A PILOT E-CIGARETTE VOUCHER SCHEME IN A RURAL COUNTY OF THE UK

Caitlin Notley, PhD [1,*], Pippa Belderson, PhD[1], Emma Ward, PhD[1], James Wade[2], Hannah Clarke[3]

1 Norwich Medical School, University of East Anglia, Norwich NR4 7TJ, UK
2 Smokefree Norfolk, East Coast Community Healthcare, Rosebery Court, Suite 5B, St. Andrews Business Park, Norwich, Norfolk, NR7 0HS
3 Norfolk County Council, Public Health, County Hall, Norwich, Norfolk

* Correspondence: c.notley@uea.ac.uk; 07881 527123; @AddictionUEA

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ABSTRACT

Introduction: E-Cigarette voucher schemes have been piloted across the UK to support populations to quit smoking. This short report evaluates a scheme that targets vulnerable and disadvantaged smokers who had failed to quit smoking by other means.

Methods: descriptive summary evaluation of service data on smoking outcomes and qualitative data from selected participants, as 'key-informants' (n=4) and key stakeholders (stop smoking staff, vape shop staff and GPs).

Results: In total, 668 participants were referred to the scheme, and 340 participants redeemed a voucher. By intention to treat analysis (ITT) 143/668 (21%) were recorded as quit smoking at 4 weeks. At 12 weeks, 7.5% of participants had quit, by ITT. Overall, the pilot project was well received by clients as it offered an affordable route into vaping for smoking cessation. GPs supported the scheme and appreciated being able to offer an alternative to entrenched smokers.

Conclusions: The scheme shows promise in supporting entrenched smokers to quit smoking. The offer of similar voucher schemes across the UK suggests potential to reduce overall smoking prevalence and associated morbidity and mortality.

IMPLICATIONS

Working with General Practitioners in a deprived area, it was possible to set up a vape shop voucher scheme for smoking cessation. Patients with co-morbidities who had tried and failed to quit smoking previously were referred to receive a vape shop voucher to be redeemed for an initial starter kit, alongside support from the stop smoking service. This innovative scheme enabled 42% of entrenched smokers who redeemed a voucher to successfully quit smoking at 4 weeks.

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INTRODUCTION

Despite declines in UK smoking prevalence to less than 15% (1), there remain populations where smoking prevalence is much higher. In Norfolk, a rural county of the UK, there are areas of marked deprivation and health inequality. Amongst adult routine and manual workers in Great Yarmouth, 31.1% of people were smokers in 2019 (2). The Great Yarmouth area has the highest prevalence of smoking in Norfolk as well as having a higher percentage of individuals living in the most deprived areas. There is urgent need for intervention in populations that continue to smoke tobacco, in order to reduce the burden of excess morbidity and mortality that unequally impacts the most vulnerable populations, exacerbating health inequalities.

When combined with behavioural support, people who use e-cigarettes to quit smoking are twice as likely to succeed as people who use other nicotine replacement products (3). E cigarettes have become the most popular UK consumer choice for smoking cessation support (1), and simplified regulation processes may mean that e-cigarettes could soon be prescribed (4). Although e-cigarettes are popular and effective for smoking cessation (5), initial start-up costs can be a barrier (6). Additionally, people need support to switch to vaping and avoid smoking relapse (7). Offering an e-cigarette voucher, combined with ongoing engagement with vape shops, may be an effective way to support and sustain smoking cessation.

This report describes a mixed methods evaluation of a vape shop voucher scheme pilot, implemented through a partnership between Smokefree Norfolk and a commercial vape shop. The pilot was designed to target people who had tried and failed to quit smoking before, those with physical and mental health difficulties, and those who are economically disadvantaged.

METHODS

SmokeFree Norfolk (SFN), commissioned by Norfolk County Council's (NCC) Public Health Service, delivered an e-cigarette voucher pilot scheme to residents aged 18 and over, which was initially targeted within the area of Great Yarmouth, between December 2019 – March 2020, but later extended through until July 2021. The scheme was paused in response to the Covid-19 pandemic between 20/03/2020 and 27/04/2020, when the service was modified and re-launched, providing remote telephone support and delivery of devices and e-liquids.

People who smoke and had been unsuccessful in past quit attempts were offered referral to the scheme (via four GP practices, Smokefree Norfolk, secondary care services or self-referral). GP referrals were by 'clinical judgement', where GPs were aware of patients with long term conditions who had been unable to quit smoking. Participants were initially referred to the specialist stop smoking service provided by SFN, where they could receive a £25 voucher at their assessment. They presented this voucher to a participating e-cigarette retailer in exchange for a start-up kit, and staff gave advice on the most appropriate products for them, and informal technical and peer support. Participants were required to cover ongoing costs. Voucher scheme participants were encouraged to continue to attend appointments with a stop smoking advisor. A small number of participants contributed in-depth qualitative data on perceptions and experiences via qualitative interviews, to inform recommendations for implementation and ongoing adoption of the pilot. This study reports on:

- Qualitative data gathered during initial phase of implementation: December 2019-April 2020

- Uptake of the voucher offer, and smoking outcomes, as recorded in routine service data, for the extended implementation period: December 2019 to July 2021.

Qualitative data were collected from a convenience (selected) sample of participants as 'key-informants', including smokers, and key stakeholders (vape shop staff, stop smoking advisers, and four GP practices). Views were sought specifically on the issues, practicalities, barriers and facilitators associated with working with vape shops to deliver community-based smoking relapse prevention support. All interviews were audio recorded and transcribed for analysis, which took a broad thematic approach.

Cessation outcomes at 4 and 12 weeks were planned to be CO verified at <10ppm pre-pandemic, but recorded as self-reported outcomes during the pandemic. No CO verification of self reported abstinence was achieved. Those lost to follow up were assumed to be continued smokers, as per the Russell standard(8).

RESULTS

Smoking outcomes (December 2019 to July 2021)

In total, 668 participants were referred to the scheme, and 340 participants redeemed a voucher for a vape starter kit.

The mean age of referrals was 41.4. A total of 230 (34.4%) were recorded as having a long-term health condition, and a total of 249 (37.3%) had a history of long-term mental health conditions, demonstrating that the pilot was successful in reaching the vulnerable populations it attempted to target.

At 4 weeks, 143 participants had quit smoking. (Table 1)

Table 1: Smoking outcomes

	Total*	4 week Quit	12 week Quit
Intention to Treat (referred to pilot scheme)	668	143 (21%)	50 (7.5%)
As Treated (redeemed vouchers)	340	143 (42%)	50 (15%)

*23 people were referred pre-pandemic; of whom 11 redeemed the voucher, 7 recorded 4 week quit

By intention to treat (ITT), this would be 143/668 (21%) quit at 4 weeks. At 12 weeks, n=50 had quit smoking, equating to 7.5% of participants by ITT. Analysis of the 'as-treated', per-protocol, sample shows that, of those redeeming a voucher 143/340 had quit smoking (42%), with 15% at 12 weeks.

Process outcomes (Gathered during initial phase: December 2019-April 2021)

E cigarette kits

The one-off voucher for £25 could be spent on any product and was priced to cover the cost of starter kits.

Partnership with GPs

The voucher scheme was well received by GPs overall, who felt that the scheme offered a new and valuable alternative to help smokers who had found it difficult to quit smoking:

> *A great innovative scheme for those who have not managed to give up and don't want to. Lots of my patients interested, I asked many to self refer… an innovative scheme for hard to help people and any schemes that reduce risk for this group is hard to come by and I really valued it.* [GP]

Stop smoking advisers felt that having had the initial referral via a GP was a strong facilitating factor for participants to attempting to quit:

> *They have been made aware of the vape project through their doctor's surgery and they have come in with that intention in mind. The clients that have come in already with that intention in mind are already keen to do it if that makes sense. We know that if doctors promote something then… if it's vape or giving up smoking using other products, if the doctor promotes it, then the client / patient is more likely to take it seriously.* [Stop smoking adviser]

Participant views

Participants interviewed felt that vaping had been a success for them:

> [Without being referred to the scheme] *I think I would still be smoking, going on to the vape has reduced my smoking considerably.*
>
> *It's the first time I've seen a scheme like this happening and I hope it continues, because it did help people like me and people that want to give up smoking.*

Three participants discussed having made multiple cessation attempts in the past and having relapsed. All three compared their experience of vaping positively with previous methods they had tried:

> *The vape has been an asset and I wish I had just done that in the first place rather than going to patches and gum. [Client]*

Removing the cost barrier:

All stop smoking staff who were interviewed, as well GPs providing feedback, felt that the scheme had been successful in reaching vulnerable groups, enabling those who could not otherwise afford it to access a vape starter kit. This was reiterated by participants:

> *Obviously it's cost free to start with and we didn't have the money to help us get started…I wouldn't have been able to afford to do it.* [Client]

A motivational 'nudge':

Aside from helping make the initial set-up possible for those who could not afford it, signing up to the voucher scheme (with a limited, seven day window to redeem) was also felt to have acted as a motivational incentive in its own right:

> *The voucher helped us to decide more positively to give up the smoking.* [Client]

Legitimising vaping as an aid to cessation:

All clients interviewed felt that receiving the voucher had reassured them that vaping was a legitimate or proper aid for quitting smoking. This was facilitated by often being referred in the first

instance by a GP or other health professional and going on to receive the voucher from an NHS stop smoking adviser.

> "[The stop smoking adviser] *was ever so pleasant woman and explained it all, how cigarettes have all sorts of horrible chemicals, with the vaping machine…not getting all that bad stuff. It made a lot of sense".* [Client]

Reducing apprehension about visiting a vape shop:

Receiving the voucher also reduced apprehension for some about visiting a vape shop for the first time, because they had been directed there, and felt they had a clear purpose for going. One client described how despite feeling initially apprehensive, upon visiting felt more at ease, something he attributed to a friendly atmosphere and customer service:

> *At first I didn't know what to expect, it's like when you are a kid and you start school for the first time, you don't know what to expect, do you know what I mean. But once you get in there and start talking to the people you start getting relaxed and everything.* [Client]

Barriers:

The predominant concern raised was thoughts on safety of e-cigarettes:

> *The only worry I had was the popcorn lung, you read on the internet, obviously I'm on the computer a lot and I read all about the popcorn lung. But the smoking nurse* [adviser] *reassured us that these oils are vetted…the government has been in there* [the shop]. [Client]

Having a negative impression or previous experience of vaping was also raised as a barrier. Clients interviewed spoke about their previous concerns that vaping equipment seemed overly complicated and off-putting:

> *The only other person I've known vaping ….oh good grief and I used to see them filling up, charging up, I thought for goodness sake. I can't be dealing with that ….a right palaver to do, that's probably what put me off to be honest.* [Client]

The pilot scheme provided an opportunity to reconsider and revisit vaping as a cessation method, overcoming these issues with support through the transition to vaping and advice on the importance of finding an appropriate device and liquid strength that worked for them:

> [Previous attempt at vaping] *it seemed to be very strong the liquid, hurting the back of my throat and everything. But now I've spoke to [vape shop manager] in the shop, he explained the different milligrams of nicotine in each one and he said you'd be on a number 3 then. And I tried the number 3 and it were fine, it didn't hurt my throat or nothing.* [Client]

DISCUSSION

The pilot vape shop voucher scheme shows promise, in that it supported 42% of people who redeemed a voucher to quit smoking at 4 weeks. Although this quit rate is lower than the service average of 55% (for people who set a quit date) for the comparable time period, it must be noted that the population targeted particularly entrenched smokers, with a high proportion of long term and mental health conditions.

For 15% of participants redeeming a voucher, the quit attempt was maintained at 12 weeks. This compares to 43.7% of smokers quitting in Norfolk from the same period with the support of the stop smoking service, but not part of the vape voucher scheme. Importantly, the scheme was well received by clients as it offered an affordable route into vaping for smoking cessation. Vaping offered clients an alternative to smoking and enabled a harm reduction option of continuing to use nicotine, as many participants had tried and failed to quit smoking by other means. The cost of supplying the vape shop vouchers (£25 each) was also considerably lower than the cost of standard stop smoking medication, where the average prescribing cost is £33 per person(9). It is also noteworthy that the pilot scheme operated during the immediate impacts of the COVID-19 pandemic lockdown and was interrupted due to this. The scheme was able to adapt well to remote provision.

A number of local authorities across the UK have commissioned small scale vape voucher pilot schemes. To our knowledge, the quit rate for the voucher scheme we report is comparable. A scheme in the North-West of the UK reported a quit rate of 62% at 4 weeks (CO validated) (10). Due to the 'entrenched' nature of the population, we might reasonably expect our outcomes to be modest. However, with vulnerable and highly nicotine dependent populations, even modest quit outcomes, or harm reduction outcomes, can have important public health benefit. Future research might usefully explore whether further support, or incentives to engage with stop smoking support beyond the initial voucher offer, could further improve benefit.

This study was limited by a small sample size (due to financial constraints on commissioning meaning that limited numbers of vape vouchers could be offered). The sample were 'selected', initially from a high deprivation area and then extended county wide. GPs were encouraged to refer participants, using clinical judgement, who had tried and failed to quit smoking in the past, thus the population might be considered particularly 'entrenched'. However, it is likely that participants agreeing to take part were people who may have had a more positive view of vaping, and thus to some extent 'self-selected'. Quit outcomes were not CO validated due to the coronavirus pandemic. CO monitoring was paused for much of the study data collection period. The qualitative sample was small. There was no attempt to reach 'saturation' of themes in analysis, since we selected 'key informants' to take part in interviews. A further limitation is that we were unable to assess how many of the people who redeemed the voucher actually used the vape kit, and how many continued to use vapes after the starter kit ran out.

Ongoing evaluation is important to continue to track delivery and outcomes of the pilot, but initial evaluation suggests promising outcomes, particularly considering the entrenched population. To improve public health by supporting deprived populations to quit smoking it is recommended that commissioners consider wider implementation of similar voucher schemes, with robust pre-planned evaluation to collect more information to allow reporting of reliable effect sizes.

DATA AVAILABILITY STATEMENT

Data available on request. The data underlying this article will be shared on reasonable request to the corresponding author.

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No funding was received for this evaluation project.

DECLARATIONS

All authors declare no financial or other conflicts of interest.

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