E-cigarettes and primary care

A cross-sectional survey of nurses and GPs across the UK

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CANCER RESEARCH UK

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Reference

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Authors

Anne Ferrey[1], Benjamin Fletcher[1], Timothy Coker[2], Sarah Bullock[3], Alizee Froguel[3], Jake Harrison[2], Jyotsna Vohra[2], Paul Aveyard[1]

[1] University of Oxford; [2] Cancer Policy Research Centre, Cancer Research UK; [3] Cancer Prevention Policy, Cancer Research UK

AF, BF and PA designed and performed the study. All authors contributed to writing the report.

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Cancer Research UK

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Cancer Research UK is the world's largest independent charity dedicated to saving lives through research. We support research into all aspects of cancer which is achieved through the work of over 4,000 scientists, doctors and nurses. In 2018/19, we committed £546 million to fund and facilitate research in institutes, hospitals and universities across the UK. Thanks to research, survival in the UK has doubled since the 1970s so, today, 2 in 4 people survive their cancer. Our ambition is to accelerate progress and see 3 in 4 patients surviving their cancer by 2034. We receive no funding from Government for our research.

Cancer Research UK is a registered charity in England and Wales (1089464), Scotland (SC041666) and the Isle of Man (1103)

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List of acronyms

COM-B	Capability, Opportunity and Motivation model of Behaviour
CRUK	Cancer Research UK
GP	general practitioner
NICE	National Institute for Health and Care Excellence
NRT	nicotine replacement therapy
SSS	stop smoking service
TDF	Theoretical Domains Framework

Foreword

In 1988, Dr Gro Harlem Brundtland, former Director-General, World Health Organization, described tobacco as "one of the greatest emerging health disasters in human history". Globally it is estimated that 100 million people died from smoking in the 20th century. The burden of the consequences of smoking are borne across every part of society. However, it is the less well-off who are disproportionately affected, both globally and within the UK.

In 1948 the UK had the highest prevalence of smoking the world, with 82% of males and 41% of females, aged 16 and over, using tobacco products. Since then a multi-layered approach, involving politicians, policymakers and medical professionals has facilitated a dramatic ongoing reduction in smoking prevalence, such that in the 70 years to 2018 UK smoking prevalence declined by more than three quarters, to 14.7%. However, there are still 115,000 deaths in the UK, and 7.1 million globally, attributed to smoking every year. More must be done to continue these declines in smoking prevalence – and this includes delivery of smoking cessation support by clinicians in primary care.

E-cigarettes are a new technology that provides both a challenge and an opportunity for the future of tobacco control. While they should not be used by people who don't smoke, many people who smoke find them to be useful for helping them move away from tobacco, and currently they are the most frequently used tool for smoking cessation in the UK. Considering the important role that primary care practitioners play in helping people to quit smoking, it is crucial that these clinicians know how to discuss e-cigarettes with their patients using evidence-based information. This report shows that the topic of e-cigarettes is frequently raised by patients who smoke, yet primary care clinicians generally feel uncomfortable advising on e-cigarettes, and feel they lack sufficient knowledge on them. This suggests a need to inform and better train our clinicians, as well as develop more thorough and better sign-posted guidance on e-cigarettes and the evidence surrounding them. As the body of research on e-cigarettes is rapidly growing, we must ensure that these sources of knowledge are kept accurate and up-to-date so that clinicians can best advise on e-cigarettes for smoking cessation grounded on the most current research.

With e-cigarettes as one potential smoking cessation tool endorsed by primary care clinicians, people who smoke will be given more opportunities to make successful quit attempts. Ensuring that people who smoke get support to quit from the NHS is one important facet of a comprehensive tobacco control strategy, that will help us reach Cancer Research UK's ambition of a smoke-free UK by 2030, and combat the burden that tobacco has on our society.

Dr Richard Roope

Clinical Champion for Cancer
Royal College of General Physicians &
Cancer Research UK

Executive Summary

Background

Smoking remains the leading cause of preventable illness, cancer, and avoidable death in the UK[1], placing an enormous burden on the UK's health service[2]. Encouraging patients to quit smoking is therefore key for improving health outcomes for those who currently smoke.

Primary care clinicians have an important role to play in supporting smoking cessation, by delivering brief advice to patients who smoke, prescribing pharmacotherapy, or referring them to specialist stop smoking services.

Electronic cigarettes (e-cigarettes) provide an alternative method for smoking cessation. Their long-term health impacts are unknown and it is widely agreed that they should not be used by non-smokers and young people. Evidence currently suggests that they are much less harmful than smoking cigarettes[3-7], and they can be an effective cessation tool[8-11]. In fact, despite being a relatively new product, they are now the most used tool for smoking cessation in the UK, used in around 3 in 10 quit attempts[12]. Several organisations in the UK, including Public Health England, the Royal College of Physicians, and the Royal College of General Practitioners, now recommend that clinicians give advice on e-cigarettes as one option to help their patients quit smoking. Despite these recommendations, qualitative research has found that primary care clinicians face barriers in discussing e-cigarettes with patients who smoke[13].

This study builds on the previous research by surveying primary care nurses and GPs across the UK to gain a quantitative understanding of their advice, beliefs and knowledge around e-cigarettes. It will support policy-makers, professional bodies and health professionals to better understand how to make use of e-cigarettes as a tool to quit smoking in the clinical setting.

Key findings

E-cigarettes are frequently brought up in conversations between clinicians and patients who smoke

3 in 10 clinicians say that the topic of e-cigarettes is raised in the majority of conversations about smoking.

Beliefs: Clinicians are often unsure in their beliefs around e-cigarettes

Over 1 in 3 clinicians are unsure if e-cigarettes are safe enough to recommend as a quit tool to patients who smoke.

1 in 3 are unsure whether e-cigarettes are addictive.

Advice: Many clinicians are reluctant to suggest e-cigarettes as a tool to quit smoking

When asked what advice they would give patients on e-cigarettes, 3 in 5 clinicians said "we do not know enough about them so I don't endorse them".

2 in 5 said they would feel uncomfortable recommending e-cigarettes to their patients who smoke.

1 in 6 clinicians said they would never recommend using e-cigarettes to patients who smoke.

There was no clear agreement as to whether clinicians would primarily recommend e-cigarettes as a first line or last resort therapy.

Knowledge: Many clinicians feel they lack knowledge on e-cigarettes

Fewer than 3 in 10 clinicians agree that their current knowledge is sufficient for advising patients about e-cigarettes.

Worryingly, the most cited source of information on e-cigarettes amongst clinicians was news, media and advertising (3 in 5 clinicians). Fewer than 1 in 3 cited government and public health agencies, and only 1 in 10 cited training.

7 in 10 clinicians would like more training on e-cigarettes. However, 1 in 3 don't see it as a priority.

Barriers: Clinicians are concerned about the long-term safety of e-cigarettes

3 in 10 said that they would not recommend e-cigarettes as they are a possible health risk.

Despite this, 3 in 5 clinicians agreed that using e-cigarettes is a good thing compared to tobacco smoking.

Nearly all clinicians agreed that they would be more likely to recommend e-cigarettes if recommended by professional associations, government, or public health agencies.

Policy recommendations

Embed smoking cessation advice and interventions routinely in primary care practice

Healthcare professionals should routinely employ very brief advice to initiate conversations with patients about stopping smoking.

They should be aware of treatment options available in their local area, and prescribe clinically-appropriate medicines, refer patients to specialist stop smoking services, and support the use of e-cigarettes as an aid to stop smoking.

Improve communication and dissemination of consistent, evidence-based messages about e-cigarettes to primary healthcare professionals

Governments, the health service, professional bodies and non-government organisations should more effectively signpost clinicians to clinical guidance on e-cigarettes.

Guidance on e-cigarettes should outline the unknown questions on long-term effects, their relative safety compared to combustible tobacco and provide clear, evidence-based recommendations on use as a cessation tool for patients with specific characteristics. It should also be frequently reviewed to ensure that recommendations are based on the latest evidence.

Incorporate information on e-cigarettes in education and training programmes

All smoking cessation education and training programmes in the UK should incorporate evidence-based information and guidance about a range of smoking cessation interventions and tools, including e-cigarettes.

License e-cigarettes as a smoking cessation tool

Cancer Research UK supports light-touch Medicines and Healthcare products Regulatory Agency (MHRA) licencing of e-cigarettes making cessation claims. This would also provide a system for assessing the products and evidence supporting their claim, and for tracking adverse reactions.

Contents

1 Introduction

Smoking is the leading cause of preventable illness and mortality in the UK[1], with smokers losing on average at least ten years of lifespan compared to non-smokers[14]. It is still the single biggest preventable cause of cancer in the UK, causing at least 15 different types of cancer amounting to 54,300 cases per year[15]. This includes lung cancer—which has one of the lowest survival rates of all cancer types[16]—where over seven in ten cases are a result of smoking[15]. Treatment of smoking-related illness is estimated to cost £2.5bn a year in England alone[2].

Alongside preventing uptake of smoking, cessation is crucial in reducing the UK's smoking rates. It also leads to improved health outcomes for those who currently smoke. Quitting smoking can have an immediate positive impact on health[14], and can help in treatment of existing disease as well as preventing future disease[17]. Despite the health and financial benefits, most people who smoke find it very difficult to quit, and those who successfully quit may make multiple attempts before doing so[18]. Several effective options exist to support people who smoke to quit, including behavioural support and licensed pharmacotherapies such as nicotine replacement therapy (NRT), bupropion and varenicline. Primary care clinicians have an important role to play in smoking cessation, by delivering brief advice to patients who smoke, prescribing pharmacotherapy, or referring them to specialist stop smoking services (SSS).

Electronic cigarettes (e-cigarettes) provide an alternative method for smoking cessation. E-cigarettes are battery-powered devices that heat a liquid that generally contains nicotine. Nicotine can therefore be delivered to the user in a vapour format. E-cigarettes are a relatively new product and while the evidence to date shows they are less harmful than tobacco[3-7], the long-term impact of e-cigarette use ("vaping") is unknown. This means they are not-risk free so are not suitable for use by people who have not smoked. E-cigarettes should only be used as a cessation tool or to prevent relapse to tobacco.

There is growing evidence that e-cigarettes can be effective for smoking cessation, as would be expected from their ability to deliver nicotine[8-11]. Moreover, a recent trial found that e-cigarettes can be more effective than NRT for aiding people to quit smoking, when both are used with behavioural support from SSS[19]. Patients who smoke report being open to using e-cigarettes for smoking cessation[20], and in 2018 e-cigarettes were used in 29.9% of quit attempts[12] – more than any other smoking cessation tool. Several national organisations, including Public Health England, NHS Health Scotland, the Royal College of Physicians, and the Royal College of General Practitioners, now recommend that clinicians advocate the use of e-cigarettes as a smoking cessation tool to patients who smoke[21-25]. The National Institute for Health and Care Excellence (NICE) guidance on e-cigarettes for smoking cessation indicates that e-cigarettes may help many people quit smoking, and that e-cigarettes are substantially less harmful to health than smoking cigarettes (although not risk-free)[26].

Despite this, primary care clinicians face barriers in discussing e-cigarettes with patients who smoke. Previous qualitative research[13] indicated that many practitioners feel uncertain about e-cigarettes and somewhat ambivalent about recommending them to patients. They indicated that they need more information and would like

more official guidance on them. Clinicians' attitudes may also prevent them recommending e-cigarettes. For example, clinicians may not approve of e-cigarettes as a replacement for cigarette smoking because they believe they perpetuate 'nicotine addiction'. However, to date, it has been unclear exactly which aspects of e-cigarette use concerns clinicians and how widely these views are shared.

Some quantitative studies[27-29] have assessed providers' knowledge of and perceptions about e-cigarettes; however, these studies focused primarily on community pharmacists, oncologists, and NHS stop smoking advisors. There is evidence of a lack of knowledge on the topic among physicians in the USA[30,31]. However, to date, no published survey has examined GPs' and nurses' views across the UK. If e-cigarettes are to be used for smoking cessation, it is vital to understand to the nature of clinicians' advice on e-cigarettes, their current perceptions towards them, and the barriers that they face on recommending them.

2 Research aims and objectives

This study aimed to survey over 2,000 GPs and nurses across the UK on their advice, beliefs, attitudes, and knowledge regarding e-cigarettes.

The research will play a crucial role in elucidating barriers that might prevent clinicians from recommending e-cigarettes, influence local policy on e-cigarettes, and providing a starting point for implementing recommendations related to the use of e-cigarettes for smoking cessation.

3 Methods

3.1 Overview

An online UK-wide survey of GPs and was undertaken. The survey was developed iteratively using think-aloud interviews to ensure it was clear and comprehensible to clinicians. It focussed on current clinician knowledge about e-cigarettes and about current guidelines, as well as healthcare provider attitudes toward the use and recommendation of e-cigarettes for harm reduction and smoking cessation.

3.2 Development of online survey

3.2.1 Theoretical framework

The Theoretical Domains Framework[32] (TDF) in combination with the Capability, Opportunity and Motivation model of Behaviour (COM-B)[33] was used to guide the initial choice of survey items, in order to explore the likely determinants of the promotion of e-cigarettes in primary care settings. The Theoretical Domains Framework offers a structured approach for exploring influences on clinicians' perceptions and behaviour, including barriers to and facilitators of involving e-cigarettes in smoking cessation in primary care.

The COM-B model[33] provides a higher-level view of factors that are likely to influence the behaviour of recommending e-cigarettes for smoking cessation in primary care settings. In this case, focus was on the "motivation" and "opportunity" sections of the model, given that these areas may be amenable to influence from professional societies, NICE guidance, and/or media campaigns. Therefore, within the constraints of the survey, initial questions explored aspects such as beliefs about the consequences of recommending e-cigarettes for smoking cessation, social influences, and what environmental resources would provide additional opportunities for a change in behaviour.

3.2.2 Patient/public involvement

Before drafting the survey, a focus group with four members of the public was undertaken to provide direction for the survey and ensure patient concerns were integrated into the research. Questions focussed on how patients would like GPs and other clinicians to approach the topic of e-cigarettes, and on the perception of e-cigarettes among these members of the public.

The four participants all self-identified as smokers, and one considered herself to be a "dual user" (sometimes using e-cigarettes as well). Participants were encouraged to discuss their views of healthcare related to smoking and e-cigarettes, including how they would prefer their healthcare providers to discuss these topics with them. The focus group lasted approximately one and a half hours and participants were reimbursed for their time at standard rates.

Several general points came out of the focus group. Participants wanted to know more information about e-cigarettes and their safety. They felt that they had been

exposed to misinformation in the past, and would trust information coming from their GP if they had a good relationship and did not believe the GP to have an "ulterior motive". They would generally not consider using an e-cigarette if they felt forced or pressured by a healthcare professional, but might consider switching if the harm reduction benefits were explained to them and if the e-cigarette recommended was not expensive. Price was a key concern overall, and cost-effectiveness would be a major factor in switching. Another key concern was safety: participants worried about the ingredients and "chemicals" present in e-cigarettes, while the chemicals present in tobacco were considered to be more natural. Any recommendations of e-cigarettes in primary care should take these concerns into consideration.

3.2.3 Survey design and think-aloud interviews

The first-draft survey questions were based on previous research and on the expertise and experience of the research team[13]. A systematic approach was then taken to ensure that the final survey was understandable to clinicians and that it properly addressed the topics. Think-aloud interviews were used as a method of iterating and improving the survey questions. The process asked members of the target group to go through the questions with a researcher, commenting aloud on every element of the survey. This included areas where instructions were unclear, information was too wordy, or participants were confused for any other reason. The participants' thoughts were recorded and any suggested changes were noted.

Here, the first-draft survey was shown to a set of clinicians (nurses or GPs) and their feedback was collected. This allowed us to obtain detailed information about how well the questions captured their thoughts and attitudes about e-cigarettes. Changes were made to the survey based on feedback, and an updated second draft produced. This and subsequent drafts were reviewed by clinicians, until no important changes to the survey were suggested. We were therefore confident that the final survey format was understandable and acceptable to our target clinician groups.

3.3 Ethical approval

Ethical approval for the finalised survey was granted by CUREC (Oxford) in August 2018 (Ref: R56092/RE001).

3.4 Data collection

The final survey elicited responses from just over 1,000 GPs and nurses each across the UK to ensure a wide sample of responses. Two health market research companies were contracted to distribute the survey.

Medeconnect Healthcare Insight Ltd, the market research arm of doctors.net, delivered the surveys and collected the resultant data from GPs. MedeConnect has exclusive access to doctors.net, with an extensive membership of GPs registered with the General Medical Council in the UK. This survey was promoted to just over 12,000 GPs who had been active on the doctors.net site at any time in the 90 days prior to the study going live. 1,240 GPs clicked on the survey link and 1,001 completed the study.

Nurses and other healthcare professionals were recruited via the healthcare arm of ResearchNow via an email campaign and asked to complete an online survey. Invitations were sent to 15,000 nurses (with up to two follow-up reminders) and 1,501 clicked on the survey link. Of the nurses who clicked on the survey link, 1,001 went on to complete the survey.

3.5 Data analysis

Data were analysed using Statacorp Stata Statistical Software release 14. We summarised proportions responding to each question (the full extent of these data are presented in Appendix 3: Questionnaire responses by clinician type).

To assess whether responses to individual questions differed between certain groups (most commonly nurses vs. GPs), chi-squared tests were performed, with the null hypothesis that responses were the same between groups rejected at a significance threshold of $p < 0.05$. To compare years practising between GPs and nurses, a two-tailed t-test was used.

4 Results

4.1 Demographics

A UK-wide sample (N = 2,002) of primary healthcare practitioners was surveyed. Gender, profession, years since qualification, index of multiple deprivation and practice size were additionally recorded (Table 1; see Appendix 2: Sample demographics for a full demographic breakdown). Of GPs, the greatest proportion of respondents worked as principal GPs (57.3%) – for nurses this was practice nurses (62.5%). Information on nurses who indicated their role to be "Other" and wrote in further information can be found in Appendix 5: Composition of "other" category for nurses. The mean number of years in practice for GPs was 20.3, whilst for nurses it was 15.2 years. The mode age group for the whole sample was 40-59 years old, with more nurses (38.7%) than GPs (24%) in the 50-59 age range.

Of the clinicians that reported their location, similar to the UK population as a whole, 84.3% were from England (84% of the UK), 9.0% from Scotland (8% of the UK), 4.0% from Wales (5% of the UK), and 2.5% from Northern Ireland (3% of the UK).

Table 1: Sample characteristics.

	Nurses	GPs	*p*-value*
Age (n, %)	**N = 1,000**	**N = 1,001**	< 0.001
Under 30	86 (8.6%)	3 (0.3%)	
30-39	170 (17.0%)	265 (26.5%)	
40-49	271 (27.1%)	399 (39.9%)	
50-59	386 (38.6%)	240 (24.0%)	
60 or older	87 (8.7%)	94 (9.4%)	
Gender (n, %)	**N = 1,001**	**N = 1,001**	< 0.001
Female	862 (86.1%)	424 (42.4%)	
Male	139 (13.9%)	577 (57.6%)	
Years practicing	**N = 1,001**	**N = 1,001**	< 0.001
(mean, s.d.)	20.3 (11.1)	15.2 (8.9)	
Role (n, %)		**N = 1,000**	
Principal GP		574 (57.3%)	
Salaried GP		262 (26.2%)	
Locum GP		165 (16.5%)	
Role (n, %)	**N = 999**		
Practice nurse	625 (62.6%)		
District nurse	77 (7.7%)		
Other	297 (29.7%)		
UK nation	**N = 883**	**N = 1,001**	0.213
England	761 (86.2%)	829 (82.8%)	
Scotland	76 (8.6%)	94 (9.4%)	
Wales	27 (3.1%)	49 (4.9%)	
Northern Ireland	19 (2.1%)	29 (2.9%)	

Where total respondents (N) < 1,001, data were missing.
** p-value for the difference between nurse and GP cohorts.*

4.2 Speaking to patients about smoking and e-cigarettes

4.2.1 Frequency of discussions about smoking

Healthcare professionals were asked how often they raise the topic of smoking with patients (Appendix 3.1). When they did not know a patient's smoking status, nurses were more likely to "always" raise the topic of smoking than GPs (48.1% compared to 15.7% of GPs).

Similarly, when nurses knew a patient was a smoker, they were more likely ("always", 60.5%, or "often", 31.4%) to raise the topic of smoking then GPs ("always", 25.7%, or "often", 61.7%)..

Most clinicians raised the topic of smoking when it was relevant to a patient's condition: for GPs, 97.7% "always" or "often" raised the topic, while 93.8% of nurses indicated they "always" or "often" brought up smoking when relevant to a patient's condition.

4.2.2 Content of clinicians' discussion on smoking

When asked what they do when they raise the topic of smoking (Appendix 3.2), both GPs and nurses reported "often" or "always" establishing smoking status (93.8% of nurses and 92.5% of GPs), quantifying cigarettes per day (94.2% of nurses and 91.7% of GPs), or advising on the benefits to health of cessation (94.1% of nurses and 86.8% of GPs).

However, referral to stop smoking services or prescription was somewhat less frequently endorsed, with 85.6% of nurses and 78.8% of GPs "often" or "always" referring a patient to stop smoking services, and 50.8% of nurses and 30.9% of GPs "often" or "always" offering a prescription for pharmacotherapy. When asked if patients seem to be annoyed when they raise the topic of smoking (Appendix 3.4), around 1 in 6 nurses (16.8%) reported "often" or "always" and 1 in 15 GPs (6.6%) likewise.

E-cigarettes

Clinicians were asked if they would advise patients to try e-cigarettes during their discussion on smoking (Figure 1; Appendix 3.2). 20.7% of nurses, and 13.4% of GPs, said they would "often" or "always" advise a patient to try an e-cigarette whether or not they continue smoking. 24.9% of nurses, and 12.8% of GPs would "often" or "always" advise a patient to use an e-cigarette only if making a quit attempt.

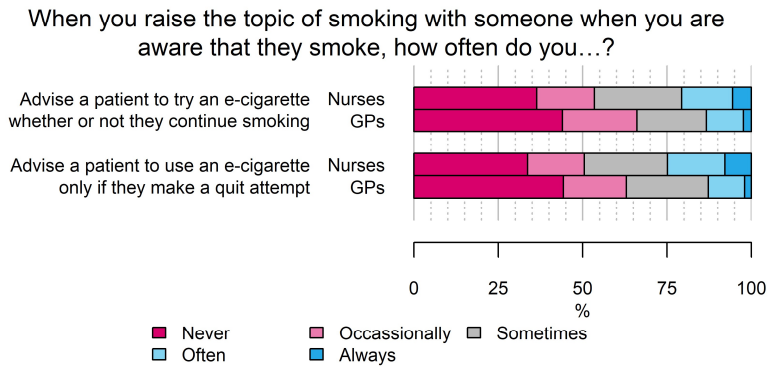

Figure 1: E-cigarettes in clinicians' discussion on smoking.

Clinicians reported the frequency in which patients raised the topic of vaping during discussions on smoking (Figure 2; Appendix 3.3). Patients appeared to raise the topic of vaping more with nurses than GPs. Of nurses, 43.5% said that the majority ("51 – 75%" or "> 75%") of patients who smoke raised the topic, as compared with only 20.8% of GPs.

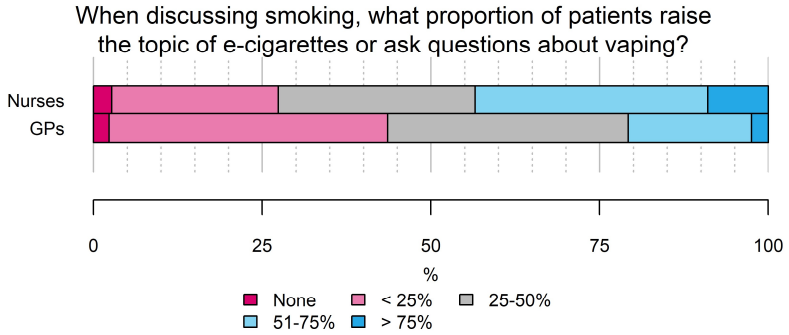

Figure 2: Frequency of patient-initiated discussions on e-cigarettes with clinicians.

4.3 Views on long-term use of nicotine containing products

Clinicians were asked about long term use of nicotine replacement therapy (NRT) and e-cigarettes, as qualitative work has shown that persistence of addiction to nicotine was perceived to be a barrier to recommending e-cigarettes. A scenario was created in which a person had stopped smoking with either NRT or e-cigarettes for at least three months, and clinicians were asked to report on the advice they would give to such a patient (Figure 3; Appendix 3.5, Appendix 3.6).

There were no marked differences between nurses and GPs in advice on NRT, with 55.2% of nurses and 59.9% of GP's suggesting that patients do not use NRT long-term. An increased total of 76.0% of nurses and 63.4% of GP's would advise that patients continue to use NRT if it were to prevent the patient from returning to smoking.

Similar trends were seen for advice on the long-term use of e-cigarettes with 58.3% of nurses and 51.2% of GPs advising against long-term e-cigarette use, but 76.7% of nurses and 73.6% of GPs advising their continued use if it prevents the return to smoking. However, a large proportion of both nurses (45.2%) and GPs (33.3%) would advise their patients that long-term use of e-cigarettes is harmful, despite the current lack of knowledge on the long-term impact of using e-cigarettes.

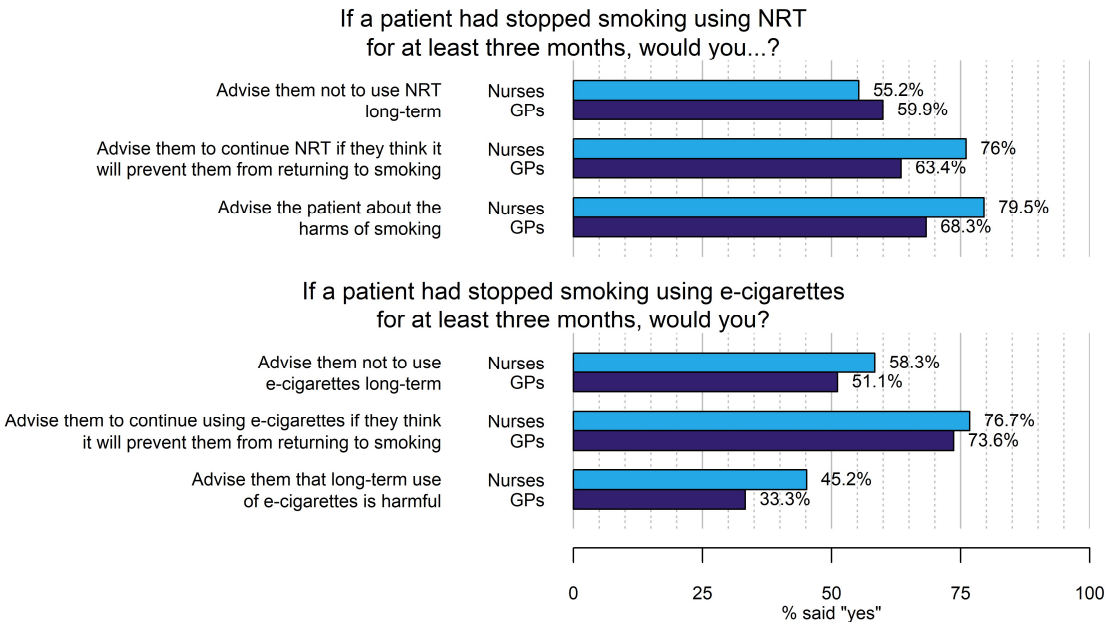

Figure 3: Clinician views on long-term use of e-cigarettes and nicotine replacement therapy (NRT) for smoking cessation.

4.4 Beliefs about e-cigarettes

4.4.1 Addictiveness and safety

Most nurses (59.0%) and GPs (60.1%) believed e-cigarettes to be addictive, with around a third (35.2%) being unsure (Figure 4; Appendix 3.7). Around 4 in 10 clinicians (43.4%) agreed that they were safe enough to use, while over a third (36.6%) were unsure (Figure 4; Appendix 3.8).

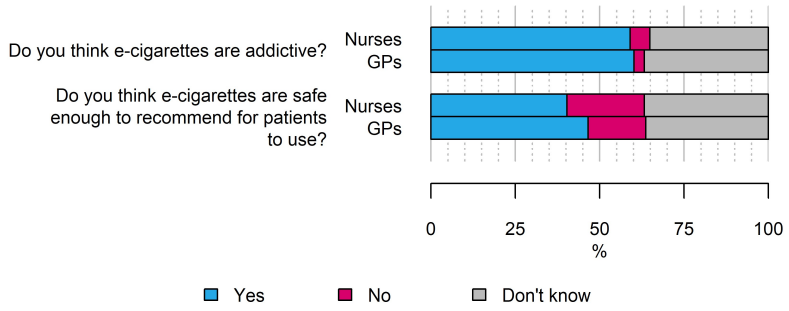

Figure 4: Clinician views on the safety and addictiveness of e-cigarette use.

We asked clinicians to compare the health effects of using e-cigarettes with smoking tobacco in two scenarios: (i) when vaping as a complete substitute for smoking, and (ii) vaping as well as smoking tobacco (commonly referred to as "dual use").

Only 2.7% of clinicians thought vaping alone was worse than smoking, with a majority (59.0%) believing that vaping alone is beneficial over smoking. However, around 3 in 10 clinicians (35.9% of nurses and 25.7% of GPs) said they were unsure about this (Figure 5; Appendix 3.9).

Beliefs around the health benefits of dual use were generally more negative. Fewer than 1 in 10 clinicians (9.2%) believed dual use improved health over smoking alone, with 40.5% of nurses and 34.1% of GPs believing it would worsen health. Again, around 3 in 10 clinicians (32.4%) said they were unsure (Figure 5; Appendix 3.10).

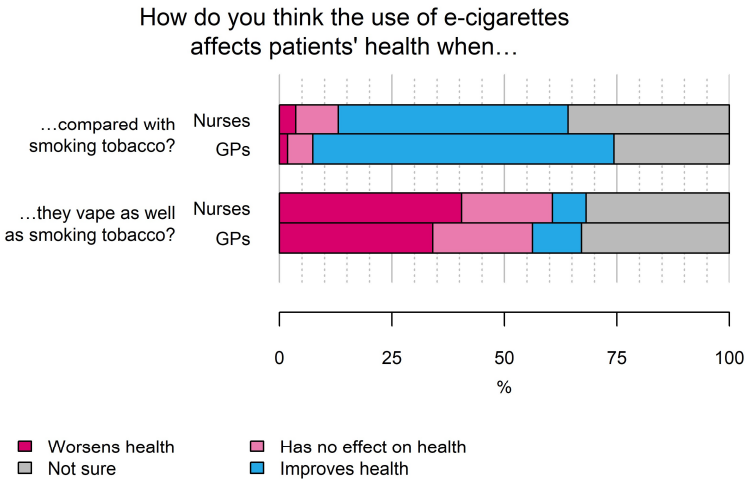

Figure 5: Clinician beliefs on the health effects of vaping in comparison to smoking.

4.4.2 Belief statements

Clinicians were asked about their agreement with a number of belief statements regarding e-cigarettes (Figure 6; Appendix 3.14). Overall, this revealed a lot of uncertainty around e-cigarettes in the clinician cohort, with the most popular response option being "neutral" for most statements.

Notably, around half of nurses (50.6%) and three quarters of GPs (73.8%) at least "somewhat" agreed that using e-cigarettes is preferable to smoking tobacco. There was a majority agreement that "recommending e-cigarettes is responsible because almost anything is better than smoking" (53.2% of nurses and 60.9% of GPs), and substantial disagreement with the statement that "transferring from smoking to long-term vaping means nothing has been gained" (41.7% of nurses and 57.2% of GPs).

Despite this, a large proportion of clinicians (47.0% of nurses and 58.8% of GPs) at least "somewhat" disagreed that people are better off using e-cigarettes than they would be using tobacco products.

Around three quarters of clinicians (66.9% of nurses and 66.8% of GPs) at least "somewhat" agreed that they "worry that e-cigarettes are luring young people into smoking".

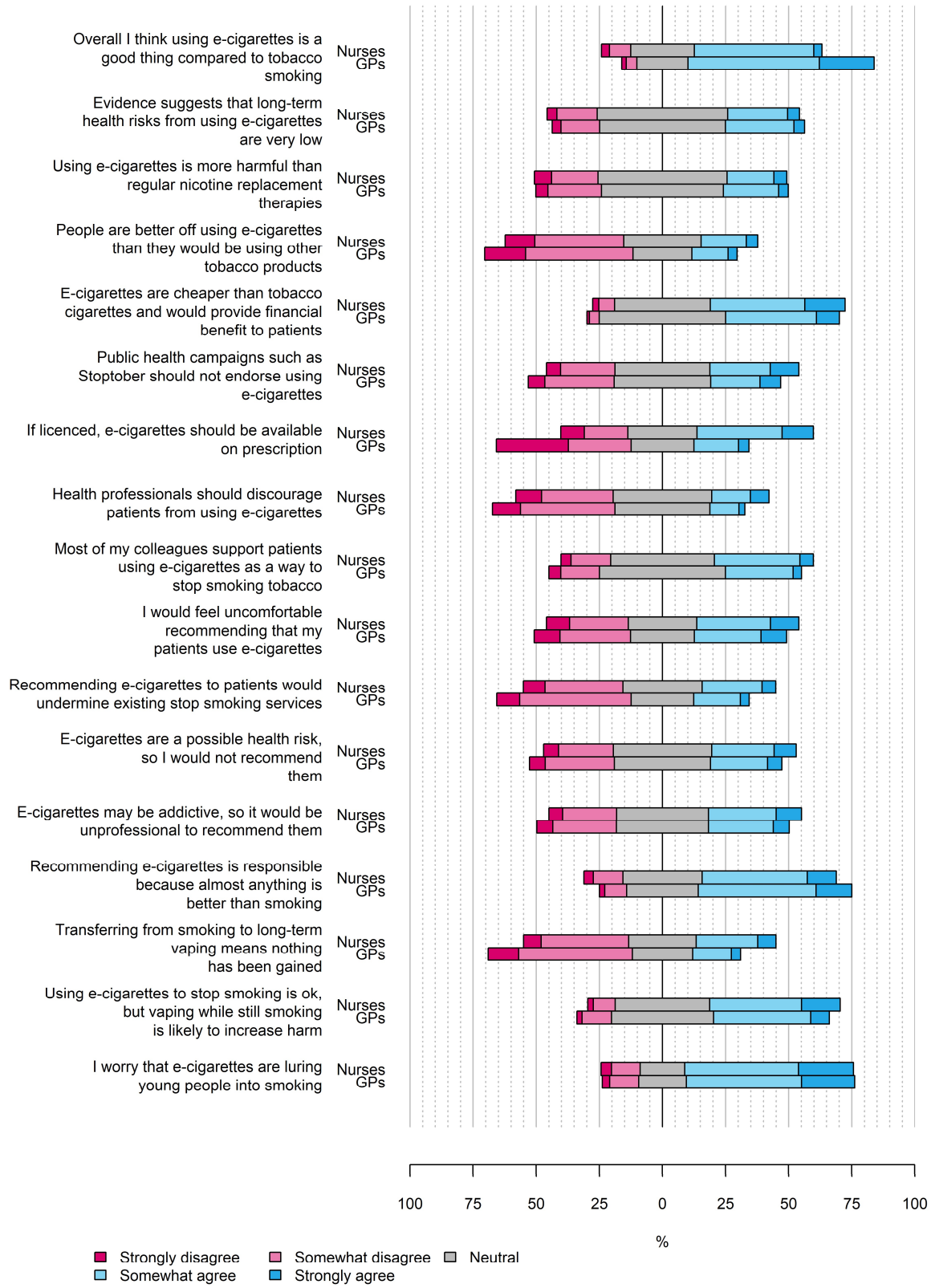

Figure 6: Clinician agreement on belief statements regarding e-cigarettes.

4.5 Clinician advice on vaping

Clinicians were offered a range of options that might characterise the advice that they would give someone about vaping (Figure 7; Appendix 3.11). The most common response, endorsed by 61.4% of nurses and 57.2% of GPs, was the advice that some people found e-cigarettes helpful when attempting to quit smoking, but there was insufficient information to endorse them.

Between clinicians there was noteworthy disparity as to when the use of e-cigarettes should be advised. One in five (19.2% of nurses and 18.9% of GPs) would advise e-cigarettes as a first-line therapy, whereas around a quarter (29.5% of nurses and 20.8% of GPs) regarded them as a therapy of last resort. 20.4% of nurses and 16.1% of GP's would not offer any advice regarding the use of e-cigarettes for smoking cessation, and 7.1% and 3.5% would recommend patients *not* use e-cigarettes.

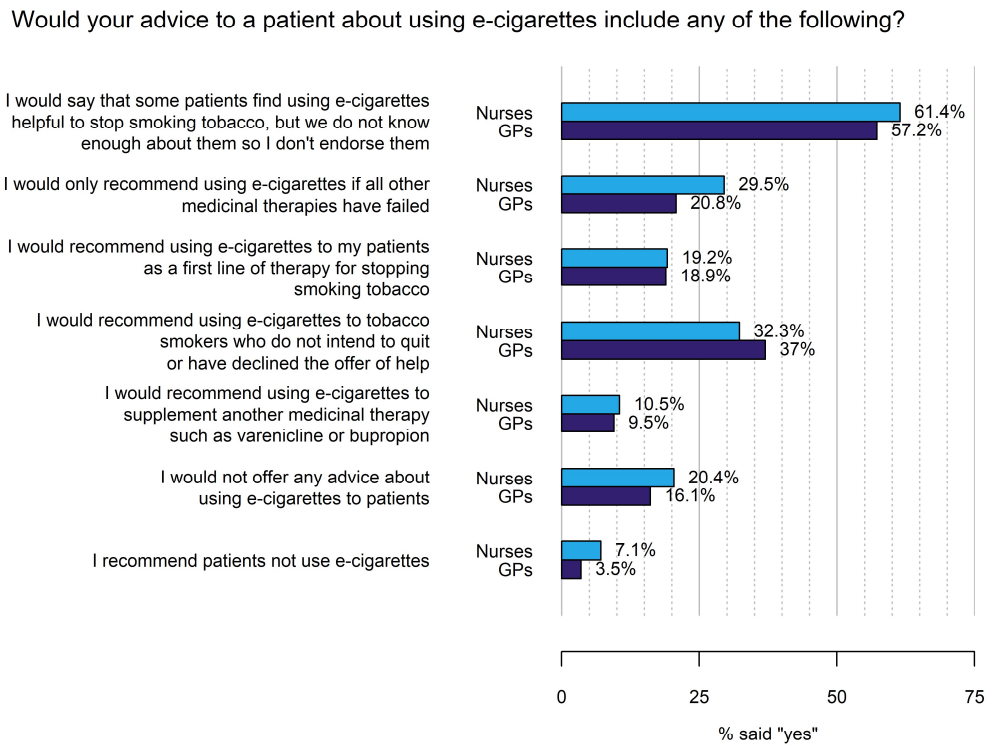

Figure 7: Clinician advice on e-cigarettes and vaping.

Clinicians were asked if they would recommend e-cigarettes to patients in various scenarios (Appendix 3.12). Around two thirds (66.6%) would be comfortable recommending e-cigarettes as a temporary measure to help them get used to not smoking, with almost half (41.4% of nurses and 54.1% of GP's) recommending e-cigarettes in the context of a total switch from smoking, without specifying the duration of use. Significantly fewer (21.0% of nurses and 22.3% of GPs) endorsed recommending e-cigarettes as a partial replacement for smoking (i.e. dual use). 20.7% of nurses, and 16.0% of GPs said they would never recommend e-cigarettes to a patient who smoked tobacco.

Clinicians were asked what arguments they thought might persuade their patients to switch to vaping from smoking (Appendix 3.13). Both nurses and GPs believed that the key factors included providing more information on e-cigarette effectiveness in cutting down smoking (60.8% of nurses and 62.2% of GPs), health improvement (49.2% of nurses and 59.7% of GP's), and the experience of friends and family in using e-cigarettes for smoking cessation (55.1% of nurses and 61.4% of GPs).

4.6 Knowledge and training

Nurses and GPs were asked about their knowledge on e-cigarettes (Figure 8; Appendix 3.15). A minority (26.9%) of all clinicians at least "somewhat" agreed that they had sufficient knowledge to advise patients on e-cigarettes, and approximately a third (35.5% of nurses and 27.9% of GPs) at least "somewhat" agreed that they were aware of guidance on e-cigarettes.

Clinicians showed mixed receptiveness to further training on e-cigarettes. Whereas the majority (78.2% of nurses, and 62.1% of GPs) at least "somewhat" agreed that they would like more training about e-cigarettes a large proportion of nurses (25.4%), and especially GPs (42.7%), at least "somewhat" agreed that training on e-cigarettes is not a priority for them. Moreover, a significant proportion of clinicians (20.3% of nurses and 17.0% of GPs) agreed that they have no training needs about the use of e-cigarettes as they don't recommend them.

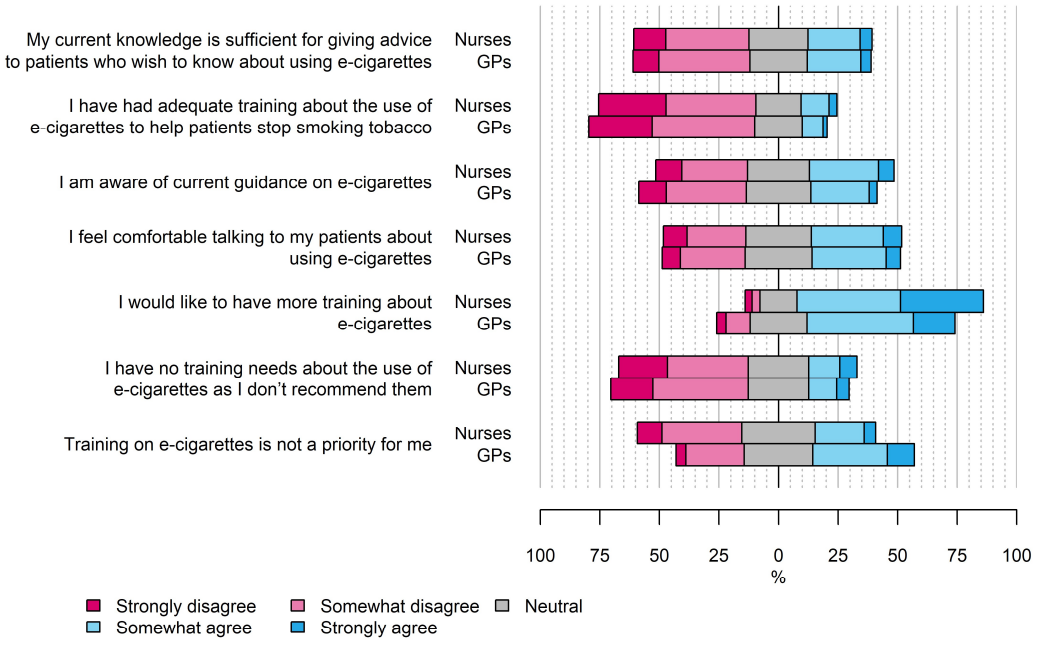

Figure 8: Clinician agreement on statements regarding their knowledge/training on e-cigarettes.

When asked where they have come across information about e-cigarettes, the main source cited by both nurses (58.4%) and GPs (58.3%) was news outlets (Figure 9; Appendix 3.16). Thereafter, there were some differences between nurses and GPs. Nurses drew on information from patients and their friends/family (cited by 46.7%), colleagues (43.4%), and social media (42.4%). Sources of official guidance were generally cited less frequently. GPs were also likely to draw on patients' experiences (cited by 42.0%) or colleagues (27.0%), and were somewhat less likely to have come across official guidance.

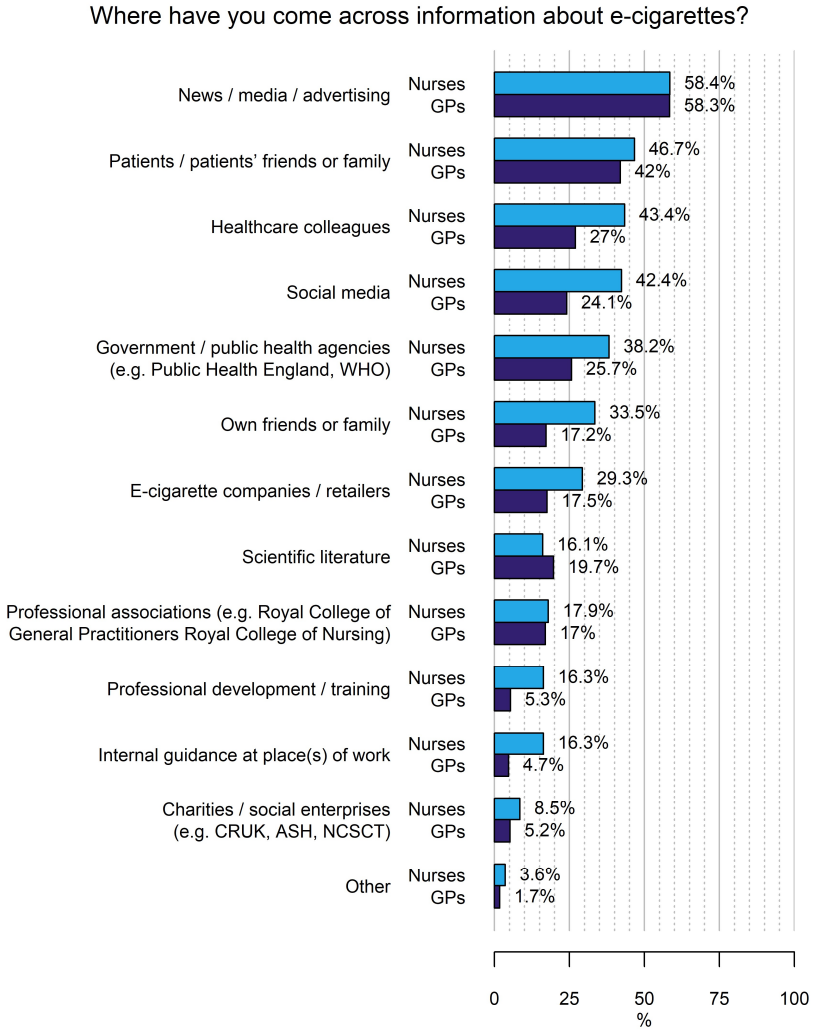

Figure 9: Clinician source of information about e-cigarettes.

4.7 Barriers and facilitators to e-cigarette advice

4.7.1 Clinician concerns

Nurses and GPs were asked their concerns about recommending e-cigarettes as a smoking cessation/harm reduction aid (Figure 10; Appendix 3.17). Overwhelmingly the main concerns related to the safety of e-cigarette use in the long-term (e.g. "do not know long-term impact...on health", cited by 75.9% of clinicians; and "I am concerned about the potential risk...when there is no evidence about the long-term harms", cited by 62.6% of clinicians). Almost half of clinicians (52.8% of nurses and 44.4% of clinicians) said they would prefer to offer smoking cessation strategies that are already available.

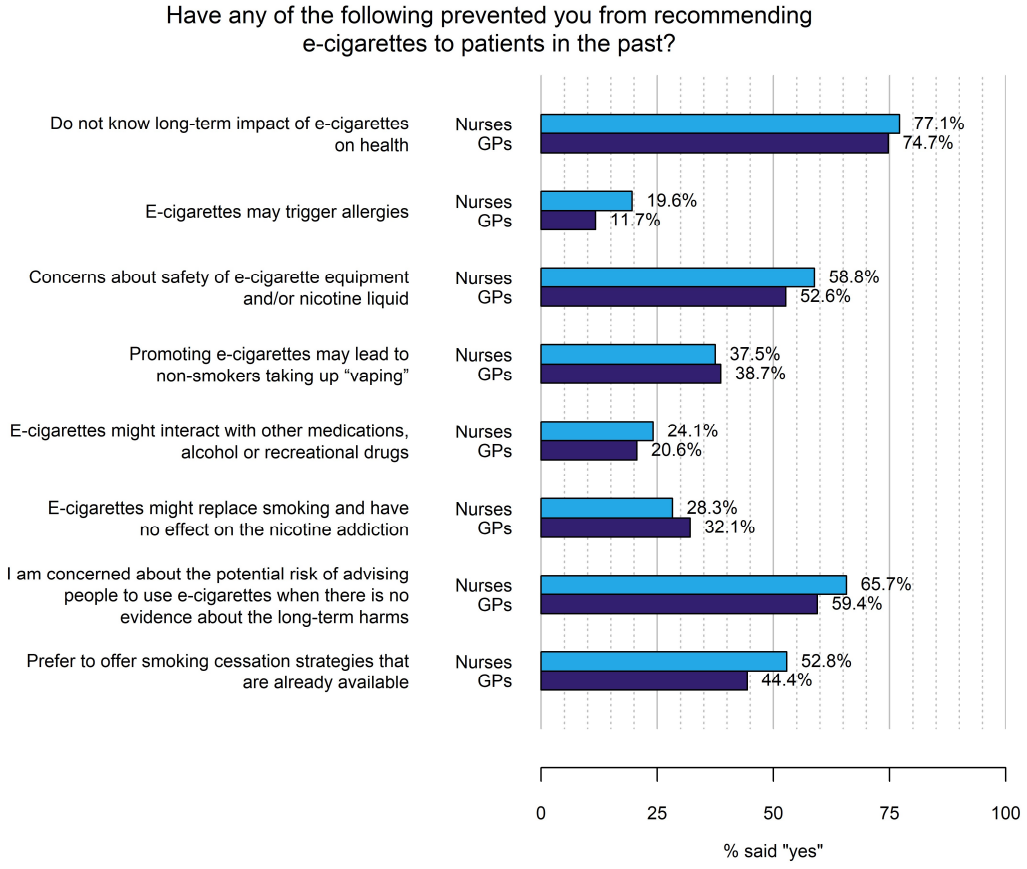

Figure 10: Clinician concerns about recommending e-cigarettes.

4.7.2 Factors that promote clinicians advising patients to use e-cigarettes

Circumstances that might lead a clinician to promote the use of e-cigarettes were put to the respondents (Figure 11; Appendix 3.18). Around eight out of ten clinicians felt that endorsement from government and public health agencies, or by professional associations such as the Royal Colleges, was likely to motivate them to recommend e-cigarettes. The vast majority of clinicians (81.9% of nurses and 89% of GPs) recognised "evidence that there were minimal harms from long term e-cigarette use" as making them more likely to recommend e-cigarettes as a smoking cessation tool.

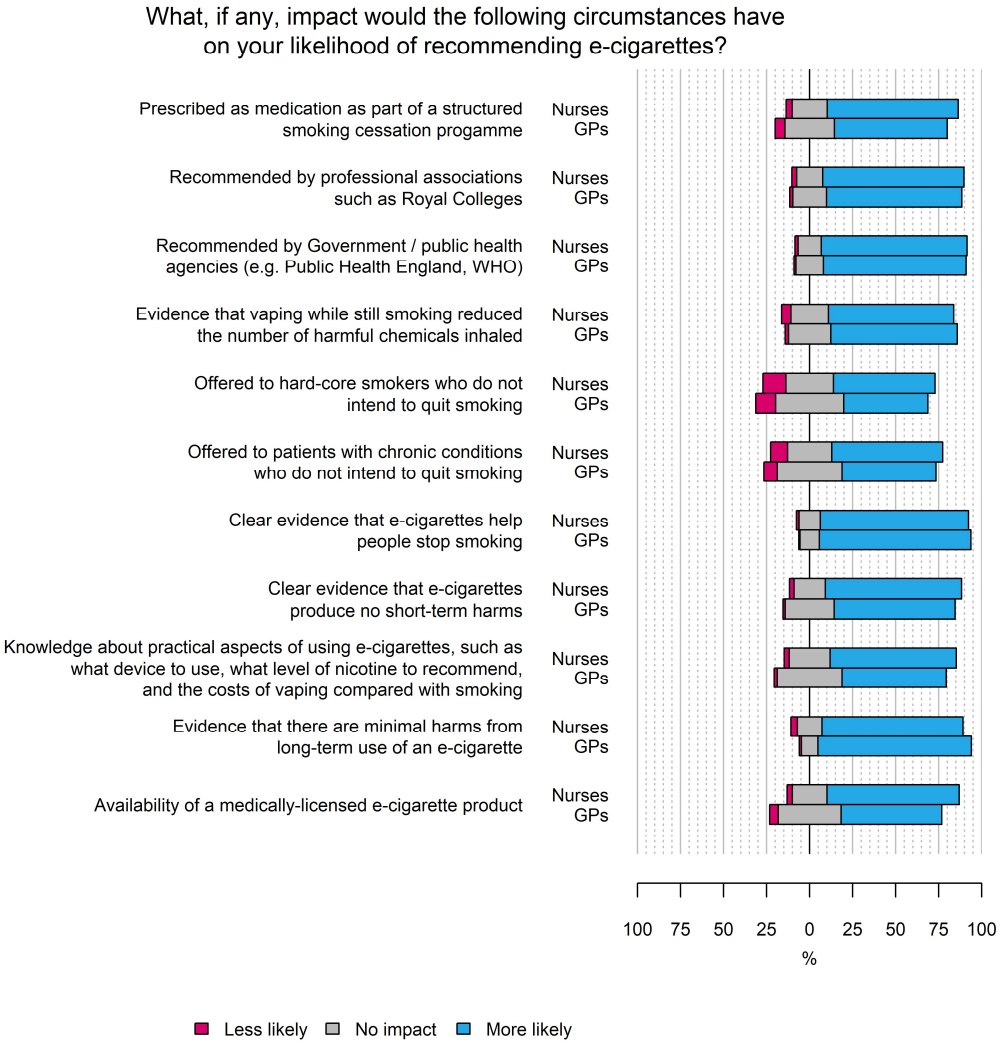

Figure 11: Potential influence of several circumstances on clinicians' recommendation of e-cigarettes.

What would persuade nurses and GPs who never recommend an e-cigarette to change?

Approximately one in five nurses and one in six GPs stated that they would never recommend e-cigarettes to patients who smoke tobacco (Appendix 3.12). To assess what factors may change that behaviour, results in Figure 11 ("Potential influence of several circumstances on clinicians' recommendation of e-cigarettes.") were stratified according to agreement with this statement (Figure 12; Appendix 4.1).

Generally, clinicians who would never advise a patient to use an e-cigarette perceived themselves to be somewhat less affected by new knowledge or guidelines than clinicians who sometimes advised an e-cigarette. Although these differences in perceived effect were significant, the differences were quite small. The majority of clinicians who never advised vaping would be more likely to advise e-cigarette use if evidence changed (e.g. 72.5% would be more likely to recommend if presented with "clear evidence that e-cigarettes help people stop smoking"; and 76.3% for "evidence that there are minimal harms from long-term use of an e-cigarette") or guidelines were issued (e.g. 73.6% would be more likely to recommend e-cigarettes if "recommended by Government / public health agencies").

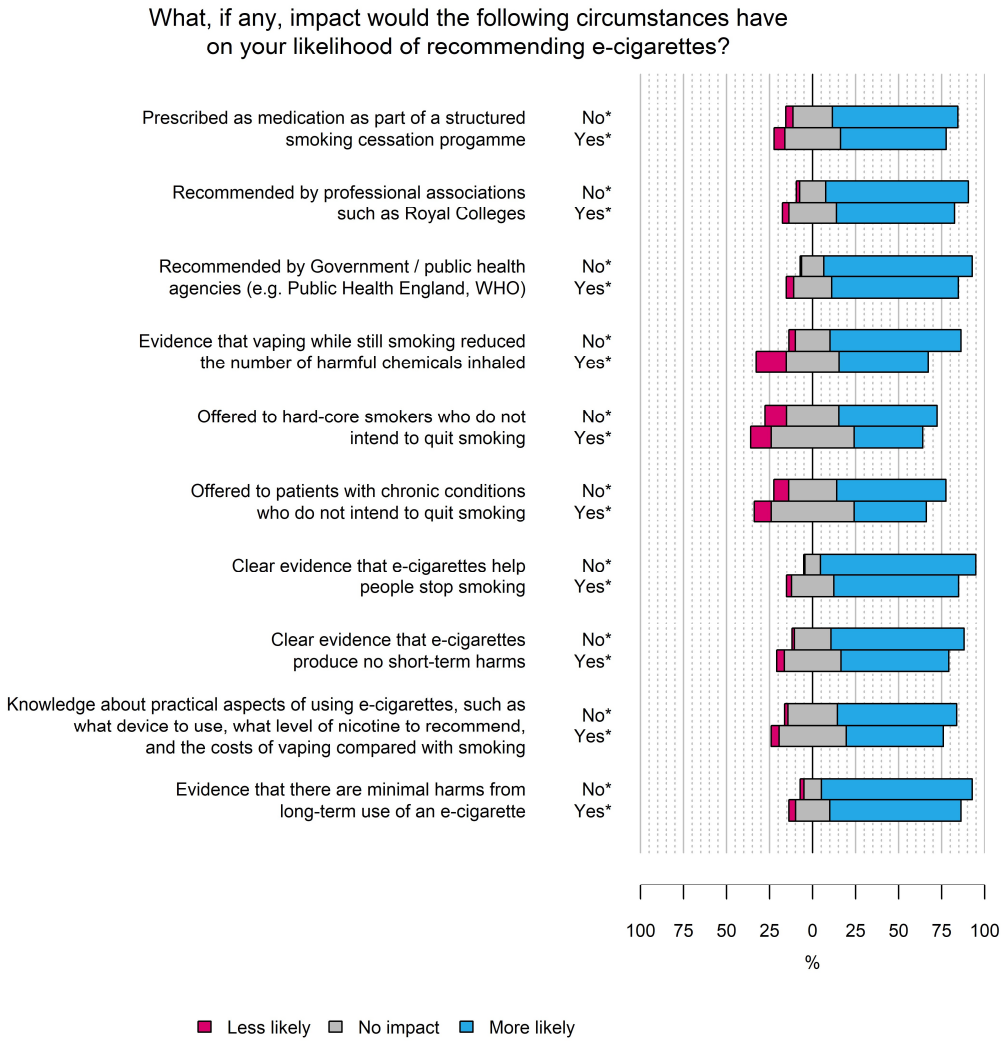

Figure 12: Potential infleunce of several circumstances on clinicians' recommendations of e-cigarettes, by whether or not they would currently recommend them.

**Agreement with the statement "I would never recommend using e-cigarettes to patients who smoke tobacco".*

4.7.3 Are nurses and GPs more likely to advise vaping to certain types of patients?

Nurses and GPs were asked about particular characteristics of patients that may make them recommend e-cigarettes (Figure 13; Appendix 3.19). Although clinicians seemed generally more averse to recommending e-cigarettes to pregnant women and patients under 20 years old, generally responses were similar for all patient types, suggesting that clinicians' reluctance to recommend e-cigarettes was not related to specific patients but reflected general concern about e-cigarettes themselves.

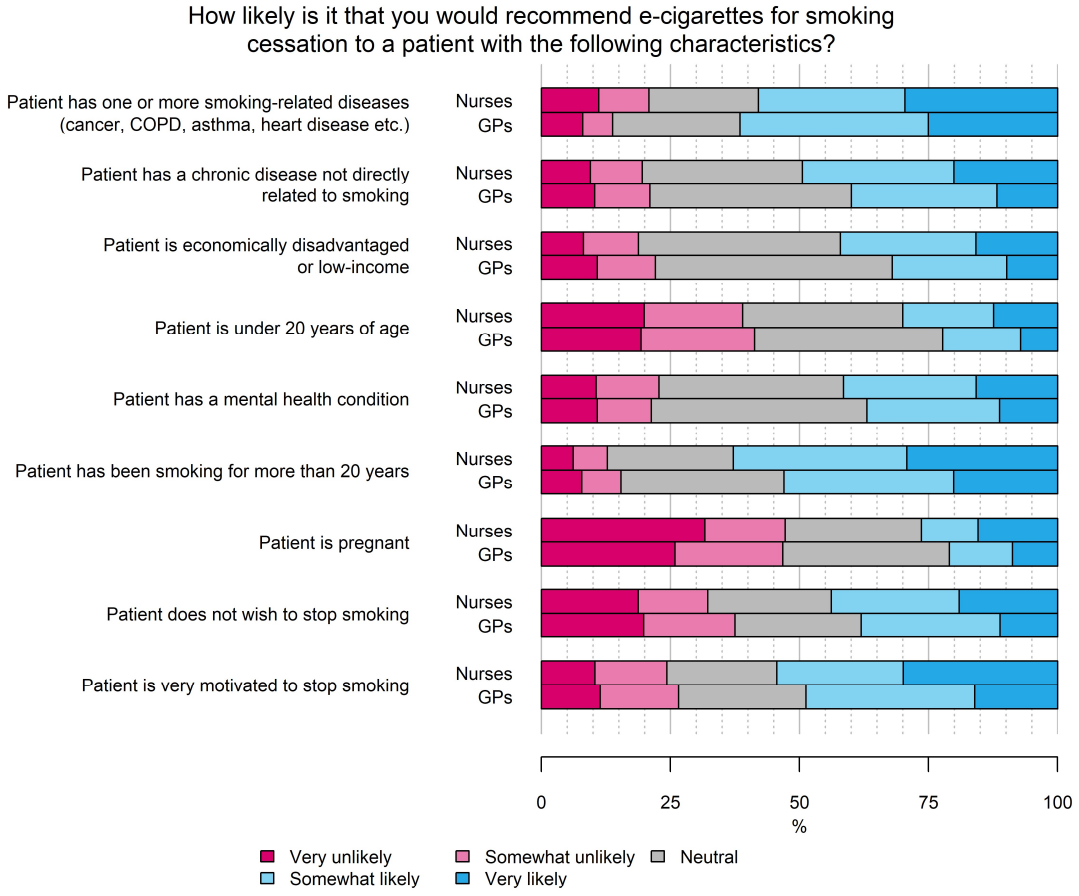

Figure 13: Potential influence of patient characteristics on clinicians' recommendations of e-cigarettes.

Would GPs and nurse who think vaping is no better than smoking be more likely to advise vaping to certain types of patients?

Overall, 50.6% of nurses and 73.8% of GPs agreed that "using e-cigarettes is a good thing compared to tobacco smoking" (Figure 6; Appendix 3.14). To assess what type of patient clinicians may recommend e-cigarettes to when *not* holding these beliefs, data from Figure 13 ("Potential influence of patient characteristics on clinicians' recommendations of e-cigarettes.") was stratified according to agreement or neutrality/disagreement on this statement (Figure 14; Appendix 4.2).

Clinicians who agreed that using e-cigarettes is a good thing compared to smoking generally claimed to be more likely to recommend e-cigarettes to patients of all types in the survey.

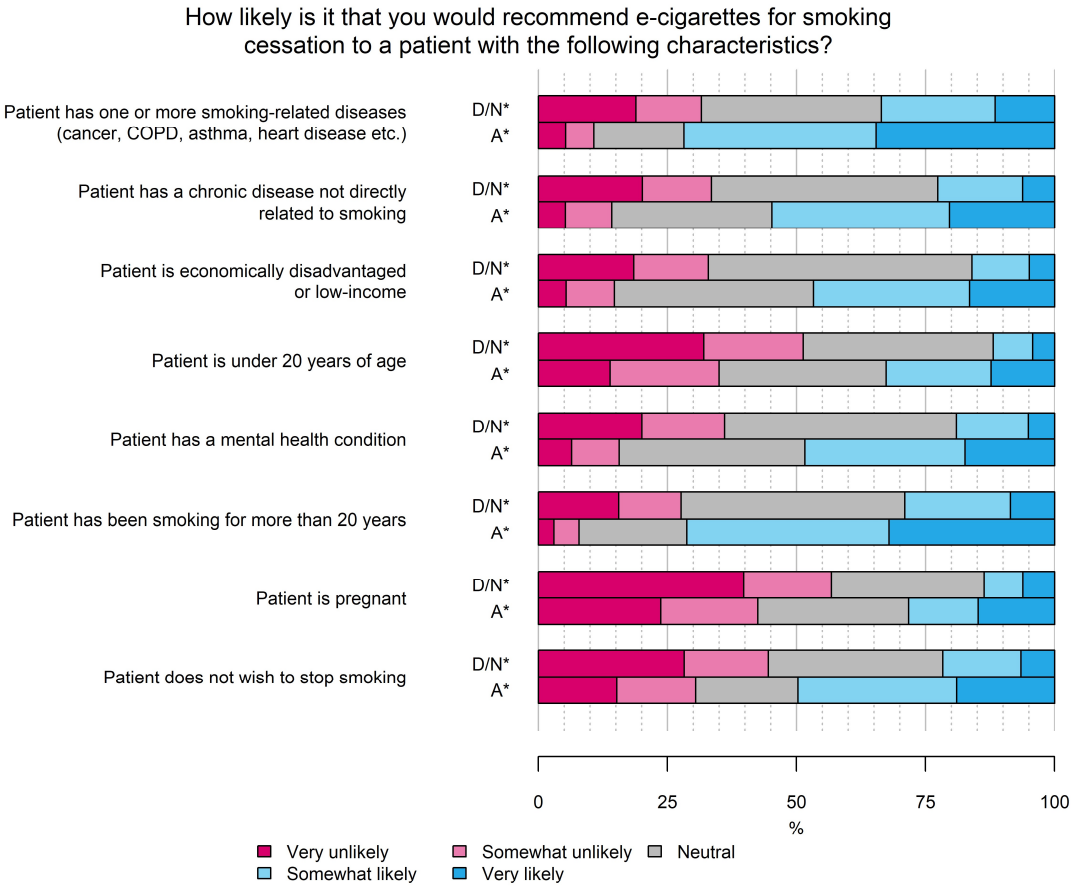

Figure 14: Potential influence of patient characteristics on clincians' recommendations of e-cigarettes, by whether or not they agree that e-cigarettes are a good thing compared to smoking.
**Agreement with the statement "Overall I think using e-cigarettes is a good thing compared to tobacco smoking": D/N = disagree/neutral; A = agree.*

5 Discussion

Trusted healthcare professionals are key to delivering smoking cessation support to their patients, as treating smoking is integral to both the prevention of disease and the treatment and management of existing disease. There are a range of medications, tools and interventions that are available and proven to support people to quit smoking in the UK, including emerging technologies like e-cigarettes.

This report surveyed thousands of general practitioners (GPs) and practice nurses across the UK on their attitudes and knowledge of e-cigarettes. This report also provides information on these clinicians' current practices relating to e-cigarettes as a smoking cessation tool in primary care.

Although a variety of attitudes were captured among the clinicians in this survey, some common themes emerge throughout the study.

Clinicians are not discussing smoking frequently with their patients

Routinely identifying patients that smoke is an important first step in supporting them to quit. However, this report has found that fewer than half of nurses and one in six GPs said they would "always" raise the topic of smoking in consultations (Appendix 3.1). Furthermore, even when clinicians knew that a patient smoked, fewer than half said they would discuss smoking with their patients.

Even once the topic of smoking is raised, not all clinicians are routinely taking action - around four in five clinicians said they would "often" or always" offer to refer patients who smoke to stop smoking services once the topic of smoking is raised, fewer than half said they would "often" or "always" offer a prescription of pharmacotherapy. This is consistent with an recent study, which found that primary care clinicians are infrequently delivering stop smoking support in the UK[34].

Clinicians are generally hesitant to recommend e-cigarettes for smoking cessation

Recommendation of e-cigarettes for smoking cessation was infrequent among both nurses and GPs, with around two in eight nurses, and one in eight GPs, responding that they would "often" or "always" advise a patient to try an e-cigarette during a quit attempt (Figure 1). Moreover, over a third of clinicians agreed that they would feel uncomfortable recommending that patients use e-cigarettes (Figure 6), and over one in six clinicians said they would never recommend using e-cigarettes to patients who smoke (Appendix 3.12). Despite this, patients who smoke tend to raise the topic of e-cigarettes reasonably frequently, especially with nurses (Figure 2), and therefore clinicians should be prepared to talk to patients about them.

Over half of clinicians would advise their patients not to use e-cigarettes long-term (Figure 3). Interestingly, a similar proportion would advise the same for NRT, and for both products over two-thirds of clinicians would advise continued use if it prevented a return to smoking.

When clinicians were asked what types of patients they would recommend e-cigarettes to, clinicians generally appeared more averse to recommendations to pregnant women and patients under 20 years of age (Figure 13) – potentially reflecting specific concerns about the safety and addictiveness of e-cigarettes in

these groups. Otherwise, there was no clear difference between patient types, suggesting that clinicians' reluctance to recommend e-cigarettes was not related to specific patients but reflected more general concerns.

Clinicians generally do not feel that they have enough knowledge about e-cigarettes

Knowledge – both at the clinician level and at a wider scientific level – appears to be an important barrier in clinicians recommending e-cigarettes for smoking cessation. When asked what advice they would give to people who smoke about e-cigarettes, the most commonly endorsed statement included the phrase "we do not know enough about [e-cigarettes] so I don't endorse them" (Figure 7).

Notably, clinicians expressed striking uncertainty when asked their beliefs on e-cigarettes, with over a third of clinicians saying they were unsure if e-cigarettes were addictive or safe enough to recommend to patients who smoke (Figure 4). Despite evidence suggesting that vaping is less harmful that smoking[3-7], a similar proportion (around three in ten) of clinicians were unsure about the health effects of e-cigarettes compared with smoking tobacco (Figure 5).

Clinicians generally agree that their knowledge on e-cigarettes is lacking and that they would like to have more training (Figure 8). Fewer see e-cigarette training as a priority, perhaps reflecting their lukewarm attitudes towards their role in supporting smoking cessation generally, or prioritising other training over training on smoking cessation. Nonetheless, these results show that there is both a need and appetite for increased training for primary care clinicians in the use of e-cigarettes for smoking cessation.

Interestingly, the most cited source of information on e-cigarettes amongst clinicians was "news/media/advertising", with relatively few clinicians citing official sources such as Government, public health agencies, scientific literature, and internal guidance (Figure 9). This is worrying, as new reports on e-cigarettes can be confusing or conflicting, potentially contributing to clinicians' uncertainty around e-cigarettes. Clinicians largely acknowledged that they would be more likely to recommend e-cigarettes if more authoritative guidance on their use and evidence base was available. For example clinicians would be more likely to recommend e-cigarettes if they were integrated as part of a structured cessation programme, if they were recommended by professional associations or Government, if instructions were made available on their use, , or if clear evidence that they help people to stop smoking was communicated widely (Figure 11). Guidance currently does exist, and is available from a range of health authorities, including NICE[26], the Royal College of General Physicians, and Cancer Research UK[22]. Further development of such guidance, and increased signposting to it, would help to ensure that clinicians are able to advise patients on e-cigarette use with greater knowledge and confidence.

Clinicians are concerned about the safety of e-cigarettes

Concerns about safety are also an important barrier to recommending e-cigarettes for smoking cessation. When clinicians were asked what prevents them from recommending e-cigarettes, the two most widespread concerns, cited by over three in five clinicians, were around the unknown long-term harms of e-cigarettes (Figure 10). This is consistent with fewer than half of clinicians believing that e-cigarettes safe enough to recommend, and around a third being unsure (Figure 4).

Despite concerns about safety, many clinicians seem to agree that use of e-cigarettes is beneficial compared to smoking tobacco. There was a majority agreement that "recommending e-cigarettes is responsible because almost anything is better than smoking", and substantial disagreement with the statement that "transferring from smoking to long-term vaping means nothing has been gained" (Figure 6). Moreover, the majority of clinicians agreed that vaping as a complete replacement for smoking would improve health relative to smoking tobacco (Figure 5).

The majority of clinicians were concerned that e-cigarettes may be luring young people into smoking (Figure 6). There is currently little evidence in the UK to suggest that this is the case, and youth smoking rates continue to decline despite e-cigarettes becoming a more popular tool for smoking cessation[35,36].

Strengths and limitations

This is the first survey of a UK-wide sample of GPs and nurses and on their practice, beliefs, and knowledge around e-cigarettes. The survey has strengths in its theoretical basis in the Theoretical Domains Framework (TDF) and COM-B, its breadth of questions around e-cigarettes, and the relevance of these questions to current policy and practice around e-cigarettes in the UK. The use of prior qualitative work and "think aloud" interviews meant that the survey helped ensure that the questions asked were understood by clinicians, and accurately reflected their concerns.

One possible limitation is the online method of data collection, which may lead to biases in recruitment of clinicians. In this case participants were paid for completing the surveys, so it is unlikely that interest in the topic of e-cigarettes, or lack thereof, motivated completion. On the other hand, not all nurses and doctors use the websites on which the survey was advertised. The key to whether this will lead to selection biases hinges on the existence of systematic difference in e-cigarette views between clinicians who do and do not use resources like doctors.net. Although we cannot rule this out, there is no obvious reason why it might.

When comparing responses between groups, only univariate analyses were used. As such, differences between groups may be due to confounding factors (for example, gender or years practicing), rather than the tested variables themselves.

6 Policy Recommendations

Cancer Research UK's e-cigarette policy

Cancer Research UK is determined to reduce deaths from smoking-related cancer and support measures to health people quit. Our goal, shared by the UK Government, is to see a tobacco-free UK by 2030.

E-cigarettes are a relatively new smoking cessation tool and their long-term effects are unknown, but the long-term harms of smoking tobacco are indisputable and e-cigarettes represent an opportunity for harm reduction. The evidence so far indicates that e-cigarettes are far less harmful than tobacco smoking. Not only that, these devices have also been shown to be an effective smoking cessation tool for some people and are now the most popular tool used by smokers to help them quit. On this basis, we strongly discourage e-cigarette use by non-smokers, particularly young people, but advocate for e-cigarettes to be considered as a potential quitting tool by people who smoke. We support effective regulation to ensure e-cigarettes are only used by people who smoke when making a quit attempt, or to prevent relapse.

Several organisations in the UK, including Public Health England, the Royal College of Physicians, and the Royal College of General Practitioners, now recommend that clinicians give advice on e-cigarettes as one option to help their patients quit smoking.

Evidence so far in the UK indicates that regular use of e-cigarettes remains low in young people, especially in those who have never smoked and youth tobacco smoking also continues to decline. It is important to ensure appropriate and evidence-based regulation is in place that protects young people and non-smokers from taking up e-cigarettes without making accessing these products more difficult for smokers.

Cancer Research UK are committed to funding research in to tools and interventions that can help people to quit smoking, including on the effectiveness and relative short and long-term impact of e-cigarettes use as a smoking cessation tool.

The report has highlighted a range of important themes related to clinicians delivering smoking cessation support in general practice, including: clinicians' concerns about the long-term safety of e-cigarettes; barriers that prevent them from recommending them to patients who smoke; and the need for clearer signposting to information, and training on e-cigarettes as a smoking cessation tool in the UK.

Embed smoking cessation advice and interventions routinely in primary care practice

Primary healthcare professionals such as general practitioners (GPs) and practice nurses play an important role in supporting their patients to quit smoking. However, similar to previous work[34], this report shows that both GPs and nurses are missing opportunities to initiate discussions with their patients about smoking.

Moreover, while advice on the harms of smoking and the benefits of quitting are regularly communicated when smoking is raised, somewhat fewer are frequently acting to support patients to quit and there was variability in the type of smoking cessation support offered. For example, not only are clinicians rarely providing advice on the use of e-cigarettes as a quitting tool, some clinicians were actively advising against their use. The report also showed variable action through well-established interventions, and although the majority of general practice clinicians reported frequently referred patients to stop smoking services, fewer than half reported frequently prescribing relevant smoking cessation medications.

This is a symptom of a greater problem: evidence-based smoking cessation tools, including interventions like e-cigarettes must be embedded in routine primary care practice to reduce the impact of smoking in the UK.

Therefore, Cancer Research UK recommends healthcare professionals across the UK:

1 Be aware of the evidence-based smoking cessation treatment options available to patients in their local area and ensure patients are actively supported to quit smoking at every opportunity. This includes supporting the use of e-cigarettes as one smoking cessation tool, recommending they be used alongside behavioural support to increase the chances of quitting successfully.
2 Complete training in Very Brief Advice for smoking cessation and regularly employ this tool to initiate conversations with patients about stopping smoking.

Improve communication and dissemination of consistent, evidence-based messages about e-cigarettes to primary healthcare professionals

It is important that primary healthcare professionals have authoritative, consistent and evidence-based information readily available regarding e-cigarettes, so they can effectively support their patients to quit smoking using these tools. Official guidance endorsing e-cigarettes as a smoking cessation tool already exists, including from Cancer Research UK, various royal colleges[21,22], NICE[25], Public Health England, NHS Health Scotland, and other third sector organisations.

This report has shown that very few healthcare professionals are aware of this guidance, despite many agreeing that official endorsement would make them more likely to recommend e-cigarettes to their patients to stop smoking.

In addition, nurses and GPs reported drawing most of their information about e-

cigarettes from the media, which puts them and their patients at risk of being misinformed on the subject.

Based on this, Cancer Research UK recommends:

3 Governments, the health service, professional bodies and non-government organisations should more effectively signpost clinicians to existing evidence-based, authoritative clinical guidance on e-cigarettes as a smoking cessation tool. Guidance should include information on the unknown effects of long-term use, their relative safety compared to combustible tobacco, their effectiveness as a cessation tool and corresponding guidance on use among non-smokers.
4 Clinical e-cigarette guidance should be frequently reviewed to ensure that recommendations are based on the latest evidence.

It's important that this evidence is accessible, easily understood and subsequently embedded in clinical practice.

The study also showed that many primary care clinicians are reticent to recommend either e-cigarettes or licenced nicotine replacement therapies (NRT) long-term, despite continued use improving the success of a person's attempt to quit smoking.

In addition, the study found that that many clinicians were either unsure or unlikely to recommend e-cigarettes for smoking cessation if their patients had certain characteristics, including if they were pregnant, had a chronic disease or were living with a mental health condition.

Therefore, we recommend that any guidance on e-cigarettes or NRTs should:

5 Outline the relative safety of short- and long-term nicotine use compared to combustible tobacco, and articulate both unknown and any known side effects or implications to the use of specific products that deliver nicotine.
6 Provide clear, evidence-based clinical recommendations on the use of a range of smoking cessation tools, including e-cigarettes, for patients with specific characteristics (for example, people living with chronic health conditions, those who are pregnant, and long-term smokers).

Incorporate information on e-cigarettes in education and training programmes

To ensure healthcare professionals are embedding evidence-based e-cigarette guidance in clinical practice, smoking cessation training and education programmes must be updated to reflect the role of this emerging technology as a harm reduction smoking cessation tool.

This report has shown that very few clinicians had sufficient knowledge on e-cigarettes and most reported that they do not receive information about e-cigarettes in professional development and training programmes, despite many reporting that they would like more training on them. However, clear and consistent communication of the relative safety and role of e-cigarettes as a smoking cessation tool is a necessary precursor to embedding e-cigarettes in smoking cessation education and training programmes.

Based on this, Cancer Research UK recommends:

7 All smoking cessation education and training programmes in the UK should incorporate authoritative guidance and evidence-based information about a range of smoking cessation interventions and tools, including e-cigarettes. This includes national, local, and practice-level training programmes.

License e-cigarettes as a smoking cessation tool

This report has showed that health professionals would be more likely to recommend e-cigarettes to their patients if they could be prescribed as medication as part of a structured smoking cessation programme.

Given this, Cancer Research UK supports:

8 Light-touch Medicines and Healthcare products Regulatory Agency (MHRA) licencing of e-cigarettes making cessation claims. This would also provide a system for assessing the products and evidence supporting their claim, and for tracking adverse reactions.

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Appendices

Appendix 1: The survey

Start of Block: Screenout Agree and Age

Q1 E-cigarettes and Primary Care

Please read the following text, which explains the intent of this research:

This research is conducted by members of the department of Primary Care Health Sciences at the University of Oxford, in collaboration with Oxford Brookes University and ResearchNow.

Some people use electronic cigarettes (e-cigarettes) to assist with smoking cessation or for harm reduction purposes, while others are not comfortable with this. The aim of this study is to examine clinician attitudes and knowledge about electronic cigarettes (e-cigarettes) by asking them to complete an online questionnaire.

The survey should take **up to 10 minutes** to complete, and participants will be reimbursed with £10 via "Swift" on a pre-paid credit card after completion of the research.

Do you have to take part?

Your participation is voluntary and you may contact us to ask questions before you decide to participate. You may withdraw at any point during the questionnaire for any reason, before submitting your answers, by closing your browser window. However, we are only able to reimburse participants who complete the entire survey.

How will your data be used?

Your answers will be anonymous and will be will be treated as confidential. They will be combined with feedback from others like yourself.

This research will comply with the General Data Protection Regulation (GDPR) and the Data Protection Act 2018.

Your data will be stored in a password-protected file and may be used in academic publications. Your IP address will not be stored. All questions are optional and you may refuse to answer any question. Research data will be stored for a minimum of five years after publication or public release.

Your information may be shared with collaborators at other universities for the purpose of research. Responsible members of the University of Oxford or the funders, Cancer Research UK, may be given access to data for monitoring and/or audit of the study to ensure we are complying with guidelines, or as otherwise required by law.

Your information will used for research purposes only and will not be passed to any other organisation without your permission.

All results will be anonymised in accordance with ResearchNow privacy policy.

ResearchNow is the data controller with respect to any personal data collected in this

study. ResearchNow will share only fully anonymised data with the University of Oxford for the purposes of research.

The principal investigator of this study is Dr Anne Ferrey, who is attached to the Nuffield Department of Primary Care Health Sciences at the University of Oxford. This project has been reviewed by, and received ethics clearance through, the University of Oxford Central University Research Ethics Committee (R56092/RE001).

We need your consent in order for us to collect and use any information about you. ResearchNow won't keep any personal data you provide for longer than the duration of the study.

What if there is a problem?

If you have a concern about any aspect of this project, please speak to the PI, Dr Anne Ferrey (anne.ferrey@phc.ox.ac.uk), who will do her best to resolve your concern. If you remain unhappy or wish to make a formal complaint, please contact the relevant Chair of the Research Ethics Committee at the University of Oxford: Chair, Medical Sciences Inter-Divisional Research Ethics Committee; Email: ethics@medsci.ox.ac.uk; Address: Research Services, University of Oxford, Wellington Square, Oxford OX1 2JD

The Chair will seek to resolve the matter in a relatively expeditious manner.

Please note that the survey can only continue if you agree to all of the below.

If you have read the information above and agree to participate with the understanding that the data (including any personal data) you submit will be processed accordingly, please check the relevant box below:

	Yes (1)	No (2)
I certify that I am 18 years of age or over (1)	○	○
I agree to take part (2)	○	○

End of Block: Screenout Agree and Age

Start of Block: Healthcare Role

Q2 Which of the following best describes your *main* role in healthcare? (Choose one).

- ○ General practitioner (GP) (1)
- ○ Nurse (2)
- ○ Other health professional (3)

End of Block: Healthcare Role

Start of Block: Nurse type

Q3 Which of the following best describes you?

- ○ Practice Nurse (1)
- ○ District Nurse (2)
- ○ Other (please specify) (3)

Q4 We want to understand what region of the country you practise in.

Please could you give us the NHS practice code where you practise most of the time. We will use this only to match this with PHE data on practice deprivation scores.

- ○ NHS practice code (please write in) (1)
- ○ Prefer not to answer (2)

End of Block: Nurse type

Start of Block: Demographics

Q5 Are you...

- ○ Male (1)
- ○ Female (2)

Q6 What is your age?

- ○ Under 30 (1)
- ○ 30-39 (2)
- ○ 40-49 (3)
- ○ 50-59 (4)
- ○ 60 or over (5)

Display This Question:

If Which of the following best describes you? = Practice Nurse

Or Which of the following best describes you? = Other (please specify)

Q7 If you work in a GP practice, how many patients are registered at your practice?

Please enter the number of patients.

Display This Question:

If Which of the following best describes you? = Practice Nurse

Or Which of the following best describes you? = Other (please specify)

Q8 If you work in a GP practice, please write in the number of GPs working in this practice.

Please enter a number of GPs.

Display This Question:

If Which of the following best describes you? = District Nurse

Q9 Approximately what number of patients does your service cover?

Please enter a number.

Display This Question:

If Which of the following best describes you? = Practice Nurse

Or Which of the following best describes you? = Other (please specify)

Q34 Is your practice a dispensing practice?

- ○ Yes (1)
- ○ No (2)

Q10 Is your workplace based in a...

- ○ Rural area (1)
- ○ Urban area (2)
- ○ Semi-rural area (3)
- ○ Suburban area (4)
- ○ Other (please specify location) (5)

_____

Q11 How many years have you been practicing for?

_____

End of Block: Demographics

Start of Block: Smoking

Q12 How often do you raise the topic of smoking with a patient:

	Always (1)	Often (2)	Sometimes (3)	Occasionally (4)	Never (5)
When you do not know their smoking status (1)	○	○	○	○	○
When you know the patient is a smoker (2)	○	○	○	○	○
When it is relevant to the patient's condition (3)	○	○	○	○	○

Q13 When you raise the topic of smoking with someone when you are aware that they smoke, how often do you:

	Always (1)	Often (2)	Sometimes (3)	Occasionally (4)	Never (5)
Ask whether the patient smokes/still smokes (1)	○	○	○	○	○
Ask how much the patient smokes (2)	○	○	○	○	○
Advise the patient about the harms of smoking (3)	○	○	○	○	○
Advise the patient about the benefits of stopping smoking (4)	○	○	○	○	○
Offer referral to a stop smoking service (5)	○	○	○	○	○
Offer to prescribe smoking cessation medication (6)	○	○	○	○	○
Advise a patient to try an e-cigarette whether or not they continue smoking (7)	○	○	○	○	○

Advise a patient to use an e-cigarette only if they make a quit attempt (8)	○	○	○	○	○
Advise a patient not to use an e-cigarette (9)	○	○	○	○	○

Q14 When discussing smoking, what proportion of patients raise the topic of e-cigarettes or ask questions about vaping?

- ○ More than 75% of patients (1)
- ○ Between 51% and 75% of patients (2)
- ○ Between 25% and 50% of patients (3)
- ○ Less than 25% of patients (4)
- ○ None (5)

Q15 How often do your patients get upset or annoyed when you discuss their smoking?

- ○ Almost always (1)
- ○ Often (2)
- ○ Sometimes (3)
- ○ Occasionally (4)
- ○ Rarely or Never (5)

End of Block: Smoking

Start of Block: NRT

Q16 If a patient of yours had stopped smoking using nicotine replacement therapy for at least three months, would you:

	Yes (1)	No (2)
Advise them not to use nicotine replacement therapy long-term (1)	○	○
Advise them to continue nicotine replacement therapy if they think it will prevent them from returning to smoking (2)	○	○
Advise the patient about the harms of smoking (3)	○	○

End of Block: NRT

Start of Block: Switching to e-cigs

Q17 If a patient of yours had stopped smoking for at least three months by switching to e-cigarettes, would you:

	Yes (1)	No (2)
Advise them not to use e-cigarettes long-term (1)	○	○
Advise them to continue using e-cigarettes if they think it will prevent them from returning to smoking (2)	○	○
Advise them that long-term use of e-cigarettes is harmful (3)	○	○

End of Block: Switching to e-cigs

Start of Block: Safe/addictive

Q18 Do you believe e-cigarettes to be addictive?

- ○ Yes (1)
- ○ No (2)
- ○ I don't know (3)

Q19 Do you think e-cigarettes are safe enough to recommend to patients who smoke?

- ○ Safe enough to recommend (1)
- ○ Not safe enough to recommend (2)
- ○ I don't know (3)

Q20 How do you think the use of e-cigarettes affect patients' health *when compared with smoking tobacco?*

- ○ Improves health (1)
- ○ Has no effect on health (2)
- ○ Worsens health (3)
- ○ Not sure (4)

Q21 How do you think the use of e-cigarettes affect patients' health *when they vape as well as smoking tobacco?*

- ○ Improves health (1)
- ○ Has no effect on health (2)
- ○ Worsens health (3)
- ○ Not sure (4)

End of Block: Safe/addictive

Start of Block: Advice about e-cigarettes

Q22 Would your advice to a patient about using e-cigarettes include any of the following? Please tick all that apply.

- ☐ I would say that some patients find using e-cigarettes helpful to stop smoking tobacco, but we do not know enough about them so I don't endorse them (1)
- ☐ I would only recommend using e-cigarettes if all other medicinal therapies have failed (2)
- ☐ I would recommend using e-cigarettes to my patients as a first line therapy for stopping smoking tobacco (3)
- ☐ I would recommend using e-cigarettes to tobacco smokers who do not intend to quit or who have declined the offer of help (4)
- ☐ I would recommend using e-cigarettes to supplement another medicinal therapy such as Champix/varenicline or Zyban/buproprion (5)
- ☐ I would not offer any advice about using e-cigarettes to patients (6)
- ☐ I recommend patients not use e-cigarettes (7)
- ☐ Other advice (please specify) (8)

End of Block: Advice about e-cigarettes

Start of Block: Recommend e-cigarettes

Q23 Would you recommend using e- cigarettes to patients who smoke tobacco for any of the following purposes? Please tick all that apply.

- ☐ As a temporary measure to help them get used to not using tobacco, before eventually stopping vaping completely (1)
- ☐ As a partial replacement for smoking tobacco i.e. dual use of e-cigarettes and tobacco smoking (2)
- ☐ As a replacement for smoking tobacco i.e. sole use of e-cigarettes and no use of tobacco smoking (3)
- ☐ For other purposes (please specify) (4)
_____
- ☐ I would never recommend using e-cigarettes to patients who smoke tobacco (5)

Q24 What arguments do you think would be effective to persuade tobacco smokers

to switch to e-cigarettes? (Tick all that apply)

- ☐ It will improve your health (1)
- ☐ It will help you cut down your smoking (2)
- ☐ Vaping is cheaper than smoking (3)
- ☐ That you, a GP or nurse, recommend e-cigarettes. (4)
- ☐ Friends or family reporting that e-cigarettes have helped them quit (5)
- ☐ Celebrity endorsement of vaping/e-cigarettes (6)
- ☐ ⊗ None of the above – I don't think smokers can be persuaded to switch (7)
- ☐ Other (please specify) (8) _____

End of Block: Recommend e-cigarettes

Start of Block: E-cigarette statements

Q25 To what extent do you agree or disagree with the following statements about the use of e-cigarettes?

	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly disagree (5)
Overall, I think using e-cigarettes is a good thing compared to smoking tobacco (1)	○	○	○	○	○
Evidence suggests that long-term health risks from using e-cigarettes are very low (2)	○	○	○	○	○
Using e-cigarettes is more harmful than regular nicotine replacement therapies (e.g. patches, gum, nasal spray) (3)	○	○	○	○	○
People are no better off using e-cigarettes than they would be using other tobacco products (4)	○	○	○	○	○
E-cigarettes are cheaper than tobacco cigarettes and would provide financial benefits to patients (5)	○	○	○	○	○

Public health campaigns, such as 'Stoptober', should not endorse using e-cigarettes as a way to give up smoking tobacco cigarettes (6)	○	○	○	○	○

End of Block: E-cigarette statements

Start of Block: E-cigarettes for quitting

Q26 The following statements are about patients using e-cigarettes to stop or cut down on smoking tobacco. To what extent do you agree or disagree with these statements?

	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly disagree (5)
If licenced, e-cigarettes should be available on prescription for smoking cessation (1)	○	○	○	○	○
Health professionals should discourage patients from using e-cigarettes (2)	○	○	○	○	○
Most of my colleagues support patients using e-cigarettes as a way to stop smoking tobacco (3)	○	○	○	○	○
I would feel uncomfortable recommending that my patients use e-cigarettes (4)	○	○	○	○	○
Recommending e-cigarettes to patients would undermine existing stop smoking services (5)	○	○	○	○	○
E-cigarettes are a possible health risk, so I would not recommend them (6)	○	○	○	○	○

E-cigarettes may be addictive, so it would be unprofessional to recommend them (7)	○	○	○	○	○
Recommending e-cigarettes is responsible because almost anything is better than smoking (8)	○	○	○	○	○
Transferring from smoking to long-term vaping means nothing has been gained (9)	○	○	○	○	○
Using e-cigarettes to stop smoking is ok, but vaping while still smoking is likely to increase harm (10)	○	○	○	○	○
I worry that e-cigarettes are luring young people into smoking (11)	○	○	○	○	○

End of Block: E-cigarettes for quitting

Start of Block: E-cigarette training

Q27 The following statements are about your knowledge and training concerning the use of e-cigarettes. To what extent do you agree or disagree with these statements?

	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly disagree (5)
My current knowledge is sufficient for giving advice to patients who wish to know about using e-cigarettes (1)	○	○	○	○	○
I have had adequate training about the use of e-cigarettes to help patients stop smoking tobacco (2)	○	○	○	○	○
I am aware of current guidance on e-cigarettes (3)	○	○	○	○	○
I feel comfortable talking to my patients about using e-cigarettes (4)	○	○	○	○	○
I would like to have more training about e-cigarettes (5)	○	○	○	○	○
I have no training needs about the use of e-cigarettes as I don't recommend them (6)	○	○	○	○	○

Training on e-cigarettes is not a priority for me (7)	○	○	○	○	○

Q28 Where have you come across information about e-cigarettes? Please tick all that apply

- ☐ Government / public health agencies (e.g. Public Health England, WHO) (1)
- ☐ Professional associations (e.g. Royal College of General Practitioners Royal College of Nursing) (2)
- ☐ Charities / social enterprises (e.g. CRUK, ASH, NCSCT) (3)
- ☐ Scientific literature (4)
- ☐ Professional development / training (Please specify) (5)
- ☐ Internal guidance at place(s) of work (6)
- ☐ Healthcare colleagues (7)
- ☐ Patients / patients' friends or family (8)
- ☐ Own friends or family (9)
- ☐ News / media / advertising (10)
- ☐ E-cigarette companies / retailers (11)
- ☐ Social media (12)
- ☐ Other (please specify) (13)

End of Block: E-cigarette training

Start of Block: Recommending e-cigarettes

Q29 Have any of the following prevented you from recommending e-cigarettes to patients in the past? Please tick all that apply.

- ☐ Do not know long-term impact of e-cigarettes on health (1)
- ☐ E-cigarettes may trigger allergies (2)
- ☐ Concerns about safety of e-cigarette equipment and/or nicotine liquid (3)
- ☐ Promoting e-cigarettes may lead to non-smokers taking up "vaping" (4)
- ☐ E-cigarettes might interact with other medications, alcohol or recreational drugs (5)
- ☐ E-cigarettes might replace smoking and have no effect on the nicotine addiction (6)
- ☐ I am concerned about the potential risk of advising people to use e-cigarettes when there is no evidence about the long-term harms (7)
- ☐ Prefer to offer smoking cessation strategies that are already available (8)
- ☐ Other (please specify) (9)

Q30 What, if any, impact would the following circumstances have on your likelihood of recommending e-cigarettes?

	More likely to recommend (1)	No impact (2)	Less likely to recommend (3)
Prescribed as medication as part of a structured smoking cessation progamme (1)	○	○	○
Recommended by professional associations such as Royal Colleges (2)	○	○	○
Recommended by Government / public health agencies (e.g. Public Health England, WHO) (3)	○	○	○
Evidence that vaping while still smoking reduced the number of harmful chemicals inhaled (4)	○	○	○
Offered to hard-core smokers who do not intend to quit smoking (5)	○	○	○
Offered to patients with chronic conditions who do not intend to quit smoking (6)	○	○	○
Clear evidence that e-cigarettes help people stop smoking (7)	○	○	○
Clear evidence that e-cigarettes produce no short-term harms (8)	○	○	○

Knowledge about practical aspects of using e-cigarettes, such as what device to use, what level of nicotine to recommend, and the costs of vaping compared with smoking (9)	○	○	○
Evidence that there are minimal harms from long-term use of an e-cigarette (10)	○	○	○
Availability of a medically-licensed e-cigarette product (11)	○	○	○

Q33 Are there any other circumstances that might influence your likelihood of recommending e-cigarettes?

_____

End of Block: Recommending e-cigarettes

Start of Block: Recommending e-cigarettes for cessation

Q31 How likely is it that you would recommend e-cigarettes for smoking cessation to a patient with the following characteristics?

	Very likely (1)	Somewhat likely (2)	Neutral (3)	Somewhat unlikely (4)	Very unlikely (5)
Patient has one or more smoking-related diseases (cancer, COPD, asthma, heart disease etc.) (1)	○	○	○	○	○
Patient has a chronic disease not directly related to smoking (2)	○	○	○	○	○
Patient is economically disadvantaged or low-income (3)	○	○	○	○	○
Patient is under 20 years of age (4)	○	○	○	○	○
Patient has a mental health condition (5)	○	○	○	○	○
Patient has been smoking for more than 20 years (6)	○	○	○	○	○
Patient is pregnant (7)	○	○	○	○	○
Patient does not wish to stop smoking (8)	○	○	○	○	○

Patient is very motivated to stop smoking (9)	○	○	○	○	○

Q32 Please specify any other reason you might recommend e-cigarettes for smoking cessation.

_____

End of Block: Recommending e-cigarettes for cessation

Appendix 2: Sample demographics

	Nurses	GPs	*p*-value (difference between nurses and GPs)
Age (n, %)			N=1,000 nurses
Under 30	86 (8.6%)	3 (0.3%)	N=1,001 GPs
30-39	170 (17.0%)	265 (26.5%)	P<0.001
40-49	271 (27.1%)	399 (39.9%)	
50-59	386 (38.6%)	240 (24.0%)	
Over 60	87 (8.7%)	94 (9.4%)	
Gender (n, %)			N=1,001 nurses
Female	862 (86.1%)	424 (42.4%)	N=1,001 GPs
Male	139 (13.9%)	577 (57.6%)	P<0.001
Years practicing (mean, sd)	20.3 (11.1)	15.2 (8.9)	N=1,001 nurses N=1,001 GPs P<0.001
Role (n,%)			N=1,000
Principal GP		574 (57.3%)	
Salaried GP		262 (26.2%)	
Locum GP		165 (16.5%)	
Role (n, %)			N=999
Practice nurse	625 (62.6%)		
District nurse	77 (7.7%)		
Other	297 (29.7%)		
Region (n,%)			N=883 nurses
London	175 (19.8%)	113 (11.3%)	N=1,001 GPs
East Midlands	54 (6.1%)	71 (7.1%)	P<0.001
East of England	37 (4.2%)	92 (9.2%)	
West Midlands	73 (8.3%)	93 (9.3%)	
North East	44 (5.0%)	106 (10.6%)	
North West	106 (12.0%)	40 (4.0%)	
Yorkshire and Humber	61 (6.9%)	86 (8.6%)	
South Central	55 (6.2%)	71 (7.1%)	
South East Coast	69 (7.8%)	66 (6.6%)	
South West	87 (9.8%)	91 (9.1%)	
Northern Ireland	19 (2.1%)	29 (2.9%)	
Scotland	76 (8.6%)	94 (9.4%)	
Wales	27 (3.1%)	49 (4.9%)	
Location (n, %)			N=1,001 nurses
Urban	534 (53.4%)	407 (40.7%)	N=1,001 GPs
Suburban	204 (20.4%)	284 (28.4%)	P<0.001
Semi-rural	165 (16.5%)	216 (21.6%)	
Rural	81 (8.1%)	91 (9.1%)	
Other	17 (1.7%)	3 (0.3%)	
Number of GPs at practice			N=693 nurses

(mean, sd)	6.4 (5.0)	6.7 (4.2)	N=1,001 GPs P=0.155
Practice list size (mean, sd)	9,328 (9,500)	10,223 (7,209)	N=703 nurses N=1,001 GPs P=0.027
Index of Multiple Deprivation (IMD)* <15 ≥15, <20 ≥20, <25 ≥25, <30 ≥30	 150 (22.4%) 150 (22.4%) 104 (15.5%) 156 (23.3%) 111 (16.5%)	 116 (24.4%) 104 (21.9%) 76 (16.0%) 91 (19.1%) 89 (18.7%)	N=671 nurses N=476 GPs P=0.474
IMD* (mean, sd)	22.4 (8.5)	22.1 (8.8)	P=0.520

**IMDs extracted as averages for Local Authority district as only first half of postcode available.*

Appendix 3: Questionnaire responses by clinician type

Appendix 3.1 How often do you raise the topic of smoking with a patient? (Q12)

		N	Never	Occasionally	Sometimes	Often	Always
When you do not know their smoking status	Nurses	998	37 (3.7%)	79 (7.9%)	122 (12.2%)	280 (28.1%)	480 (48.1%)
	GPs	1001	10 (1.0%)	55 (5.5%)	228 (22.8%)	551 (55.1%)	157 (15.7%)
When you know the patient is a smoker	Nurses	1000	8 (0.8%)	16 (1.6%)	57 (5.7%)	314 (31.4%)	605 (60.5%)
	GPs	1001	0 (0%)	17 (1.7%)	109 (109%)	618 (61.7%)	257 (25.7%)
When it is relevant to the patient's condition	Nurses	999	4 (0.4%)	9 (0.9%)	49 (4.9%)	207 (20.7%)	730 (73.1%)
	GPs	1001	0 (0%)	4 (0.4%)	20 (0.2%)	344 (34.4%)	633 (63.3%)

Appendix 3.2 When you raise the topic of smoking with someone when you are aware that they smoke, how often do you...? (Q13)

		N	Never	Occasionally	Sometimes	Often	Always
Ask whether the patient smokes/still smokes	Nurses	1001	5 (0.5%)	18 (1.8%)	39 (3.9%)	266 (26.6%)	673 (67.2%)
	GPs	1001	1 (0.1%)	9 (0.9%)	66 (6.6%)	486 (48.6%)	439 (43.9%)
Ask how much the patient smokes	Nurses	1001	5 (0.5%)	15 (1.5%)	38 (3.8%)	246 (24.6%)	697 (69.6%)
	GPs	1001	1 (0.1%)	21 (2.1%)	62 (6.2%)	440 (44.0%)	477 (47.7%)
Advise the patient about the harms of smoking	Nurses	1001	10 (1.0%)	17 (1.7%)	67 (6.7%)	270 (27.0%)	637 (63.7%)
	GPs	1001	2 (0.2%)	31 (3.1%)	100 (10.0%)	450 (45.0%)	418 (41.8%)
Advise the patient about the benefits of stopping smoking	Nurses	1001	6 (0.6%)	16 (1.6%)	38 (3.8%)	246 (24.6%)	695 (69.5%)
	GPs	1001	2 (0.2%)	16 (1.6%)	63 (6.3%)	404 (40.4%)	516 (51.6%)
Offer referral to a stop smoking service	Nurses	1001	27 (2.7%)	29 (2.9%)	89 (8.9%)	306 (30.6%)	550 (55.0%)
	GPs	1001	26 (2.6%)	44 (4.4%)	143 (14.3%)	473 (47.3%)	315 (31.5%)
Offer to prescribe smoking cessation medication	Nurses	1001	255 (25.5%)	72 (7.2%)	166 (16.6%)	265 (26.5%)	243 (24.3%)
	GPs	1001	220 (22.0%)	218 (21.8%)	254 (25.4%)	218 (21.8%)	91 (9.1%)
Advise a patient to try an e-cigarette whether or not they continue smoking	Nurses	1001	364 (36.4%)	171 (17.1%)	259 (25.9%)	151 (15.1%)	56 (5.6%)
	GPs	1001	440 (44.0%)	221 (22.1%)	206 (20.6%)	110 (11.0%)	24 (2.4%)
Advise a patient to use an e-cigarette only if they make a quit attempt	Nurses	1001	337 (33.7%)	168 (16.8%)	247 (24.7%)	170 (17.0%)	79 (7.9%)
	GPs	1001	443 (44.3%)	187 (18.7%)	243 (24.3%)	108 (10.8%)	20 (2.0%)
Advise a patient not to use an e-cigarette*	Nurses	1001	538 (53.8%)	167 (16.7%)	171 (17.1%)	80 (8.0%)	45 (4.5%)
	GPs	1001	735 (73.4%)	143 (14.3%)	76 (7.6%)	36 (3.6%)	11 (1.1%)

**The responses to this question are not presented in the main report, as the question was believed to be misleading within the context it was given.*

Appendix 3.3 When discussing smoking, what proportion of patients raise the topic of e-cigarettes or ask questions about vaping? (Q14)

	N	None	<25%	25-50%	51-75%	>75%
Nurses	1001	27 (2.7%)	247 (24.7%)	292 (29.2%)	345 (34.5%)	90 (9.0%)
GPs	1001	23 (2.3%)	413 (41.3%)	357 (35.7%)	183 (18.3%)	25 (2.5%)

Appendix 3.4 How often do you patients get upset or annoyed when you discuss their smoking? (Q15)

	N	Rarely or never	Occasionally	Sometimes	Often	Almost always
Nurses	1001	192 (19.2%)	235 (23.5%)	406 (40.6%)	150 (15.0%)	18 (1.8%)
GPs	1001	344 (34.4%)	318 (31.8%)	273 (27.3%)	61 (6.1%)	5 (0.5%)

Appendix 3.5 If a patient of yours had stopped smoking using nicotine replacement therapy for at least three months, would you...? (Q16)

		N	Yes	No
Advise them not to use nicotine replacement therapy long-term	Nurses	1001	553 (55.2%)	448 (44.8%)
	GPs	1001	600 (59.9%)	401 (40.1%)
Advise them to continue nicotine replacement therapy if they think it will prevent them from returning to smoking	Nurses	1001	761 (76.0%)	240 (24.0%)
	GPs	1001	635 (63.4%)	366 (36.6%)
Advise the patient about the harms of smoking	Nurses	1001	796 (79.5%)	205 (20.5%)
	GPs	1001	684 (68.3%)	317 (31.7%)

Appendix 3.6 If a patient of yours had stopped smoking for at least three months by switching to e-cigarettes, would you...? (Q17)

		N	Yes	No
Advise them not to use e-cigarettes long-term	Nurses	1001	584 (58.3%)	417 (41.7%)
	GPs	1001	512 (51.2%)	489 (48.9%)
Advise them to continue using e-cigarettes if they think it will prevent them from returning to smoking	Nurses	1001	768 (76.7%)	233 (23.3%)
	GPs	1001	737 (73.6%)	264 (26.4%)
Advise them that long-term use of e-cigarettes is harmful	Nurses	1001	452 (45.2%)	549 (54.9%)
	GPs	1001	333 (33.3%)	668 (66.7%)

Appendix 3.7 Do you believe e-cigarettes to be addictive? (Q18)

	N	Yes	No	I don't know
Nurses	1001	591 (59.0%)	58 (5.8%)	352 (35.2%)
GPs	1001	602 (60.1%)	31 (3.1%)	368 (36.8%)

Appendix 3.8 Do you think e-cigarettes are safe enough to recommend to patients who smoke? (Q19)

	N	Safe enough to recommend	Not safe enough to recommend	I don't know
Nurses	1001	403 (40.3%)	230 (23.0%)	368 (36.8%)
GPs	1001	466 (46.6%)	171 (17.1%)	364 (36.4%)

Appendix 3.9 How do you think the use of e-cigarettes affects patients' health *when compared with smoking tobacco*? (Q20)

	N	Worsens health	Has no effect on health	Improves health	Not sure
Nurses	1001	36 (3.6%)	95 (9.5%)	511 (51.1%)	359 (35.9%)
GPs	1001	18 (1.8%)	56 (5.6%)	670 (67.0%)	257 (25.7%)

Appendix 3.10 How do you think the use of e-cigarettes affects patients' health *when they vape as well as smoking tobacco*? (Q21)

	N	Worsens health	Has no effect on health	Improves health	Not sure
Nurses	1001	405 (40.5%)	202 (20.2%)	75 (7.5%)	319 (31.9%)
GPs	1001	341 (34.1%)	222 (22.2%)	109 (10.9%)	329 (32.9%)

Appendix 3.11 Would your advice to a patient about using e-cigarettes include any of the following? (Q22)

	Nurses	GPs
I would say that some patients find using e-cigarettes helpful to stop smoking tobacco, but we do not know enough about them so I don't endorse them	615 (61.4%)	573 (57.2%)
I would only recommend using e-cigarettes if all other medicinal therapies have	295 (29.5%)	208 (20.8%)
I would recommend using e-cigarettes to my patients as a first line therapy for stopping smoking tobacco	192 (19.2%)	189 (18.9%)
I would recommend using e-cigarettes to tobacco smokers who do not intend to quit or who have declined the offer of help	323 (32.3%)	370 (37.0%)
I would recommend using e-cigarettes to supplement another medicinal therapy such as Champix/varenicline or Zyban/bupropion	105 (10.5%)	95 (9.5%)
I would not offer any advice about using e-cigarettes to patients	204 (20.4%)	161 (16.1%)
I recommend patients not use e-cigarettes	71 (7.1%)	35 (3.5%)
Other advice (please specify)	59 (5.9%)	68 (6.8%)

Appendix 3.12 Would you recommend using e-cigarettes to patients who smoke tobacco for any of the following purposes? (Q23)

	Nurses	GPs
As a temporary measure to help them get used to not using tobacco, before eventually stopping vaping completely	662 (66.1%)	664 (66.4%)
As a partial replacement for smoking tobacco i.e. dual use of e-cigarettes and tobacco smoking	210 (21.0%)	223 (22.3%)
As a replacement for smoking tobacco i.e. sole use of e-cigarettes and no use of tobacco smoking	414 (41.4%)	541 (54.1%)
For other purposes (please specify)	12 (1.2%)	9 (0.9%)
I would never recommend using e-cigarettes to patients who smoke tobacco	207 (20.7%)	160 (16.0%)

Appendix 3.13 What arguments do you think would be effective to persuade tobacco smokers to switch to e-cigarettes? (Q24)

	Nurses	GPs
It will improve your health	498 (49.8%)	598 (59.7%)
It will help you cut down your smoking	609 (60.8%)	623 (62.2%)
Vaping is cheaper than smoking	444 (44.4%)	485 (48.5%)
That you, a GP or nurse, recommend e-cigarettes	345 (34.5%)	442 (44.2%)
Friends or family reporting that e-cigarettes have helped them quit	552 (55.1%)	615 (61.4%)
Celebrity endorsement of vaping/e-cigarettes	121 (12.1%)	225 (22.5%)
None of the above – I don't think smokers can be persuaded to switch	81 (8.1%)	55 (5.5%)
Other (please specify)	35 (3.5%)	39 (3.9%)

Appendix 3.14 To what extent do you agree with these statements about e-cigarettes? (Q25/26)

		N	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
Overall I think using e-cigarettes is a good thing compared to tobacco smoking	Nurses	1001	32 (3.2%)	84 (8.4%)	252 (25.2%)	474 (47.4%)	32 (3.2%)
	GPs	1001	18 (1.8%)	42 (4.2%)	203 (20.3%)	520 (52.0%)	218 (21.8%)
Evidence suggests that long-term health risks from using e-cigarettes are very low	Nurses	1001	39 (3.9%)	160 (16.0%)	517 (51.7%)	238 (23.8%)	47 (4.7%)
	GPs	1001	35 (3.5%)	153 (15.3%)	499 (49.9%)	272 (27.2%)	42 (4.2%)
Using e-cigarettes is more harmful than regular nicotine replacement therapies	Nurses	1001	68 (6.8%)	184 (18.4%)	512 (51.2%)	186 (18.6%)	51 (5.1%)
	GPs	1001	48 (4.8%)	213 (21.3%)	483 (48.3%)	219 (21.9%)	38 (3.8%)
People are better off using e-cigarettes than they would be using other tobacco products	Nurses	1001	117 (11.7%)	353 (35.3%)	307 (30.7%)	179 (17.9%)	45 (4.5%)
	GPs	1001	162 (16.2%)	426 (42.6%)	234 (23.4%)	143 (14.3%)	36 (3.6%)
E-cigarettes are cheaper than tobacco cigarettes and would provide financial benefit to patients	Nurses	1001	25 (2.5%)	62 (6.2%)	380 (38.0%)	374 (37.4%)	160 (16.0%)
	GPs	1001	10 (1.0%)	39 (3.9%)	501 (50.1%)	360 (36.0%)	91 (9.1%)
Public health campaigns such as Stoptober should not endorse using e-cigarettes	Nurses	1001	56 (5.6%)	216 (21.6%)	376 (37.6%)	239 (23.9%)	114 (11.39%)
	GPs	1001	66 (6.6%)	275 (27.5%)	383 (38.3%)	195 (19.5%)	82 (8.2%)
If licenced, e-cigarettes should be available on prescription	Nurses	1001	93 (9.3%)	173 (17.3%)	274 (27.4%)	337 (33.7%)	124 (12.4%)
	GPs	1001	285 (28.5%)	249 (24.9%)	249 (24.9%)	177 (17.7%)	41 (4.1%)
Health professionals should discourage patients from using e-cigarettes	Nurses	1001	102 (10.2%)	284 (28.4%)	391 (39.1%)	153 (15.3%)	71 (7.1%)
	GPs	1001	111 (11.1%)	375 (37.5%)	376 (37.6%)	115 (11.5%)	24 (2.4%)
Most of my colleagues support patients using e-cigarettes as a way to stop smoking tobacco	Nurses	1001	40 (4.0%)	157 (15.7%)	411 (41.1%)	339 (33.9%)	54 (5.4%)
	GPs	1001	47 (4.7%)	153 (15.3%)	500 (50.0%)	268 (26.8%)	33 (3.3%)
I would feel uncomfortable recommending that my patients use e-	Nurses	1001	92 (9.2%)	232 (23.2%)	272 (27.2%)	292 (29.2%)	113 (11.3%)
	GPs	1001	102 (10.2%)	280 (28.0%)	253 (25.3%)	264 (26.4%)	102 (10.2%)

cigarettes							
Recommending e-cigarettes to patients would undermine existing stop smoking services	Nurses	1001	86 (8.6%)	309 (30.9%)	314 (31.4%)	238 (23.8%)	54 (5.4%)
	GPs	1001	91 (9.1%)	442 (44.2%)	248 (24.8%)	185 (18.5%)	35 (3.5%)
E-cigarettes are a possible health risk, so I would not recommend them	Nurses	1001	59 (5.9%)	217 (21.7%)	390 (39.0%)	248 24.8(%)	87 (8.7%)
	GPs	1001	63 (6.3%)	274 (27.4%)	381 (38.1%)	226 (22.6%)	57 (5.7%)
E-cigarettes may be addictive, so it would be unprofessional to recommend them	Nurses	1001	54 (5.4%)	214 (21.4%)	364 (36.4%)	269 (26.9%)	100 (10.0%)
	GPs	1001	64 (6.4%)	252 (25.2%)	365 (36.5%)	257 (25.7%)	63 (6.3%)
Recommending e-cigarettes is responsible because almost anything is better than smoking	Nurses	1001	38 (3.8%)	117 (11.7%)	314 (31.4%)	417 (41.7%)	115 (11.5%)
	GPs	1001	21 (2.1%)	87 (8.7%)	284 (28.4%)	467 (46.7%)	142 (14.2%)
Transferring from smoking to long-term vaping means nothing has been gained	Nurses	1001	70 (7.0%)	347 (34.7%)	268 (26.8%)	244 (24.4%)	72 (7.2%)
	GPs	1001	121 (12.1%)	451 (45.1%)	239 (23.9%)	154 (15.4%)	36 (3.6%)
Using e-cigarettes to stop smoking is ok, but vaping while still smoking is likely to increase harm	Nurses	1001	22 (2.2%)	87 (8.7%)	375 (37.5%)	364 (36.4%)	153 (15.3%)
	GPs	1001	21 (2.1%)	116 (11.6%)	405 (40.5%)	385 (38.5%)	74 (7.4%)
I worry that e-cigarettes are luring young people into smoking	Nurses	1001	41 (4.1%)	114 (11.4%)	177 (17.7%)	451 (45.1%)	218 (21.8%)
	GPs	1001	29 (2.9%)	115 (11.5%)	189 (18.9%)	457 (45.7%)	211 (21.1%)

Appendix 3.15 To what extent do you agree with these statements about your knowledge and training on e-cigarettes? (Q27)

		N	Strongly disagree	Somewhat disagree	Neutral	Somewhat agree	Strongly agree
My current knowledge is sufficient for giving advice to patients who wish to know about using e-cigarettes	Nurses	1001	134 (13.4%)	350 (35.0%)	248 (24.8%)	219 (21.9%)	50 (5.0%)
	GPs	1001	109 (10.9%)	382 (38.2%)	241 (24.1%)	225 (22.5%)	44 (4.4%)
I have had adequate training about the use of e-cigarettes to help patients stop smoking tobacco	Nurses	1001	283 (28.3%)	378 (37.8%)	190 (19.0%)	117 (11.7%)	33 (3.3%)
	GPs	1001	266 (26.6%)	431 (43.1%)	199 (19.9%)	88 (8.8%)	17 (1.7%)
I am aware of current guidance on e-cigarettes	Nurses	1001	110 (11.0%)	276 (27.6%)	260 (26.0%)	290 (29.0%)	65 (6.5%)
	GPs	1001	115 (11.5%)	336 (33.6%)	271 (27.1%)	245 (24.5%)	34 (3.4%)
I feel comfortable talking to my patients about using e-cigarettes	Nurses	1001	99 (9.9%)	247 (24.7%)	275 (27.5%)	303 (30.3%)	77 (7.7%)
	GPs	1001	76 (7.6%)	272 (27.2%)	281 (28.1%)	312 (31.2%)	60 (6.0%)
I would like to have more training about e-cigarettes	Nurses	1001	29 (2.9%)	33 (3.3%)	156 (15.6%)	435 (43.5%)	348 (34.8%)
	GPs	1001	39 (3.9%)	101 (10.1%)	239 (23.9%)	447 (44.7%)	175 (17.5%)
I have no training needs about the use of e-cigarettes as I don't recommend them	Nurses	1001	205 (20.5%)	339 (33.9%)	254 (25.4%)	130 (13.0%)	73 (7.3%)
	GPs	1001	176 (17.6%)	401 (40.1%)	254 (25.4%)	117 (11.7%)	53 (5.3%)
Training on e-cigarettes is not a priority for me	Nurses	1001	103 (10.3%)	336 (33.6%)	308 (30.8%)	206 (20.6%)	48 (4.8%)
	GPs	1001	41 (4.1%)	245 (24.5%)	288 (28.8%)	313 (31.3%)	114 (11.4%)

Appendix 3.16 Where have you come across information about e-cigarettes? (Q28)

	Nurses (N = 1001)	GPs (N = 1001)
Government / public health agencies (e.g. Public Health England, WHO)	382 (38.2%)	257 (25.7%)
Professional associations (e.g. Royal College of General Practitioners Royal College of Nursing)	179 (17.9%)	170 (17.0%)
Charities / social enterprises (e.g. CRUK, ASH, NCSCT)	85 (8.5%)	52 (5.2%)
Scientific literature	161 (16.1%)	197 (19.7%)
Professional development / training	163 (16.3%)	53 (5.3%)
Internal guidance at place(s) of work	163 (16.3%)	47 (4.7%)
Healthcare colleagues	434 (43.4%)	270 (27.0%)
Patients / patients' friends or family	467 (46.7%)	420 (42.0%)
Own friends or family	335 (33.5%)	172 (17.2%)
News / media / advertising	585 (58.4%)	584 (58.4%)
E-cigarette companies / retailers	293 (29.3%)	175 (17.5%)
Social media	424 (42.4%)	241 (24.1%)
Other (please specify)	36 (3.6%)	17 (1.7%)

Appendix 3.17 Have any of the following prevented you from recommending e-cigarettes to patients in the past? (Q29)

	Nurses (N = 1001)	GPs (N = 1001)
Do not know long-term impact of e-cigarettes on health	772 (77.1%)	748 (74.8%)
E-cigarettes may trigger allergies	196 (19.6%)	117 (11.7%)
Concerns about safety of e-cigarette equipment and/or nicotine liquid	589 (58.8%)	527 (52.7%)
Promoting e-cigarettes may lead to non-smokers taking up "vaping"	375 (37.5%)	387 (38.7%)
E-cigarettes might interact with other medications, alcohol or recreational drugs	241 (24.1%)	206 (20.6%)
E-cigarettes might replace smoking and have no effect on the nicotine addiction	283 (28.3%)	321 (32.1%)
I am concerned about the potential risk of advising people to use e-cigarettes when there is no evidence about the long-term harms	658 (65.7%)	595 (59.4%)
Prefer to offer smoking cessation strategies that are already available	529 (52.8%)	444 (44.4%)
Other (please specify)	28 (2.8%)	38 (3.8%)

Appendix 3.18 What, if any, impact would the following circumstances have on your likelihood of recommending e-cigarettes? (Q30)

		N	More likely to recommend	No impact	Less likely to recommend
Prescribed as medication as part of a structured smoking cessation programme	Nurses	1001	763 (76.2%)	203 (20.3%)	35 (3.5%)
	GPs	1001	656 (65.5%)	289 (28.9%)	56 (5.6%)
Recommended by professional associations such as Royal Colleges	Nurses	1001	822 (82.1%)	152 (15.2%)	27 (2.7%)
	GPs	1001	787 (78.7%)	196 (19.6%)	18 (1.8%)
Recommended by Government / public health agencies (e.g. Public Health England, WHO)	Nurses	1001	849 (84.8%)	134 (13.4%)	18 (1.8%)
	GPs	1001	830 (82.9%)	159 (15.9%)	12 (1.2%)
Evidence that vaping while still smoking reduced the number of harmful chemicals inhaled	Nurses	1001	729 (72.8%)	217 (21.7%)	55 (5.5%)
	GPs	1001	736 (73.5%)	245 (24.5%)	20 (2.0%)
Offered to hard-core smokers who do not intend to quit smoking	Nurses	1001	591 (59.0%)	277 (27.7%)	133 (13.3%)
	GPs	1001	489 (48.9%)	397 (39.7%)	115 (11.5%)
Offered to patients with chronic conditions who do not intend to quit smoking	Nurses	1001	646 (64.5%)	256 (25.6%)	99 (9.9%)
	GPs	1001	546 (54.6%)	377 (37.7%)	78 (7.8%)
Clear evidence that e-cigarettes help people stop smoking	Nurses	1001	861 (86.0%)	125 (12.5%)	15 (1.5%)
	GPs	1001	881 (88.0%)	113 (11.3%)	7 (0.7%)
Clear evidence that e-cigarettes produce no short-term harms	Nurses	1001	793 (79.2%)	182 (18.2%)	26 (2.6%)
	GPs	1001	703 (70.2%)	285 (28.5%)	13 (1.3%)
Knowledge about practical aspects of using e-cigarettes, such as what device to use, what level of nicotine to recommend, and the costs of vaping compared with smoking	Nurses	1001	734 (73.3%)	237 (23.7%)	30 (3.0%)
	GPs	1001	605 (60.4%)	378 (37.8%)	18 (1.8%)
Evidence that there are minimal harms from long-term use of an e-cigarette	Nurses	1001	820 (81.9%)	144 (14.4%)	37 (3.7%)
	GPs	1001	893 (89.2%)	96 (9.6%)	12 (1.2%)
Availability of a medically-licensed e-cigarette	Nurses	1001	769 (76.8%)	202 (20.2%)	30 (3.0%)

product	GPs	1001	585 (58.4%)	366 (36.6%)	50 (5.0%)

Appendix 3.19 How likely is it that you would recommend e-cigarettes for smoking cessation to a patient with the following characteristics? (Q31)

		N	Very unlikely	Somewhat unlikely	Neutral	Somewhat likely	Very likely
Patient has one or more smoking-related diseases (cancer, COPD, asthma, heart disease etc.)	Nurses	1000	111 (11.1%)	97 (9.7%)	212 (21.2%)	284 (28.4%)	296 (29.6%)
	GPs	1001	80 (8.0%)	58 (5.8%)	247 (24.7%)	365 (36.5%)	251 (25.1%)
Patient has a chronic disease not directly related to smoking	Nurses	995	94 (9.5%)	100 (10.1%)	309 (31.1%)	292 (29.4%)	200 (20.1%)
	GPs	1001	103 (10.3%)	107 (10.7%)	391 (39.1%)	282 (28.2%)	118 (11.8%)
Patient is economically disadvantaged or low-income	Nurses	997	81 (8.1%)	106 (10.6%)	390 (39.1%)	262 (26.3%)	158 (15.9%)
	GPs	1001	108 (10.8%)	113 (11.3%)	459 (45.9%)	222 (22.2%)	99 (9.9%)
Patient is under 20 years of age	Nurses	996	198 (19.9%)	190 (19.1%)	309 (31.0%)	175 (17.6%)	124 (12.5%)
	GPs	1001	193 (19.3%)	220 (22.0%)	365 (36.5%)	151 (15.1%)	72 (7.2%)
Patient has a mental health condition	Nurses	993	105 (10.6%)	121 (12.2%)	355 (35.8%)	255 (25.7%)	157 (15.8%)
	GPs	1001	108 (10.8%)	105 (10.5%)	418 (41.8%)	257 (25.7%)	113 (11.3%)
Patient has been smoking for more than 20 years	Nurses	996	61 (6.1%)	66 (6.6%)	243 (24.4%)	335 (33.6%)	291 (29.2%)
	GPs	1001	78 (7.8%)	76 (7.6%)	316 (31.6%)	329 (32.9%)	202 (20.2%)
Patient is pregnant	Nurses	996	315 (31.6%)	155 (15.6%)	263 (26.4%)	109 (10.9%)	154 (15.5%)
	GPs	1001	259 (25.9%)	209 (20.9%)	323 (32.3%)	122 (12.2%)	88 (8.8%)
Patient does not wish to stop smoking	Nurses	994	186 (18.7%)	134 (13.5%)	238 (23.9%)	246 (24.8%)	190 (19.1%)
	GPs	1001	198 (19.8%)	177 (17.7%)	245 (24.5%)	269 (26.9%)	112 (11.2%)
Patient is very motivated to stop smoking	Nurses	996	103 (10.3%)	139 (14.0%)	212 (21.3%)	244 (24.5%)	298 (29.9%)
	GPs	1001	114 (11.4%)	152 (15.2%)	247 (24.7%)	327 (32.7%)	161 (16.1%)

Appendix 4: Cross-tabulation of survey responses

Appendix 4.1 Potential influence of several circumstances on clinicians' recommendations of e-cigarettes, by whether or not they would current recommend them

What, if any, impact would the following circumstances have on your likelihood or recommending e-cigarettes? (Q30)	Would never recommend using e-cigarettes to patients who smoke tobacco (Q23)	Less likely	More likely	No impact	*p*-value
Prescribed as medication as part of a structured smoking cessation programme	No	68 (4.2%)	1194 (73.0%)	373 (22.8%)	<0.001
	Yes	23 (6.2%)	225 (61.3%)	119 (32.4%)	
Recommended by professional associations such as Royal Colleges	No	31 (1.9 %)	1357 (83.0%)	247 (15.1%)	<0.001
	Yes	14 (3.8%)	252 (68.7%)	101 (27.5%)	
Recommended by Government / public health agencies (e.g. Public Health England, WHO)	No	14 (0.9%)	1409 (86.2%)	212 (13.0%)	<0.001
	Yes	16 (4.4%)	270 (73.6%)	81 (22.1%)	
Evidence that vaping while still smoking reduced the number of harmful chemicals inhaled	No	60 (3.7%)	1244 (76.1%)	331 (20.2%)	<0.001
	Yes	75 (4.1%)	221 (60.2%)	131 (35.7%)	
Offered to hard-core smokers who do not intend to quit smoking	No	204 (12.5%)	934 (57.1%)	497 (30.4%)	<0.001
	Yes	44 (12.0%)	146 (39.8%)	177 (48.2%)	
Offered to patients with chronic conditions who do not intend to quit smoking	No	141 (8.6%)	1038 (63.5%)	456 (27.9%)	<0.001
	Yes	36 (9.8%)	154 (42.0%)	177 (48.2%)	
Clear evidence that e-cigarettes help people stop smoking	No	11 (0.7%)	1476 (90.3%)	148 (9.1%)	<0.001
	Yes	11 (3.0%)	266 (72.5%)	90 (24.5%)	
Clear evidence that e-cigarettes produce no short-term harms	No	23 (1.4%)	1266 (77.4%)	346 (21.2%)	<0.001
	Yes	16 (4.4%)	230 (62.7%)	121 (33.0%)	
Knowledge about practical aspects of using e-cigarettes, such as what device to use, what level of nicotine to	No	31 (1.9%)	1132 (69.2%)	472 (28.9%)	<0.001
	Yes	17 (4.6%)	207 (56.4%)	143 (39.0%)	

recommend, and the costs of vaping compared with smoking					
Evidence that there are minimal harms from long-term use of an e-cigarette	No	35 (2.1%)	1433 (87.7%)	167 (10.2%)	<0.001
	Yes	14 (3.8%)	280 (76.3%)	73 (19.9%)	
Availability of a medically-licensed e-cigarette product	No	52 (3.2%)	1145 (70.0%)	438 (26.8%)	<0.001

Appendix 4.2 Potential influence of patient characteristics on clinicians' recommendations of e-cigarettes, by whether or not they agree that e-cigarettes are a good thing compared to smoking

How likely is it that you would recommend e-cigarettes for smoking cessation to a patient with the following characteristics? (Q31)	Overall I think using e-cigarettes is a good thing compared to tobacco smoking (Q25)	Very unlikely	Somewhat unlikely	Neutral	Somewhat likely	Very likely	*p*-value
Patient has one or more smoking-related diseases (cancer, COPD, asthma, heart disease etc.)	Disagree/Neutral	119 (18.8%)	80 (12.7%)	220 (34.9%)	139 (22.0%)	73 (11.6%)	<0.001
	Agree	72 (5.3%)	75 (5.5%)	239 (17.5%)	510 (37.2%)	474 (34.6%)	
Patient has a chronic disease not directly related to smoking	Disagree/Neutral	126 (20.1%)	84 (13.4%)	275 (43.9%)	103 (16.4%)	39 (6.2%)	<0.001
	Agree	71 (5.2%)	123 (9.0%)	425 (31.0%)	471 (34.4%)	279 (20.4%)	
Patient is economically disadvantaged or low-income	Disagree/Neutral	116 (18.4%)	91 (14.5%)	321 (51.0%)	70 (11.1%)	31 (4.9%)	<0.001
	Agree	73 (5.3%)	128 (9.4%)	528 (38.6%)	414 (30.2%)	226 (16.5%)	
Patient is under 20 years of age	Disagree/Neutral	201 (32.0%)	121 (19.3%)	231 (36.8%)	48 (7.6%)	27 (4.3%)	<0.001
	Agree	190 (13.9%)	289 (21.1%)	443 (32.4%)	278 (20.3%)	169 (12.3%)	
Patient has a mental health condition	Disagree/Neutral	125 (20.0%)	100 (16.0%)	280 (44.9%)	87 (13.9%)	32 (5.1%)	<0.001
	Agree	88 (6.4%)	126 (9.2%)	493 (36.0%)	425 (31.0%)	238 (17.4%)	
Patient has been smoking for more than 20 years	Disagree/Neutral	98 (15.6%)	76 (12.1%)	273 (43.3%)	129 (20.5%)	54 (8.6%)	<0.001
	Agree	41 (3.0%)	66 (4.8%)	286 (20.9%)	535 (39.1%)	439 (32.1%)	
Patient is pregnant	Disagree/Neutral	250 (39.8%)	107 (17.0%)	186 (29.6%)	47 (7.5%)	39 (6.2%)	<0.001
	Agree	324 (23.7%)	257 (18.8%)	400 (29.2%)	184 (13.5%)	203 (14.8%)	
Patient does not wish to stop smoking	Disagree/Neutral	177 (28.2%)	102 (16.2%)	212 (33.8%)	95 (15.1%)	41 (6.7%)	<0.001
	Agree	207 (15.1%)	209 (15.3%)	271 (19.8%)	420 (30.7%)	260 (19.0%)	
Patient is very motivated to stop smoking	Disagree/Neutral	120 (19.1%)	103 (16.4%)	222 (35.3%)	119 (18.9%)	65 (10.3%)	<0.001

Appendix 5: Composition of "other" category for nurses

Description of Role	Number of Respondents
Nurse (Specific Specialty)	205
Nurse Practitioner	53
Consultant	2
Care Home	4
Educator	2
Health Visitor	5
Healthcare Assistant	1
Midwife	12
Ward Manager	2