages for preventing harm. These can be broadly summarised as follows:

- vaping regulated nicotine products has a small fraction of the risks of smoking, but this does not mean it is safe
- smokers should be encouraged to try regulated nicotine vaping products along with smoking cessation medications and behavioural support. This will greatly increase their chances of successfully stopping smoking
- people who have never smoked should be encouraged not to smoke and not to vape
- vapers should be encouraged to use regulated nicotine products only and stop smoking completely

2. Methods

We have used data from 6 nationally representative surveys to examine the prevalence and characteristics of vaping in England. We have also screened the international academic literature for studies published between November 2018 and October 2019 that report vaping prevalence.

We have used data collected by NHS Digital from stop smoking services, data from the MHRA's Yellow Card Scheme (https://yellowcard.mhra.gov.uk/) and data from peer-reviewed publications.

We have conducted 2 systematic reviews of the published academic literature that identify the evidence on vaping among people with a mental health condition and on vaping in pregnancy.

3. Vaping among young people

3.1 Main findings

Current vaping prevalence (weekly or less than weekly) among young people in England has remained reasonably steady with the best recent estimates putting it at 6% of 11 to 15-year-olds in 2018 and 5% of 11 to 18-year-olds in 2019.

Older children are more likely to vape. Current use among 11-year-olds was estimated at less than 1% in 2018, compared with 11% of 15-year-olds.

Current vaping is mainly concentrated in young people who have experience of smoking. Less than 1% of young people who have never smoked are current vapers.

No surveys reported much increase in vaping prevalence.

Current smoking prevalence (weekly or less than weekly) among 11 to 15-year-olds halved between 2009 (11%) and 2018 (5%,) but has remained relatively steady since 2014.

Young people's perceptions of the relative harms of vaping compared with smoking are increasingly out of line with the evidence. The proportion of 11 to 18-year-olds who thought that vaping was less harmful than cigarettes declined from 68% in 2014 to 52% in 2019.

Just over a third of 11 to 15-year-olds thought it was OK to try vaping and just under a quarter thought it was OK to vape once a week.

Most young people who have tried vaping, do so from curiosity.

Tank models, which are reusable and rechargeable kits that users can refill with liquid, remain the most popular vaping device type used by young people.

Recent UK surveys have not asked about the use of flavours among young people who vape.

Almost 60% of 11 to 15-year-olds who vaped regularly (more than once a week) reported being given vaping products, mostly by friends. But many also reported buying vaping products from other people, shops and the internet.

Comparisons across countries are hampered by inconsistent questions and survey methods. One survey that compared vaping among 16 to 19-year-olds from 2017 to 2018, using consistent methods, found lower levels of vaping in England compared to Canada and the US.

3.2 Implications

Vaping and smoking prevalence among young people in England should continue to be closely monitored.

Questions on flavour preferences and reasons for vaping among young people should be added to large nationally representative surveys.

Enforcement of age of sale regulations needs to be improved.

4. Vaping among adults

4.1 Main findings

Current vaping prevalence (any current use) among adults in England has remained stable since 2014, and in 2019 was between 5% and 7%.

Current vaping prevalence among smokers varied between 14% and 20% across surveys, again showing little change since 2014.

Current vaping prevalence among former smokers has continued to rise and was 12% to 13% in 2019.

Vaping remains most common among smokers and former smokers, with less than 1% of people who have never smoked currently vaping.

The proportion of current smokers who have not tried vaping products remained at 37% between 2018 and 2019.

Smoking among adults in England has continued to decline over the past 10 years and in 2019 was around 15%.

Vaping prevalence is highest among people in more disadvantaged socio-economic groups, reflecting their higher levels of smoking.

Perceptions of harm from vaping among smokers are increasingly out of line with the evidence. The proportion who thought vaping was less harmful than cigarettes declined from 45% in 2014 to 34% in 2019. These misperceptions are particularly common among smokers who do not vape.

Most adults use vaping products to help them quit smoking.

Vapers said that banning flavoured liquids would deter them from using vaping products to help them quit or reduce their smoking. It could also push current vapers towards illicit products.

Similar to previous years, data from stop smoking services in England suggests that when a vaping product is used in a quit attempt, either alone or with licensed medication, success rates are comparable to, if not higher than, licensed medication alone.

Where international information is available, adult vaping prevalence in England appears to be higher than in other countries.

4.2 Implications

The data presented here suggests that vaping has not undermined the declines in adult smoking.

Increasingly incorrect perceptions among the public about the harms of vaping could prevent some smokers using vaping products to quit smoking.

A ban on flavoured liquids could have adverse effects and unintended consequences for smokers using vaping products to quit. It should only be considered with caution.

5. Vaping among people with mental health conditions

5.1 Main findings

In our systematic review, we did not identify any vaping prevalence studies from England, so we are unable to report on rates of vaping among people with mental health conditions in England, or in other parts of the UK.

We identified 17 studies that reported vaping prevalence in people with mental health conditions outside the UK.

Definitions of current vaping varied across studies, for example, any use in the past 30 days or use every day, on some days or rarely. So, the findings and any comparisons between studies should be treated with caution.

Overall, rates of current vaping ranged from 3% to 20% among people with mental health conditions in nationally representative population samples. Rates ranged from 0.3% to 21% in representative state-wide or regional survey samples and from 7% to 45% among participants recruited from clinical settings. These high rates of vaping likely reflect the high prevalence of smoking among people with mental health conditions.

Among nationally representative and state-wide or regional samples, current smokers had the highest rates of ever vaping (up to 75%) and current vaping rates (up to 41%).

There are currently no published randomised controlled trials (RCTs) evaluating vaping products for smoking cessation or reduction for smokers with mental health conditions. We identified 4 single group ‘pre-post studies’, a type of study looking at participants before and after an intervention, and a secondary data analysis of RCT data that included a sample of people with a mental health condition. In 4 of the studies, participants were not motivated to quit. Complete abstinence from smoking was achieved by 7% to 14% of participants between 4-week and 12-month follow-up across the studies. Study participants who vaped significantly reduced their cigarette intake.

The sparse literature that exists on health professionals’ knowledge and attitudes about vaping suggests that many are ambivalent about the role and use of vaping products among smokers with mental health conditions. It also suggests there are unmet training needs.

5.2 Implications

One of the actions in the government’s Tobacco Control Plan for England (https://www.gov.uk/government/publications/towards-a-smoke-free-generation-tobacco-control-plan-for-england) was to explore how more reliable data could be collected to better inform tobacco control measures to support people with mental health conditions. Ongoing studies on vaping (and smoking) in these people in England will help fill some evidence gaps. But more nationally representative data is still needed, particularly for people with severe mental health conditions.

High rates of smoking and vaping together suggest that smokers with mental health conditions should be advised and supported to quit smoking completely, as soon as they feel able to do so.

More research is needed on vaping among people with mental health conditions and its efficacy and safety for quitting smoking.

There are signs that health professionals need more tailored training on the use of vaping products among people with mental health conditions.

Resources on vaping among people in mental health settings are available from the Mental Health & Smoking Partnership in England (http://smokefreeaction.org.uk/smokefree-nhs/smoking-and-mental-health/mhspresources/mhsp-e-cigarettes/). Since vaping is allowed in most mental health trusts in England, the experience of using vaping products over time in these settings should be explored, including their effect on completely switching from smoking to vaping.

6. Vaping during and after pregnancy

6.1 Main findings

Our systematic review showed a lack of evidence on the prevalence of vaping in pregnancy in England, the effects of vaping on smoking during pregnancy and following childbirth, and on the effects of vaping on maternal health or pregnancy outcomes.

As in other populations, pregnant women who vape are likely to do so to stop smoking.

Vaping in pregnancy is very rare among those who have not smoked.

Pregnant smokers and health professionals are unsure about the relative risks of vaping for mother and baby and clinical practice on vaping in pregnancy varies.

6.2 Implications

The lack of nationally representative data on vaping in pregnancy in England needs to be addressed through research programmes.

More research is needed on the associations between vaping in pregnancy and smoking cessation and health outcomes.

The common reasons for vaping in pregnancy are to stop smoking, prevent a return to smoking and reduce harms. So, any uncertainty about the harms or risks of vaping in pregnancy is likely to discourage vaping by pregnant smokers.

The inconsistent attitudes of health professionals to vaping in pregnancy show that guidance is urgently needed.

While they await the outcomes of ongoing research, health professionals can use guidance and recommendations from the Smoking in Pregnancy Challenge Group (http://smokefreeaction.org.uk/smokefree-nhs/smoking-in-pregnancy-challenge-group/smoking-in-pregnancy-challenge-group-resources/) on vaping before, during and after pregnancy, for maternity and other health professionals. The guidance says that vaping should be supported if it helps women or households with children to quit smoking or stay smokefree and that regulated nicotine vaping products will always be preferable to smoking.

7. Authors and citation

7.1 Suggested citation

McNeill, A., Brose, L.S., Calder, R., Bauld, L., and Robson, D. (2020). Vaping in England: an evidence update including mental health and pregnancy, March 2020: a report commissioned by Public Health England. London: Public Health England.

7.2 Authors

Ann McNeill (King's College London), Leonie S Brose (King's College London), Robert Calder (King's College London), Linda Bauld (University of Edinburgh, Cancer Research UK), Debbie Robson (King's College London).

Print this page