

Understanding the perspectives of people in custody and prison staff through the process of a major policy change: the introduction of smokefree prisons in Scotland

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Abstract

Background: Several jurisdictions have introduced smokefree policies in prisons, with or without permitting use of e-cigarettes, to address exposures to second-hand smoke (SHS) and tobacco-related harms among people in custody (PiC), but evidence on implementation and impacts is very limited to date.

Aims: This thesis comprises five publications which qualitatively explore smokefree prison policy and use of e-cigarettes in prisons from the perspective of PiC and prison staff in Scotland.

Methods: **Publications 1 and 2** explore staff views on smokefree prison policies and e-cigarettes in prisons, using focus groups (n=19) conducted *before* any such policy was announced. **Publication 3** explores smokefree prison policies using interviews (n=77 PiC) conducted with PiC as Scottish prisons *prepared* to go smokefree. **Publication 4** explores perspectives of staff and PiC *post-implementation* of smokefree policies using focus groups (n=99 staff) and interviews (n=23 PiC). **Publication 5** uses interviews (n=28 PiC) to explore e-cigarette use among PiC once smokefree rules were established.

Results: Staff were more positive than PiC about smokefree policies before and after implementation, although views were varied and complex in both groups. Opinions were influenced by (I) beliefs about the fairness of smokefree prison rules; (II) perceptions of ease/difficulty of removing tobacco from prisons; and (III) evaluations of individual-level and organisational impacts. Both groups reported that e-cigarette use helped with mandated smoking abstinence in prisons. However, concerns were raised about safety, misuse, cost, and continued e-cigarette use. The transition to smokefree prisons was reported to be less troublesome than PiC and staff had anticipated and benefits from reduced SHS exposures and active smoking were acknowledged. In contrast, identified challenges centred on difficulties managing without tobacco and use of alternatives (e.g. e-cigarettes) among PiC.

Conclusion: Findings suggest smokefree policies can be successfully implemented in prisons, providing they are underpinned by adequate planning, communication and support.

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Overview of thesis

This thesis comprises five interrelated scientific papers related to the introduction of comprehensive smokefree policies in Scotland's prisons implemented on 30th November 2018. The underpinning studies were conducted between 2016 and 2020 as part of two larger, complementary programmes of research: the National Institute for Health Research (NIHR) funded Tobacco In Prisons study (TIPs) and the Cancer Research UK funded 'E-cigarettes in Prisons' study. Taken together, the papers included in this thesis aim to increase understanding of a process of major organisational change, namely the prohibition of the sale and use of tobacco in prisons, from the perspectives of people in custody (PiC) and prison staff, using data collected at key stages in the development, planning and implementation process.

Publications 1 and 2 report findings of a qualitative focus group study conducted with prison staff in Scotland during 2016-2017 before it was known that comprehensive smokefree rules would be introduced in prisons. Specifically, **Publication 1** explores staff perspectives on proposals to introduce a new, stricter smoking policy for PiC in Scotland, *before* it was known whether and how the Scottish Prison Service (SPS) or Government would change rules on tobacco use in prisons. Results of contemporaneous surveys of prison staff and PiC are also presented in this publication. **Publication 2** explores in detail prison staff views on the potential benefits and risks of introducing e-cigarettes for PiC to support proposals for new smoking rules, using the same focus group dataset as **Publication 1**. Following these studies, the SPS and Scottish Government committed, in July 2017, to the decision to introduce comprehensive smokefree policies in Scottish prisons, partly informed by evidence of second-hand smoke exposures in prisons collected as part of the broader TIPs research programme. **Publication 3** reports findings from a subsequent qualitative interview study (i.e. conducted when prisons were *preparing* to go smokefree) which explores perspectives on the forthcoming change to prison smoking policy among PiC. The studies reported in **Publication 4** and **Publication 5** were conducted 6-9 months *after* implementation of the smokefree policy for PiC. **Publication 4** reports data on perspectives on the smokefree prison policy, using staff focus group data and one-to-one interviews with PiC. **Publication 5** describes e-cigarette use in Scottish

prisons under smokefree rules, using interview data collected from a different sample of PiC to **Publications 3** and **4**.

Taken together, the thesis, comprehensively documents and critically appraises this combined body of qualitative work which has been generated on perspectives on smokefree prison policies among prison staff and PiC in Scotland. From a suite of relevant publications, I have chosen to include five, on which I am the lead author, to provide a rich account and illustrate perspectives among prison staff and PiC at key stages before, during and after implementation of smokefree prison policies. Other related papers which I have co-authored during this time, but do not form part of this thesis, are listed at Appendix 1. The majority of work reported in this thesis has been conducted since I commenced my employment at Stirling University in March 2018, following the move of Kate Hunt and the TIPs grant to the University in late February 2018; at this stage the focus groups reported in **Publication 1** and **2** had been conducted, but analysis of these data for publication 2 were ongoing. As soon as I arrived in post, my primary supervisor and I sought advice on how to register to undertake my PhD by publication although it took some time for the registration to be processed. Although most of the work for **Publication 1** had been carried out while I was working on TIPs at Glasgow University it is included here to provide important context. Substantial work for **Publication 2** was undertaken while I was in the process of registering for the PhD.

The thesis is structured as follows: *Chapter 1* provides an overview of relevant literature, the policy and research context and aims of the thesis; *Chapter 2* describes the studies' methods; *Chapters 3-7* incorporate the publications; and *Chapter 8* examines the contribution, impact and reception, strengths and limitations and policy implications of the publications before exploring the need for further research.

Chapter 1. Background and aims

The publications that comprise this thesis explore the development, introduction and evaluation of a new smokefree prison policy in Scotland's 15 prisons from 30th November 2018, from the perspectives of people in custody (PiC) and prison staff. This chapter provides an overview of the relevant literature and the evidence gaps that the work seeks to address (1.1). It also describes the policy and research context (1.2) and outlines the aims of the work and lists the publications included in this thesis and the author's contribution to each publication (1.3).

1.1 Overview of relevant literature

This section begins by describing smoking among PiC in prisons without smokefree policy. It then briefly examines smoking prevalence among prison staff, provides an overview of the health risks of smoking and second-hand smoke, highlighting specific issues for those living and working in prisons, and explores the place of smoking in prison culture. It also examines evidence on a key measure to reduce smoking-related harms among staff and PiC: smokefree prison policies. This section draws on relevant publications, some of which I have co-authored, from the wider Tobacco In Prisons Study (TIPs) as appropriate. *Appendix 1* contains a list of seven publications from the TIPs and 'E-cigarettes in Prisons' study on which I am a co-author, in addition to those which form the basis for this PhD. The final section provides an overview of evidence gaps that the work seeks to address.

In preparing this section I updated searches conducted for the TIPs and the 'E-cigarettes in Prisons' study and drafting of manuscripts. PubMed was searched using the following terms 'prison smoking ban', 'smokefree jail/prison', 'e-cigarette prison' and 'tobacco prison' on 25th November 2020.

1.1.1 Smoking among people in custody in prisons without smokefree policy

Studies that have examined smoking prevalence in prison populations have shown, in almost all countries studied, that smoking prevalence is higher among PiC than among the general population. One systematic review found that smoking rates were typically 1.3-7.3 times higher for imprisoned men and 1.7-62.6 times higher for

imprisoned women (Spaulding et al. 2018). In Scotland in 2015, recorded rates of smoking were 3-4 times higher among PiC (72% (Scottish Prison Service 2015)) than the general public (21% (Scottish Government 2016)). Smoking rates among PiC partly reflect a high prevalence of smoking in what are sometimes referred to as 'disadvantaged groups' (David et al. 2010; Drope et al. 2018; Hiscock et al. 2012; WHO 2014) who often are overrepresented in prisons (Graham 2007; McVie and Matthews 2018). Examples include: people living on low incomes (Casetta et al. 2016), those with mental health conditions (Richardson et al. 2019), people with experience of homelessness (Baggett and Rigotti 2010; Soar et al. 2020), those using services for alcohol and other drugs (Guydish et al. 2016) and care-experienced individuals (ScotPHO 2009). Thus, smoking rates among PiC are closer to smoking rates for intersecting groups. For example, smoking prevalence among people living in the most deprived areas in Scotland was 35% in 2015 (Scottish Government 2020b), as compared with 72% for PiC in the equivalent period (Scottish Prison Service 2015). Social gradients in smoking are driven by socioeconomic inequalities in countries (Barbeau et al. 2004). Individuals from disadvantaged groups are more likely to initiate and escalate smoking (Green et al. 2016) because of factors such as exposure to smoking behaviours and norms among family and social circles (Fergusson et al. 2007), and greater exposures to tobacco retailers (Caryl et al. 2019; Pearce et al. 2015). Additionally, disadvantaged smokers are less likely to successfully stop smoking (Hiscock et al. 2013; Smith et al. 2020), despite many attempting to do so (Kotz and West 2009). Reasons for these difficulties may relate to high nicotine dependence (Chen et al. 2019), positive associations between smoking and mood management (Twyman et al. 2014), links between smoking and identity (Meijer et al. 2015; Meijer et al. 2017), co-occurring conditions and/or personal circumstances (Kerr et al. 2013; Pateman et al. 2016; Wiltshire et al. 2003) and issues relating to uptake and provision of support and interventions to help quitting among (disadvantaged) smokers (Garnett et al. 2020; Hill et al. 2014; Twyman et al. 2014; van Wijk et al. 2019).

1.1.2 Smoking among prison staff

Evidence on smoking prevalence among prison staff is limited (Sweeting and Hunt 2015) and findings are inconsistent regarding whether smoking rates for staff are

higher or lower than among the general population (Sweeting and Hunt 2015). Variation in the findings of studies may particularly reflect differences in rules for staff on the use of tobacco at work (Hartwig et al. 2008). Smoking rates among prison staff are likely to be lower in situations where staff are not permitted to smoke at work, as evidenced by increased smoking reduction and cessation in other workplaces following implementation of smokefree rules (Fichtenberg and Glantz 2002). In contrast, those working in environments where smoking is permitted may encounter barriers to initiating and making successful quit attempts due to repeated exposures to smoking cues, for instance (Buczowski et al. 2014).

1.1.3 Smoking harms for prison staff and people in custody

This section describes the adverse health effects of smoking, including for PiC and prison staff specifically.

Health risks of smoking

Despite substantial declines in smoking prevalence in countries with comprehensive tobacco control strategies (Dubray et al. 2015), smoking is a leading preventable cause of diminished health and premature death worldwide. In 2015, ~149 million years were lost to disease and mortality attributable to smoking (measured in DALYs) (Reitsma et al. 2017). Smoking increases risks of developing six of the eight leading causes of death globally (David et al. 2010). It is estimated that smokers die, on average, at least 10 years younger than non-smokers (Doll et al. 2004; Pirie et al. 2013) and that smoking kills over 6 million people worldwide each year (Reitsma et al. 2017). Around 16% (~10,000) of all deaths in Scotland each year are attributable to smoking (Information Services Division 2018); historic smoking trends are suggested to be a key reason for lower life expectancy in Scotland than in other high income countries (Kelly and Preston 2016).

Smoking has a detrimental effect on individual health, including respiratory problems and health-related absences from school or work in the short-term (Bonnie et al. 2015). Smoking markedly increases risks of poor health in middle and later life, including cancers, stroke, blindness, cataracts, coronary heart disease, pneumonia, chronic obstructive pulmonary disease (COPD), asthma, diabetes, and fertility problems (U.S. Department of Health and Human Services 2014). Maternal smoking

poses substantial risk of harm to foetal and child health including effects on preterm birth, low birth weight, sudden infant death syndrome, neurodevelopment and behavioural problems, hypertension, impaired lung function and asthma (Banderali et al. 2015). However, risks of poor health outcomes are substantially reduced by smoking cessation: those who quit smoking by age 40 are estimated to reduce risks of premature death associated with smoking by ~90% (Jha et al. 2013; Pirie et al. 2013). Quitting smoking during pregnancy improves foetal outcomes, particularly if cessation occurs during the first trimester (McCowan et al. 2009).

Smoking and health in people in custody and other disadvantaged groups

Smoking is an important contributor to the high burden of ill-health and premature death among disadvantaged groups, including people who are in or have been in prison (Binswanger et al. 2014; Binswanger et al. 2007; Binswanger et al. 2016). With respect to prison health, a small study of 247 imprisoned smokers found that just under 40% reported having an 'illness caused by or worsened by smoking' and over half expressed 'moderate' or 'a lot' of concern about the impact of smoking on their health (Parker et al. 2014). Another more comprehensive US study based on analysis of survey and routinely collected justice service data, found that smoking attributable mortality and years of potential life lost rates were higher among PiC than in the general population, and the authors concluded that '[S]moking contributes to substantial excess mortality in prisons' (Binswanger et al. 2014, p.4).

It has also been shown that people released from prison are at an increased risk of death (Spittal et al. 2019; Zlodre and Fazel 2012). A US study identified tobacco use as a risk factor for all-cause mortality among people released from prison (Binswanger et al. 2016). Other risk factors included homelessness, injecting drug use, cirrhosis, and use of psychiatric medications prior to release (Binswanger et al. 2016). Studies generally suggest that drug overdose is a leading cause of death among people released from prison (particularly in the immediate period post-release) (Binswanger et al. 2016). For instance, a 2007 US study identified drug overdose as the leading cause of death followed by cardiovascular disease, for which smoking is a risk factor, homicide and suicide (Binswanger et al. 2007). Findings are broadly supported by a study of people released from prison in Scotland. This study found that drug-related deaths and suicides were, in absolute

terms, the most common single causes of death among people who had been in prison (Graham et al. 2015). The authors also note that relative mortality excess was increased, in men and women, for cardiovascular and respiratory causes and, in women only, for lung cancer (Graham et al. 2015). The findings may partly reflect a high historic smoking prevalence in Scottish prisons, although the authors do not discuss potential causes of excess deaths for cardiovascular, respiratory causes or lung cancer among people released from prison.

Due to social gradients in smoking rates, tobacco use is a major contributor to inequalities in health (David et al. 2010; Jarvis and Wardle 2005; Jha et al. 2006; Marmot 2006). Jha et al (2006) estimate that more than half of the difference in male mortality (at age 35-69 years) between the highest and lowest socio-economic groups in four high income countries is attributable to smoking. Furthermore, a Scottish cohort study found that smoking status had a greater impact on survival than socioeconomic circumstances; never smokers in the study tended to live longer than smokers, irrespective of social position (Gruer et al. 2009).

These studies suggest that reducing active smoking among people currently or formerly in prison may have substantial benefits for reducing inequalities, as well as for individual health.

Health risks of second-hand smoke exposures

Tobacco smoke is estimated to contain more than 50 carcinogens (U.S. Department of Health and Human Services 2006) and poses substantial risks to the health of bystanders who breathe in other people's cigarette smoke (referred to as 'second-hand smoke (SHS) exposures') (Öberg et al. 2011; U.S. Department of Health and Human Services 2006). The total global burden on health from SHS exposures is substantial: ~600,000 deaths annually are attributable to SHS, and ~11 million years of life are lost due to premature mortality and disability (Öberg et al. 2011). A systematic review of epidemiological evidence on the relationship between SHS and diseases found that exposure to SHS increases risks for eleven adverse health outcomes (Cao et al. 2015). Causal links between SHS exposures and lung cancer, coronary heart disease and stroke in adult never smokers have been established (U.S. Department of Health and Human Services 2014). SHS exposures pose

particular harm to unborn babies and children, increasing risks for low birth weight, sudden infant death syndrome, middle ear disease, respiratory symptoms, and poor lung function (U.S. Department of Health and Human Services 2014).

Eliminating or reducing SHS exposures is shown to have substantial benefits for adults' health outcomes, including reducing acute coronary events and respiratory symptoms, and for perinatal and child health outcomes including preterm birth and asthma-related hospital visits (WHO n.d.). Studies of the health of bar workers before and after the implementation of smokefree legislation in California (Eisner et al. 1998) and Scotland (Ayres et al. 2009) found evidence of rapid improvement of respiratory health and sensory symptoms. Importantly, the authors of the Scottish study noted that improvements in health were reported by both non-smoking and smoking bar workers, suggesting that smokefree environments have the potential to benefit people, regardless of smoking status (Ayres et al. 2009). Another study of smokefree legislation in Scotland examined the long-term effects on heart attacks in the general population (not just bar workers). The study found that initial benefits had persisted 10 years after smokefree legislation was implemented in Scotland for older (≥ 60 years) but not younger people (Mackay and Pell 2019). The authors suggest this may be due to increases in heart attacks in younger people in recent years due to rises in obesity and type 2 diabetes (Mackay and Pell 2019).

People living or working in prison may be exposed to harmful levels of SHS because of high smoking rates among PiC. Relatively few studies have been conducted to assess concentrations of, or exposure to, SHS in prisons and none, prior to the measurements undertaken by TIPs in Scotland (Demou et al. 2020; Semple et al. 2019; Semple et al. 2017), have collected data across a whole prison system. Reasons for this are likely to relate to the substantial practical and logistical challenges of measuring SHS exposures in prisons settings. These include difficulties gaining the required levels of access to prisons; potential suspicion from PiC and/or staff about motivations for the work; the (perceived negative) implications if SHS exposure levels are shown to be high; and risks of interference or damage to potentially expensive measurement instruments (Jayes et al. 2019; Thornley et al. 2013). Consequently, some studies (Jayes et al. 2016; Proescholdbell et al. 2008) have not been able to achieve the long measurement periods required to produce

more fully representative SHS exposure data. Nonetheless, accumulating evidence from several countries, e.g. US (Hammond and Emmons 2005; Proescholdbell et al. 2008), Switzerland (Ritter et al. 2012), New Zealand (Thornley et al. 2013), Australia (He et al. 2016), and UK (Demou et al. 2020; Jayes et al. 2019; Jayes et al. 2016; Semple et al. 2019; Semple et al. 2017), indicates that prison staff and PiC are exposed to SHS even when partial restrictions on smoking apply (Jayes et al. 2016; Ritter et al. 2012; Semple et al. 2017). Estimates of SHS exposure levels vary markedly between the existing studies, possibly reflecting variation in both methods for measuring exposures (Semple et al. 2017) and penal contexts (e.g. in terms of smoking prevalence, smoking restrictions and enforcement, and building design). In some cases, the authors note that average levels of SHS in prisons are high (Hammond and Emmons 2005; Jayes et al. 2019; Jayes et al. 2016; Semple et al. 2017) and may be equivalent to or higher than levels of SHS in the homes of smokers (Hammond and Emmons 2005; Semple et al. 2017). SHS levels have been shown to be a particular hazard in specific areas of prisons e.g. areas where PiC lived and slept, (Hammond and Emmons 2005; Semple et al. 2017) and for staff in particular roles/shifts (Demou et al. 2020). Evidence of SHS exposures in prisons is likely to have fuelled concerns among commentators, policy-makers and trade unions that high rates of smoking in prisons pose a serious risk to the health of non-smoking staff and PiC (Scottish Prison Service 2017a), as well as smokers themselves.

1.1.4 Smoking in prison culture

Tobacco has a significant role in prison culture (Baybutt et al. 2014; Butler et al. 2007; MacDonald et al. 2010; Richmond et al. 2009; Richmond et al. 2012; Sweeting and Hunt 2015; Taylor et al. 2012) and this is likely to be a salient factor in the maintenance or escalation of smoking among PiC (Muller et al. 2018). Imprisonment may also lead to smoking resumption and concern has been expressed that some non-smokers may take up smoking in prison (Baybutt et al. 2014). Smoking is an important part of the daily routines of many PiC who may repeat smoking habits and rituals at particular times of the day to maintain personal identity, create structure, demarcate time, and alleviate the boredom caused by limited variety in prison regimes and limited opportunities for purposeful activities (Baybutt et al. 2014;

Richmond et al. 2009; Sweeting and Hunt 2015). Many PiC regard smoking to be a rare pleasure in prison and it has been described as 'a symbol of freedom in a group with few rights and privileges' (Butler et al. 2007, p.291). Imprisonment can be associated with adverse psychological (and physical) outcomes (Massoglia and Pridemore 2015; van den Berg et al. 2016), perhaps because of the major disruption to daily life, anxieties about the future, repeated exposure to environmental stressors and separation from support networks (Massoglia and Pridemore 2015; Prison Reform Trust n.d). In this light, PiC can feel particularly dependent on smoking for emotional regulation and alleviating symptoms of underlying poor mental health or low wellbeing (Baybutt et al. 2014; MacDonald et al. 2010; Reddy et al. 2014; Richmond et al. 2012; Sweeting and Hunt 2015). Tobacco is also noted to be a particularly useful alternative currency in prisons (Richmond et al. 2009) because it has wide appeal among PiC, is 'a portable, semidurable object' (Lankenau 2001, p.5), is easily divisible, and it can be used to buy items or favours through the informal prison economy. Given the significance of smoking among PiC, tobacco has been used by staff as a way to manage PiC's behaviours and support the smooth operation of prison regimes (Richmond et al. 2009; Sweeting and Hunt 2015; Taylor et al. 2012).

Conversely, smoking habits among PiC may change (reduce or stop) in prison because of circumstances imposed by the context e.g. limited access to tobacco or lack of funds to make purchases (MacDonald et al. 2010). Alternatively, PiC may quit smoking voluntarily in prison, since many express a desire to give up smoking, to improve health or save money, for instance (Awooda and Shashati 2019; Baybutt et al. 2014; MacDonald et al. 2010). A recent study of smoking cessation among PiC found that continuous smoking abstinence at 3, 6 and 12 months was positively associated with 'not using drugs, lower psychological distress, good mental health scores and better physical health' (Wand et al. 2020 p.1). However, recorded cessation rates among PiC, in prisons which permit smoking, tend to be relatively low (Baybutt et al. 2014; Valera et al. 2019). The smoking norms and attitudes discussed above can be a barrier to PiC making quit attempts in prison. Some PiC may give greater weight to perceived psychological and practical benefits of smoking in prison than to associated risks (Baybutt et al. 2014; Sweeting and Hunt 2015; Taylor et al. 2012). Contextual factors (e.g. the high visibility of smoking among

peers, prison regimes, and heightened stress or negative mood during imprisonment) can contribute to 'failures' among PiC who do try to quit smoking (Baybutt et al. 2014; MacDonald et al. 2010; Richmond et al. 2009; Taylor et al. 2012). Other barriers to smoking cessation in prison relate to the absence or partial provision of smoking cessation interventions in some prison systems (Baybutt et al. 2014; Butler et al. 2007; de Andrade and Kinner 2016; McNeill et al. 2012) and the many challenges faced in delivering healthcare in prison settings e.g. staffing, waiting lists, prison environment and logistical issues (MacDonald et al. 2010; Royal College of Nursing Scotland 2016; Sweeting and Hunt 2015).

1.1.5 Measures to reduce tobacco harms among people in custody and prison staff

Having described the adverse health effects of a high smoking prevalence among PiC and the role of smoking in prison culture, this section now outlines a key measure which has been introduced in some jurisdictions internationally to reduce tobacco harms: smokefree prison policies. For context, the section begins with an overview of the WHO Framework Convention on Tobacco Control, a policy that aims to reduce the global burden of tobacco.

Context: WHO Framework Convention on Tobacco Control

The WHO Framework Convention on Tobacco Control (FCTC) came into force in 2005 to 'protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco' (WHO 2018, p.2). The FCTC and its guidelines place general obligations on countries to develop and implement comprehensive tobacco control strategies and legislation, and establishes measures to reduce demand for and supply of tobacco (WHO 2018). The WHO have also developed the six MPOWER measures (WHO 2008) to support countries to implement effective tobacco control policies and interventions aligned with the articles of the FCTC. A 2018 review of the impact of the FCTC over the first decade after it was implemented concluded it 'has played an important role in driving progress in the implementation of tobacco control policies' (Chung-Hall et al. 2019, p.123) and that 'these implementations have resulted in measurable impacts on tobacco consumption, prevalence and other outcomes' (Chung-Hall et al. 2019,

p.119). However, the authors also noted that implementation varies markedly *across* countries and *between* FCTC articles. These findings confirm the importance of continued investment in tobacco control at both national and international levels.

Concern has also been expressed about variation in implementation of FCTC *within* countries, despite the Convention affirming ‘the right of all people to the highest standard of health’ (WHO 2018, p.1). Prison is one setting which has rarely been (sufficiently) included in public health policy, including national tobacco control strategies (Baybutt et al. 2014). Several factors may explain this including justice services being historically responsible for prison health, challenges of delivering health services and interventions in settings where safety and security are key concerns, insufficient resources and leadership, staffing issues and specific healthcare issues (e.g. addiction to illegal drugs and poor mental health) receiving a higher priority in prison than tobacco use (Baybutt et al. 2014; MacDonald et al. 2010; Royal College of Nursing Scotland 2016). The political, social, economic and cultural challenges in operationalising health promotion, as opposed to a narrow focus on the prevention or treatment of particular diseases, in prison have also been noted (De Viggiani 2007; Woodall 2016), and are also likely to have been an obstacle to greater progress in addressing the burden of tobacco on those living and working in prisons. As noted, the (partial) exemption of prisons from national tobacco control strategies in countries such as Scotland and England led to a situation where prison staff were one of only a few employee groups who were (legally) exposed to SHS at work.

Smokefree prison policies: overview and impacts

Smokefree policies have been shown to be effective in protecting non-smokers from exposure to SHS and are amongst several measures contained in the FCTC. Specifically, Article 8 of the Convention calls for implementation of smokefree policies in ‘indoor workplaces, public transport, indoor public places and, as appropriate, other public places’ (WHO 2018, p.3).

Several jurisdictions have implemented smokefree policies in their prison systems, although the strength of policies varies internationally. Some jurisdictions have

implemented comprehensive (or total) smokefree policies (CSFP) prohibiting tobacco use in any indoor or outdoor areas for a combination of health, legal and practical reasons (e.g. to lower fire risks) (Sweeting and Hunt 2015). Others have opted for partial smokefree policies (PSFP) that restrict tobacco use to specific indoor/outdoor areas perhaps because of the perceived ethical and practical complexities of prohibiting smoking in settings which are homes as well as workplaces (Butler et al. 2007; Ritter 2014; Ritter et al. 2011). Indeed, this was part of the rationale for the initial exemption of prisons in Scotland from national smokefree legislation introduced in 2006. However, legal cases that challenged the exemption of prisons from smokefree policies also included arguments that PiC should not be forced to be exposed to SHS in his/her 'home' (Bowcott and Travis 2017). Debates about the ethics of implementation of smokefree policies in prisons perhaps reflect wider discussions about the consequences of viewing 'public' and 'private' spaces as entirely separate 'spheres', including potentially masking harms that occur within 'private' spaces, and about how best to balance personal freedom vs. protection from harm, including in 'private' spaces (Radacic 2007). In some jurisdictions, rules on smoking for PiC may be different to those for prison staff. The following section provides an overview of the literature on CSFPs, as others have noted (Sweeting and Hunt 2015) some important studies do not differentiate between prisons with complete and partial smokefree policies when reporting results. Hence, where relevant the general term 'smokefree policies' (SFPs) will be used to refer to prisons with either a partial or comprehensive smokefree policy for PiC.

The first documented CSFPs were in the US in the 1990s. By 2007, 60% of US correctional departments had CSFPs (Kauffman et al. 2008). In Canada, CSFPs were implemented in federal prisons in 2008; provincial prisons did not all become smokefree until 2014 (Collier 2013). In 2011, New Zealand became the first country to implement CSFPs in all prisons simultaneously. In Australia, the Northern Territory was the first to implement CFSPs (in 2013), and prisons have also become totally smokefree in Queensland, Tasmania, Victoria and New South Wales (Butler and Yap 2015) and South Australia (Wingard 2020). The first jurisdiction in Europe to implement CSFPs was the Isle of Man in 2008 (ASH 2016). CSFPs were implemented in English and Welsh (closed) prisons over several phases from January 2016 until July 2018 (ASH 2018). As noted above, all (open and closed)

prisons in Scotland have been officially smokefree since 30th November 2018 (Scottish Prison Service 2017a). In 2018, the Northern Ireland Prison Service (NIPS) announced plans to introduce CSFPs from September 2020 (Prison Service Northern Ireland 2018). A review cites several reasons why CSFPs have been implemented in prisons internationally, including: to improve the health of staff and PiC; to make it easier for PiC to stop smoking; concerns about litigation by non-smokers; and to lower fire risks, maintenance costs and prison health care costs (Sweeting and Hunt 2015).

Despite the growth in CSFPs internationally, until recently few (if any) CSFPs had been comprehensively evaluated using rigorous, multi-methods designs that span the pre-post implementation period, and explore both the process and outcomes of policy change. Evidence related to CSFPs in specific jurisdictions has tended to be relatively limited in scope (research questions), and some studies of CSFPs have notable methodological shortcomings e.g. in respect of sample coverage/representativeness. For instance, published evidence on New Zealand's CSFPs includes an air quality measurement study in one prison (Thornley et al. 2013) and a (non-systematic) review of limited published information on policy implementation and some outcomes of interest (Collinson et al. 2012). Searches undertaken for this thesis have identified no qualitative studies exploring the smokefree prison policy from PiC or prison staff in New Zealand. Similarly, published evidence on the implementation of CSFPs in England and Wales has to date included an air quality monitoring study in four prisons (Jayes et al. 2019) and qualitative studies with prison staff and/or PiC in a small number of prisons prior to (but not after) implementation of the change in smoking rules (Dugdale et al. 2019; Woodall and Tattersfield 2017).

As noted, the impact of CSFPs on air quality has been examined in several jurisdictions using natural experimental designs that measure markers of SHS (e.g. concentrations of particulate matter, airborne nicotine) before and after a major change in prison smoking policy. Such studies in New Zealand (Thornley et al. 2013), England (Jayes et al. 2019) and notably Scotland, where the most comprehensive study was undertaken as part of TIPs (Demou et al. 2020; Semple et al. 2019), have all reported a marked improvement in air quality following

implementation of CSFPs. Overall reductions in median concentrations of particulate matter in CSFPs, reported for three studies, ranged from 57%-81% (Jayes et al. 2019; Semple et al. 2019; Thornley et al. 2013). TIPs is one of only a few studies (Hammond and Emmons 2005; Ritter and Elger 2014) with longer term (6 months +) follow-up and shows a reduction of more than 91% six months post-implementation in comparison with measures made before smokefree policy was announced in Scotland (Demou et al. 2020). Another notable difference between TIPs and previous studies is that data were collected 24 hours per day for nearly a week to capture variation in SHS exposures over the day and the week (Semple et al. 2019). In contrast, an English study collected data during mornings and afternoons on particular sampling days only (Jayes et al. 2019).

Thus, strong evidence is accumulating that total smoking restrictions are effective in substantially reducing SHS exposures in prison settings, even if some PiC may violate smoking restrictions (Kennedy et al. 2015). In contrast, previous research has established that PSFPs may not provide prison staff and PiC with adequate protection from SHS exposures (Semple et al. 2017), although PSFPs may improve air quality to some extent (Ritter et al. 2012). Contrary to expectations, two studies, one carried out in six prisons in North Carolina, USA (Proescholdbell et al. 2008) and another carried out in a prison in Australia (He et al. 2016) found that markers of SHS *increased* in some sites after implementation of rules that prohibited tobacco use indoors. The authors suggest that the findings were due to poor enforcement (Proescholdbell et al. 2008) or poor adherence to smoking restrictions (He et al. 2016). Findings may also have been affected if air quality samples did not capture the variability of SHS exposures over the course of the day and the week, leading to pre-implementation samples that were not representative.

A few studies have shown a positive effect of reduced SHS exposures and reduced active smoking on the mortality of PiC. In a US study (Binswanger et al. 2014) smoking-related mortality was found to be lower among PiC in prisons with CSFPs compared to prisons with either PSFPs or no SFPs. The study also found that implementation of SFPs (whether partial or comprehensive) was associated with a reduction in smoking-related deaths in the prison population, and that smokefree policies that were in place for longer than 9 years were associated with fewer

cancer-related deaths (Binswanger et al. 2014). Another US study, similarly reported reductions in mortality among PiC with mental health problems following implementation of measures in prison to reduce and subsequently (totally) prohibit smoking (Dickert et al. 2015). Other studies have examined changes in smoking-related morbidity following implementation of CSFPs. One study, also conducted in the US, found that smokers reported fewer smoking-related symptoms following enforced smoking abstinence in prison, with the greatest changes reported in two symptoms: 'cough first thing in the morning' and 'phlegm production' (Clarke et al. 2015). In another US study, 67% of participants reported that their health status had improved following implementation of CSFPs (Thibodeau et al. 2010). Taken together, these studies confirm the potential health benefits of CSFPs for PiC.

Searches undertaken for this thesis only identified one study that examined the effect of CSFPs on the health of prison staff, as measured by staff sickness absence. The results of that US study were mixed: while rates of staff sickness absence did not change pre and post CSFP implementation, absence rates were higher in the control group ('patrol officers', whose roles mean they are exposed to minimal SHS exposures at work) compared to frontline staff after the change in smoking rules (Leone and Kinkade 1994). The authors suggest that the lack of conclusive evidence on the positive effects of the CSFP on prison staff might be due to the study's short follow-up period (Leone and Kinkade 1994).

Several studies have examined issues relating to whether prisons with CSFPs deliver long-term health (and other) benefits by supporting individuals to continue with smoking abstinence following release. A 2018 systematic review of smoking behaviour among people released from CSFPs found evidence of 'a high and rapid rate of smoking relapse among people released from smokefree prison' (Puljevic and Segan 2018, p.6). The review reported that more than 60% of participants returned to smoking following release from a smokefree prison in all five US studies (that had quantitatively examined this outcome) (Puljevic and Segan 2018), with one study reporting that ~74% of those who relapsed did so within one day of release (Frank et al. 2017). However, it is important to note that the review authors judged only one (Clarke et al. 2013) of the five studies measuring post-prison relapse rates to be methodologically strong (Puljevic and Segan 2018). Similar findings were reported in

a subsequent study of relapse to smoking following release from a CSFP in Queensland, Australia. In that study, 72% of participants relapsed within one day of release and 94% relapsed within 2 months (Puljevic et al. 2018). A qualitative follow up study (Puljevic et al. 2019), involving a sub-sample of participants, identified several reasons why participants had failed or succeeded (for a period of time) in remaining smoking abstinent post-release. Barriers included associations of smoking with freedom and defiance following release from CSFP, a high smoking prevalence in home and/or social environments that they returned to, conditioning and beliefs that smoking helps with mood management, and use of tobacco as an alternative to illicit drugs. By contrast, facilitators included a motivation to quit smoking, experiencing health and financial benefits of smoking abstinence, and positive social support.

Promisingly, evidence from the first randomised trial of an intervention to prevent relapse to smoking post-release from a CSFP suggests ways in which health and other benefits of SFPs can be maximised. In logistic regression analysis, participants who had received the 'WISE' behavioural support intervention prior to and following release from a US prison, were 6.6 times more likely to be smoking abstinent 3 weeks post-release compared to the control group (Clarke et al. 2013). Recently published results from a trial (Jin et al. 2018) of a behavioural intervention to reduce rates of smoking relapse among people recently released from smokefree prisons in the Northern Territory, Australia are less promising. In that study, no significant difference in smoking abstinence rates were found between participants in the intervention and control group, although those in the intervention group on average smoked one less cigarette daily than those in the control group within the three months after release (Jin et al. 2020). Two further trials of interventions to prevent relapse to smoking post-release from CSFPs are underway in Australia in Victoria ('SQuARe') (Young et al. 2019), and Queensland (Puljevic et al. 2017). Evidence suggests that such interventions may be more likely to be successful if they work to increase pre-release intention to remain smoking abstinence post-release; treat tobacco use and other substance use issues concurrently; and harness positive social support among peers and/or families of people released from CSFPs (Puljevic et al. 2019; Puljevic et al. 2018; Puljevic and Segan 2018).

There is also a growing body of literature on the potential unintended consequences of SFPs. Despite concerns in the media (Robinson et al. 2018) and among prison staff (Leone and Kinkade 1994), there is good evidence that SFPs can be implemented without causing violence or major disruption in prisons (Kennedy et al. 2015; Kipping et al. 2006; Sweeting and Hunt 2015). None of the responding US departments of corrections reported 'violence or riots associated with their transition to a stricter tobacco policy' when responding to a survey about changes in prison tobacco policies over time (Kauffman et al. 2008). Similar experiences have been reported in other jurisdictions including those that have implemented CSFPs specifically e.g. Northern Territory, Australia (Hefler et al. 2016) and Scotland (Hunt et al. in press). However, in a few jurisdictions the implementation of SFPs has been associated with trouble of various kinds in prisons. This includes reports of riots in prisons in Melbourne (Butler and Yap 2015) and Queensland (Butler et al. 2007), Australia and an increase in 'non injury' assaults among PiC to PiC and among PiC to staff in Nevada, USA (Leone and Kinkade 1994). While implementation of CSFPs in New Zealand is considered an overall success, one prison in the country was reported to experience an increase in violence among PiC in the month after the transition to total smokefree rules (Collinson et al. 2012). Tension between staff and PiC (alongside the emergence of a tobacco black market) was suggested to be one factor contributing to the decision in Vermont, USA to change from CSFPs to PSFPs where staff and PiC could smoke outdoors (Carpenter et al. 2001).

Studies show that 'simply implementing a total smoking ban in corrections institutions will not necessarily stop inmates from smoking' (Gautam et al. 2011, p.101). In a small interview study of PiC in a CSFP in Wisconsin, USA, 20% of participants reported smoking illicitly since total restrictions on smoking in prison had been enacted (Thibodeau et al. 2010). An even higher rate of non-compliance with CSFPs was reported by another US study in a different state (Indiana) which reported that 76% of participants had smoked post-implementation (Cropsey and Kristeller 2005). The study found that those who continued smoking despite the restrictions were more nicotine dependent and reported greater withdrawal symptoms than those who had stopped smoking (Cropsey and Kristeller 2005).

Relatedly, studies consistently report on the growth of illicit tobacco markets among PiC after implementation of CSFPs (Chang et al. 2010; Foley et al. 2010; Kauffman et al. 2008; Kennedy et al. 2015; Lankenau 2001; Thibodeau et al. 2012). A study of 16 US jails and prisons found that SFPs 'transform largely benign cigarette 'grey markets' ...into more problematic black markets, where cigarettes are a high-priced commodity' (Lankenau 2001, p.142). Tobacco black markets also emerged in the initial period following implementation of CSFPs in New Zealand, although problems reportedly subsided after 'enhanced' measures were put in place to prevent and disrupt contraband tobacco entering prisons (Collinson et al. 2012). Such black markets may result in poor compliance with CSFPs, both placing PiC at risk of sanctions for rules violations and debt, (Lankenau 2001) and undermining the health benefits of CSFPs for PiC and prison staff. The scale of tobacco black markets is shown to vary within and across jurisdictions with CSFPs according to factors such as the security level of a prison (Lankenau 2001), the extent to which prison staff consistently and effectively enforce smoking restrictions (Kennedy et al. 2015) and the availability of smoking cessation products and other support (Lankenau 2001). Another important factor influencing the development of tobacco black markets in CSFPs is demand for contraband tobacco among PiC. A qualitative study conducted within one year of implementation of CSFP in prisons in Wisconsin, USA found that PiC reported several drivers for using contraband tobacco. These included: associations of smoking with 'defiance or rebellion', low motivation to quit smoking, and boredom (Thibodeau et al. 2012, pp.6-7). In contrast, reasons given by PiC for opting not to smoke contraband tobacco centred on cost, fear of sanctions, negative perceptions of use of contraband tobacco, making health behaviour changes in prisons that were regarded as antithetical to smoking, and motivations to abstain from smoking longer term (Thibodeau et al. 2012).

Another unintended consequence of CSFPs reported in the literature is the misuse of nicotine replacement therapy (NRT), including stockpiling, trading and stealing of NRT by some PiC (Hefler et al. 2016). Particular concerns have been raised about the potential health hazards associated with the reportedly widespread practice of PiC 'smoking' nicotine patches or nicotine lozenges mixed with tea leaves in the absence of tobacco in some jurisdictions (known as 'teabacco') (Hefler et al. 2016; Mitchell et al. 2019; Morrissey et al. 2016; Puljević et al. 2018). Such concerns are

supported by a laboratory study which found that 'high concentrations of formaldehyde, acetaldehyde, acrolein, toluene, xylene and heavy metal' are released when nicotine patches are smoked (Morrissey et al. 2016, p.206). Another study analysing the constituents of smoked nicotine lozenges found evidence of the presence of potentially toxic compounds in 'teabacco' smoke. However, the authors concluded that smoking nicotine lozenges posed less risk than smoking nicotine patches, or smoking tobacco (Mitchell et al. 2019).

Little is known about other potential unintended consequences of CSFPs, including changes in body weight, among PiC who are mandated to abstain from smoking. One recent Canadian study found that PiC who smoked prior to entering a CSFP gained more than twice as much weight in prison as non-smokers, and that obesity rates in the sample increased by 68% (Johnson et al. 2019). Another Canadian study examining changes in gambling practices in prisons before and after implementation of CSFPs found fewer PiC were reporting participating in gambling post smokefree prison rules. However, there were indications that the 'seriousness' of gambling may have increased in the smokefree period e.g. as shown in the use of 'money wagers' instead of using tobacco as a gambling currency. There was a suggestion from an interview participant that gambling activity had replaced tobacco black markets as the primary way in which some PiC (illicitly) made an income in prison (Turner et al. 2013).

Levels of support for smokefree prison policies among prison staff and PiC

Having examined the positive and negative consequences of CSFPs, the chapter now turns to exploring levels of support for SFPs among PiC and prison staff. As other authors have noted, there is 'scarcity' of literature on this topic, despite SFPs directly affecting the health of both groups, as well as the behaviours of smokers and the work roles of prison staff (Dugdale et al. 2019). The very few previous quantitative studies of prison staff opinions of smoking restrictions in prisons (permitting the use of tobacco) suggest that many staff favour stricter smoking rules for PiC. A study of prison staff in Switzerland found that more staff believed that smoking restrictions for PiC were 'adequate' after implementation of a stricter PSFP; 81% of staff reported that smoking rules for PiC were 'adequate' post-implementation vs. 57% pre-implementation of the new smoking rules (Etter et al.

2012). Similarly, a survey of prison staff in Vermont, USA, conducted at a time where both staff and PiC were permitted to smoke outdoors only, found that staff were more supportive of increased 'smoking restrictions' for PiC than for themselves, with over 60% of staff favouring more restrictive smoking policies for PiC. Thus, it has been suggested that addressing tobacco use among staff may be even more challenging than among PiC (Ritter et al. 2011). The study found that support for stricter smoking rules in prisons varied by staff smoking status. Non-smokers among the staff were more likely than smokers to favour more restrictive SFPs for PiC: 56% of never smokers but only 15% of current smokers supported transitioning to a complete indoor/outdoor 'ban' on PiC smoking (Carpenter et al. 2001). However, it is noteworthy that staff were overall less supportive of CSFPs for PiC than for PSFPs (Carpenter et al. 2001). A qualitative focus group study of prison staff in one English prison with PSFPs reported that prison staff supported the current rules and perceived they were 'fair' (Woodall and Tattersfield 2017). One reason for this may be that some staff do not regard tobacco to be as 'immoral or dangerous' (Lankenau 2001, p.9) as other substances in prisons, such as illegal drugs, either because staff themselves are current or former smokers or due to tobacco being legal to use in wider society. More limited support for CSFPs among some prison staff may also reflect the strong place of tobacco in prison culture and perceived psychological benefits for PiC and perceived benefits in supporting the smooth running of prisons (Woodall and Tattersfield 2017). In this context, the prospect of completely removing tobacco from prisons might be seen by prison staff as both challenging and risky (see below for details). On the other hand, very strong support for CSFPs, to protect the health of non-smokers and address inequalities in occupational SHS exposures, has been expressed by individual staff and employee trade unions in some jurisdictions, such as Scotland (Scottish Prison Service 2016). This support in Scotland likely reflects the fact that prison staff were, at that time, one of only a few employee groups who continued to be legally exposed to SHS, which is a known carcinogen, in an indoor workplace.

The few previous studies of PiC's opinions of smoking restrictions in prison suggest that many are potentially supportive of PSFPs. In a Swiss study, most (64%) PiC believed that the PSFP limiting smoking to rooms (cells) and outdoors in the prison was 'adequate', although it is important to note that 36% believed the smoking rules

were 'too strict' (Etter et al. 2012). Acceptance of PSFPs was also found in the qualitative strand of the same study (Ritter and Elger 2014) and in a separate qualitative study of PiC (and staff) in England who believed that the PSFP was 'reasonable' both for smokers and non-smokers (Woodall and Tattersfield 2017, p.3). Studies conducted post implementation of CSFPs suggest that some PiC may have positive or neutral opinions of total restrictions on smoking in prisons, (Thibodeau et al. 2012) for instance because of a motivation to quit smoking long-term and/ or beliefs that substantially reducing smoking in prisons has been beneficial (Hefler et al. 2016). Two qualitative studies conducted in England prior to the transition to CSFPs found generally negative opinions of CSFPs among PiC. Opposition to CSFPs in these studies partly centred on beliefs that CSFPs eroded the limited choices of PiC and were a further punishment (Dugdale et al. 2019; Woodall and Tattersfield 2017). In one of the studies, these beliefs were reportedly expressed in a context where PiC were generally unaware of the date when CSFPs would be introduced and were unsure of what support would be available for smokers during the transition period (Dugdale et al. 2019). Concerns about the legitimacy and consequences of mandating smoking abstinence among PiC have similarly been raised by some prison staff (Woodall and Tattersfield 2017) and commentators (Butler and Yap 2015; Eldridge and Cropsey 2009; Ritter 2014; Ritter et al. 2011), while others have advocated for CSFPs given that the harms of SHS exposures are well established and PSFPs have proven ineffective in adequately protecting non-smokers from harm (Jayes et al. 2016; McCaffrey et al. 2012; Semple et al. 2017). To date, evidence is mixed with respect to whether opinions of CSFPs vary between smokers and non-smokers among PiC (Dugdale et al. 2019; Hefler et al. 2016). Evidence suggests that support for more restrictive SFPs for PiC is lower among PiC than prison staff (Etter et al. 2012).

Studies have found that both staff and PiC express moderate-serious concerns about the anticipated challenges and consequences of implementing SFPs. In a survey of 'correctional administrators' from 50 US states, 52% of participants reported that 'a law that restricts or bans smoking' in prisons would be 'somewhat difficult' to implement (Vaughn and del Carmen 1993). In addition, 72% reported SFPs would make 'their job harder' and it was commonly believed that SFPs would 'increase chances for disturbance', 'increase tension among staff', 'increase tension

between inmates staff', 'increase tensions among inmates' and 'increase contraband' in prisons (Vaughn and del Carmen 1993). In another US study, current smokers among staff were more likely than non-smokers to express beliefs that increased smoking restrictions would be hard to implement, have negative consequences and that problems associated with SFPs would endure (Carpenter et al. 2001). In two qualitative studies (Dugdale et al. 2019; Woodall and Tattersfield 2017) carried out with staff and/ or PiC in England, concerns were similarly raised about the potential for CSFPs to result in unintended negative consequences such as tobacco black markets, violence, and negative psychological effects on PiC who are forced to abstain from smoking.

Smokefree prison policies: success factors

Several factors are reported in the literature that may influence the degree to which CSFPs are complied with, potential benefits for PiC and staff are realised, and negative unintended consequences are minimised, although few studies prior to TIPs have examined these factors in detail, drawing on perspectives of staff and PiC. First, the benefits of carefully planning for the transition to CSFPs is evidenced by experiences in several jurisdictions (Collinson et al. 2012; Hammond and Emmons 2005; Hefler et al. 2016). A lead in time of around 12 months or greater is reported to have been important for the relatively successful introduction of CSFPs in New Zealand and the Northern Territory, Australia, enabling the impending change in smoking restrictions to be well publicised and providing smokers with ample time to reduce or cease smoking before abstinence is enforced (Collinson et al. 2012; Hefler et al. 2016).

Second, ongoing communication campaigns are reported to have been vital in raising awareness about the impending implementation of CSFPs and providing information on the details of the new policy and the support measures available for smokers (Collinson et al. 2012; Foley et al. 2010; Hefler et al. 2016). In the Northern Territory, Australia multiple modes of communication were used successfully to increase awareness of CSFPs such as 'posters, banners, announcements, daily countdowns to the start of the ban, prisons visits (e.g. a concert with visiting officials to promote the benefits of being smokefree) and a media campaign' (Hefler et al. 2016, p.2).

Third, there is consensus in the literature about the need to ensure that evidence-based smoking abstinence/cessation treatments and interventions are provided for PiC (and prison staff if they too are affected by changes in smoking restrictions), alongside CSFPs, particularly at the point when smokers transition into prison, prepare for release and return to the wider community (de Andrade and Kinner 2016; Puljevic and Segan 2018). Consistent with studies in the general population (Stead et al. 2016), evidence suggests that measures to support smoking abstinence/cessation for PiC may be more successful if they are multi-component and are provided at no cost to PiC (de Andrade and Kinner 2016; Valera et al. 2020). In addition, interventions for PiC are likely to benefit from some adaptations to take account of the distinct opportunities and constraints of the prison setting for smoking behaviour change (MacAskill et al. 2008; MacDonald et al. 2010). Broadly consistent with these principles, countries such as New Zealand and Australia made both pharmacological (NRT) and behavioural support (telephone and/ or face-to-face support) available to PiC as part of the transition to CSFPs (Collinson et al. 2012). In New Zealand, activities (e.g. additional sports events and exercise activities) to support PiC to reduce or stop smoking were implemented prior to CSFPs (Collinson et al. 2012) in response to initial concerns about the adequacy of provision (Gautam et al. 2011). Unfortunately, such measures may not be provided on a long-term basis in CSFPs if they are provided at all. A US study found that few US departments of corrections with CSFPs reported continuing with smoking cessation programmes after the initial transition period (Kauffman et al. 2008). Commentators have suggested that the absence or withdrawal of smoking cessation programmes in CSFPs is inconsistent with understanding of tobacco dependence as a chronic condition and is a missed opportunity to improve the long-term health of a disadvantaged group (Kauffman et al. 2008) (Eldridge and Cropsey 2009), as evidenced by high rates of relapse to smoking among people released from CSFPs (Puljevic and Segan 2018). A review of smoking cessation interventions in prisons highlighted the paucity of studies on CSFPs that provide universal, free and comprehensive smoking abstinence/cessation support and suggested the need for future studies to address evidence gaps (de Andrade and Kinner 2016).

Relatedly, some commentators have also advocated for tobacco harm reduction measures to accompany CSFPs, such as e-cigarettes. A 2018 review on the *'Public*

Health Consequences of E-cigarettes’ carried out by the National Academies of Sciences, Engineering and Medicine reported that current evidence suggests that while e-cigarettes are unlikely to be risk free, they ‘pose less risk to an individual than combustible tobacco cigarettes’ and ‘might increase adult cessation of combustible tobacco cigarettes’ (National Academies of Sciences Engineering and Medicine 2018, p.11). There is much less agreement in the scientific evidence about the net effect of e-cigarettes at a population level. In particular, debate continues about the effect of e-cigarettes on rates of initiation and cessation of tobacco smoking (National Academies of Sciences Engineering and Medicine 2018), and about the implications of continued use of commercial, habit forming products (some of which are manufactured by tobacco companies) in society (Cox and Jakes 2017; Thomson et al. 2020).

Similar issues are reflected in the sparse literature that exists on e-cigarette use (vaping) in prisons (Curry et al. 2014; Young-Wolff et al. 2015). Commentators have also raised issues with respect to e-cigarettes that are distinct to prisons, such as the potential for high concentrations of e-cigarette vapour exposures in ‘confined and crowded’ prisons (Young-Wolff et al. 2015, p.3), risks of misuse of e-cigarettes among PiC to hide contraband, take illegal drugs or create weapons, and the potential for e-cigarette black markets to develop in prisons (Curry et al. 2014; Young-Wolff et al. 2015). Despite the importance of understanding the benefits and risks of e-cigarettes in prisons, no previous studies have investigated e-cigarette use among PiC or examined the implications for smoking behaviour during imprisonment or following release, including from CSFPs.

Finally, support or acceptance of SFPs among prison staff and PiC is shown in the literature to be critical to success, particularly as measured by compliance (Cropsey and Kristeller 2005; Kennedy et al. 2015). A study that included a CSFP in North Carolina, USA reported that not only did prison staff not support the total smoking restrictions, but they were perceived to potentially be ‘instrumental in creating and sustaining’ the tobacco black market that had emerged post implementation (Foley et al. 2010 p.101). Similarly, PiC were reported to be engaging with the tobacco black market, thus violating the smoking restrictions, partly as an act of defiance (Foley et al. 2010). As indicated above, such lack of support for CSFPs among staff

and PiC may be driven by concerns that CSFPs unfairly restrict individual autonomy, as well as fears about the challenges and consequences of prohibiting tobacco use in prisons and/ or personal difficulties abstaining from smoking (Woodall and Tattersfield 2017). Jurisdictions such as New Zealand that report greater success in fostering acceptance of CSFPs, and fewer problems with non-compliance, attribute this to the measures described above. These include for example, good planning, preparation and support for CSFPs and contributions from 'Workplace Champions' among staff who had been trained in smoking cessation and so were able to support colleagues and PiC in their quit attempts (Collinson et al. 2012).

1.1.6 Evidence gaps

As shown in the previous sections, evidence on smokefree prison policies is incomplete, particularly prior to TIPs. Previous studies have tended not to comprehensively examine the implementation of smokefree prison policies and many studies have important sampling limitations e.g. in terms of number of prisons included in research and/ or samples of PiC and/ or prison staff. One of the areas identified by the TIPs researchers in their application to NIHR as particularly requiring further work was qualitative research to extend understandings of smokefree rules from the perspectives of people living and working in prisons. Such evidence is critical in being able to identify potential enablers and barriers to development and implementation of smokefree prison policies and in fully considering the successes, challenges, and positive and negative consequences of prohibiting smoking in prisons. The publications included in this thesis aim to contribute towards addressing these knowledge gaps, to strengthen the evidence base and to support policy makers and prison services internationally.

1.2 Policy and research context

Smoking on prison premises in Scotland has been prohibited for all prison staff and visitors since March 2008. Rules have been in place in Scotland in respect of smoking in prisons among PiC since the 1950s and these have been strengthened over time in line with increasing evidence of tobacco harms and changing regulation in the community (Scottish Prison Service 2016). Prior to the implementation of

smokefree rules from 30th November 2018, prison smoking rules for PiC in Scotland had last undergone major change in 2006 to restrict smoking to PiC's rooms (cells) or during outdoor recreation; smoking outside these permitted areas was made a disciplinary offence under prison rules at that time. These 2006 changes to smoking rules for PiC were prompted by the introduction, on 26 March 2006, of smokefree legislation in Scotland that prohibited smoking in virtually all indoor public places such as workplaces, bars and restaurants. The decision to exempt prisons from national smokefree policy at that time created inequality between SPS staff and other occupational groups with respect to SHS exposures, and in the absence of smokefree policy very high rates (~72% in 2015 (Scottish Prison Service 2015)) of smoking among PiC in Scotland persisted, which caused concerns that they may lead to substantial health harms.

Against this backdrop, the Scottish Government made a commitment in its 2013 '*National Tobacco Control strategy*' to work with SPS and National Health Service (NHS) to 'have plans in place by 2015 that set out how indoor smokefree prison facilities will be delivered' (Scottish Government 2016, p.26), precipitating discussions about when and how changes to prison smoking rules could be introduced. Specifically, a National Tobacco Strategy Workstream was established by SPS to develop an action plan for changes to prison smoking rules for PiC. After assessing the benefits and risks of both partial (indoor) and comprehensive (indoor and outdoor) smokefree policies in prisons, the National Tobacco Strategy Workstream concluded that 'a comprehensive smoke-free policy is considered the most effective option to address the negative health impacts associated with exposure to SHS to those in custody and those working in or visiting prisons' (Scottish Prison Service 2016, p.2) and an action plan was submitted to Scottish Government ministers in early 2016. With respect to implementation timescales, the Trade Union Side advocated for CSFPs by the end of 2018, while others recommended an implementation timescale of up to 5 years from the point that a decision on smokefree policy was taken (Scottish Prison Service 2016). Another key development in respect of the history of smokefree prison rules in Scotland was the publication by NHS Health Scotland in June 2015 of a '*Specification for national prison smoking cessation in Scotland*' to help reduce tobacco-related harm in prison and support implementation of greater smoking restrictions for PiC in the future

(NHS Health Scotland 2015). A core aim of the specification was to ensure that all PiC 'are promptly offered and receive a consistent and equitable smoking cessation service, irrespective of location across the prison system and Health Board area' (NHS Health Scotland 2015, p.5). One of the key service delivery recommendations was that prison smoking cessation services should provide (free) combined behavioural support and pharmacotherapy to PiC who wish to quit smoking (NHS Health Scotland 2015).

Researchers who were actively supporting the work of the National Tobacco Strategy Workstream (e.g. by participating in meetings and reviewing the literature (Sweeting and Hunt 2015)) also worked with stakeholders to develop plans for a comprehensive multi-methods, multi-phased programme of research (known as the Tobacco in Prisons Study, TIPs) to evaluate any future changes to prison smoking rules in Scotland for PiC. Work on this study (Hunt et al. 2019), funded by the National Institute for Health Research (Public Health Research Programme, project number 15/55/44), began from September 2016 when, as noted, the exact timing and form of changes to smoking rules for PiC were yet to be decided. When the study was underway the Scottish Government and SPS announced, on the 17th July 2017, plans to implement comprehensive smokefree policies from November 2018 (Scottish Prison Service 2017a), partly in response to evidence on SHS exposures in prisons (Semple et al. 2017) collected during the first phase of TIPs, leading to revisions to the study protocol (Hunt et al. 2019). In the 16 months between the announcement of plans to prohibit smoking and the 30th November 2018, comprehensive preparations were carried out at national and local level by SPS, NHS and other partners. This included legislative changes to enable e-cigarettes to be sold in the prison canteen (shop) and used by PiC in designated spaces (e.g. rooms [cells] and outdoor areas in some prisons) (Scottish Prison Service 2017b). In anticipation of these changes, some members of the TIPs team successfully applied for funding from Cancer Research UK (project number: C45874/A27016) to explore in detail use of e-cigarettes in Scottish prisons in the periods before and after implementation of smokefree prison policies (See 1.3 for overview of methods used in the TIPs and E-cigarettes research programmes).

1.3 Aims of the thesis and overview of publications

The overall aim of this thesis is to bring together, and critically appraise, five linked studies (see *Table 1*) to understand smokefree prison policy from the perspectives of prison staff and PiC. The thesis has two research objectives:

- To understand perceptions and experiences of prison staff and PiC on smokefree prison policy before and after implementation of smokefree prison policy.
- To understand perceptions and experiences of prison staff and PiC on e-cigarettes for PiC before and after implementation of smokefree prison policy.

The thesis seeks to address six research questions:

RQ1: What views on smokefree prison policies are held among prison staff? What are the reasons for support or opposition to smokefree prison policy among prison staff?

RQ2: What are prison staff's perceptions and experiences of e-cigarettes for PiC in smokefree prisons, including the perceived risks and benefits?

RQ3: What views on smokefree prison policies are held among PiC? What are the reasons for support or opposition to smokefree prison policy among PiC?

RQ4: What are PiC's perceptions and experiences of using e-cigarettes in smokefree prisons, including the perceived risks and benefits?

RQ5: What are the perceived positive/negative impacts of smokefree prison policy for prison staff, PiC and prison systems?

RQ6: What are the perceived facilitators, barriers and success factors for implementation of smokefree prison policy?

The studies reported in the publications included in this thesis were carried out at different stages during the process of developing, planning and introducing a smokefree prison policy in Scotland, to provide a rich account of and capture changes in opinions and experiences over time. Four of the studies were conducted as part of the broader TIPs research programme. As noted, TIPs is a three-phase, multi-method study of the preparation for and implementation of smokefree policy in all Scottish prisons from 30th November 2018. TIPs Phase 1 was conducted between September 2016 and July 2017, prior to a decision on whether and if so how

smoking rules for PiC in Scotland should be changed ('Pre-announcement Phase'); Phase 2 (August 2017-November 2018) was conducted while the prison system was preparing for policy implementation ('Preparatory Phase') and Phase 3 was conducted between December 2018 and May 2020 after prisons had become smokefree ('Post-implementation Phase'). The methods used in the TIPs study (see also *Figure 1*) were: in work-package 1, interviews with personnel from other jurisdictions with smokefree prisons; in work-package 2, measurement of second-hand smoke exposures (SHS) and analysis of routinely collected data on health and organisational outcomes of interest and cost effectiveness; in work-package 3, surveys of prison staff and interviews/focus groups with prison staff; in work-package 4, surveys of PiC and interviews with PiC; and in work-package 5, interviews with staff providers of smoking cessation services and interviews with PiC engaging with smoking cessation services. A final (sixth) work-package of TIPs fed back results on an ongoing basis to key stakeholders in Scottish prison and health services (Hunt et al. 2019) .

The final study included in this thesis reports data collected as part of a complementary study of the introduction of e-cigarettes for PiC in Scottish prisons ('E-cigarettes in Prisons' study). The first part of this study was conducted between September 2018 to November 2018, in anticipation of smokefree policy implementation and shortly after the introduction of (rechargeable) e-cigarettes for PiC in Scotland, while the second part of the study was carried out between December 2018 to October 2020, after new rules on smoking and e-cigarette use in prisons had been implemented. The methods used in the E-cigarettes study were interviews with PiC who had experience of using e-cigarettes in prison, interviews with prison staff, and secondary analysis of canteen (prison shop) data.

Specifically, **Publications 1** and **2** included in this thesis report findings of staff focus groups collected in TIPs Phase 1 (alongside findings of surveys of staff and PiC in **Publication 1**) while discussions were happening, particularly at national level, about whether and if so how smoking rules for PiC might change in the future. Several months after these data were collected SPS and Scottish Government announced plans for comprehensive smokefree policies to come into force in prisons from November 2018. **Publication 3** reports findings from interviews with PiC carried

out in the period in which preparations were being made to make the Scottish prison system smokefree. **Publication 4** reports findings of TIPs interviews with PiC and staff focus groups once smokefree policies had become established in Scottish prisons. **Publication 5** reports findings of interviews with e-cigarette users in Scottish prisons, carried out as part of the E-cigarettes study, when vaping behaviours had a chance to fully embed post-implementation of smokefree policy. Other related papers which I have co-authored during this time, but do not form part of this thesis, are listed at *Appendix 1*.

Figure 1 provides an overview of the TIPs and 'E-cigarettes in Prisons' programmes of research and shows which of the datasets from these studies are reported in the publications included in this thesis.

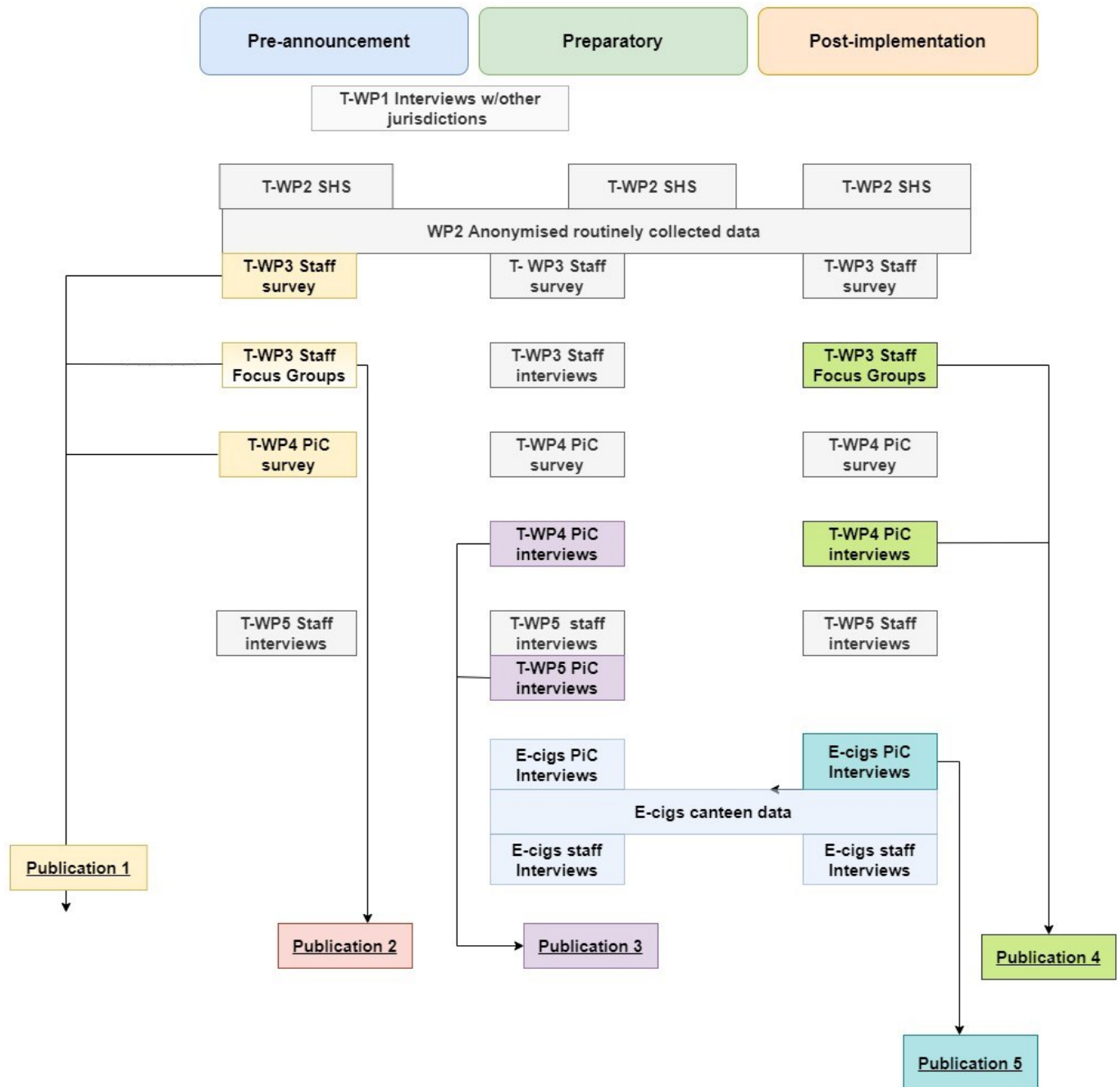


Figure 1: TIPs and 'E-cigarettes in Prisons' research programmes, by Phase

Table 1 provides descriptions and full references for the publications included in this thesis.

Table 1. Overview of included publications

Phase	Description of study	Publication no.	Reference
Pre-announcement	A focus group study of staff views on smokefree prison policies, supplemented by results of surveys of staff and PiC	1	Brown A , Sweeting H, Logan G, Demou E, and Hunt K. (2018) Prison staff and prisoner views on a prison smoking ban: evidence from the Tobacco in Prisons study. <i>Nicotine Tobacco Research</i> , 21(8), pp.1027-1035. Available: https://doi.org/10.1093/ntr/nty092
	A focus group study of staff views on potential benefits and risks of e-cigarettes in prisons	2	Brown A , Sweeting H, Semple S, Bauld L, Demou E, Logan G, and Hunt K. (2019) Views of prison staff in Scotland on the potential benefits and risks of e-cigarettes in smoke-free prisons: a qualitative focus group study. <i>BMJ Open</i> , 9(6), e027799. Available: http://dx.doi.org/10.1136/bmjopen-2018-027799
Preparatory phase	An interview study of perspectives on the forthcoming smokefree prison policy among PiC in Scotland	3	Brown A , Eadie D, Purves R, Mohan A, and Hunt, K. (2020) Perspectives on smokefree prison policy among people in custody in Scotland. <i>International Journal of Prisoner Health</i> , 16(4), pp. 389-402. Available: https://doi.org/10.1108/IJPH-12-2019-0065
Post-implementation	A staff focus group and PiC interview study on post-implementation perspectives in smokefree prison policy	4	Brown A , Mitchell D, and Hunt K ('in press'). Post-implementation perspectives on smokefree prison policy: a qualitative study with staff and people in custody. <i>European Journal of Public Health</i> .
	An interview study of e-cigarettes use among PiC in prisons with established smokefree policies	5	Brown A , O'Donnell R, Eadie D, Ford A, Mitchell D, Hackett A, Sweeting H, Bauld L, and Hunt K. (2020) E-cigarettes use in prisons with recently established smokefree policies: a qualitative interview study with people in custody in Scotland. <i>Nicotine and Tobacco Research</i> , ntaa271, Available: https://doi.org/10.1093/ntr/ntaa271

Table 2 shows my contribution to the five publications that comprise this thesis, using the CRediT -Contributor Roles Taxonomy. The taxonomy includes 14 domains that aim to represent the range of work that contributes to the production of research outputs. Appendix 2 provides more detailed author contribution statements for each publication. As noted, the individual studies formed part of a broader programme of research linked to an evaluation of the introduction of smokefree policies and e-cigarettes into the Scottish prison system. The studies associated with **Publications 1-4** were carried out as part of TIPs. Funding for TIPs was acquired in 2016 prior to the author of this thesis (AB) joining the study team in April 2017. However, AB contributed to revising the study protocol to take account of the decision to implement a comprehensive smokefree prison policy in Scotland from November 2018 and to the associated contract revision. With respect to **Publication 5**, AB supported PI Kate Hunt in the conception and design of the study (in particular the design of the qualitative component) and acquiring funding from CRUK. For **Publications 1 and 2**, staff focus group data were collected but not analysed before AB joined the TIPs team. AB's primary responsibilities for these publications were therefore in relation to the design, coordination and conduct of framework approach for data management and analysis of the focus groups and writing the manuscript, with input from co-authors. For **Publications 3-5**, AB led on planning fieldwork, drafting study materials, data collection, data management and analysis and writing the manuscripts, with input from co-authors. Appendix 2 provides more information on the extent of AB's involvement in collecting, managing and analysing qualitative data for individual studies.

Table 2. CRediT- Contributor Roles Taxonomy

	Conceptualization	Data Curation	Formal Analysis	Funding Acquisition	Investigation	Methodology	Project Administration	Resources	Software	Supervision	Validation	Visualisation	Writing – Original Draft	Writing – Review & Editing
Publication 1			✓			✓	✓	✓	✓		✓		✓	✓
Publication 2			✓			✓	✓	✓	✓		✓		✓	✓
Publication 3	✓		✓		✓	✓	✓	✓	✓		✓		✓	✓
Publication 4	✓		✓		✓	✓	✓	✓	✓	✓	✓		✓	✓
Publication 5	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

Chapter 2. Methods

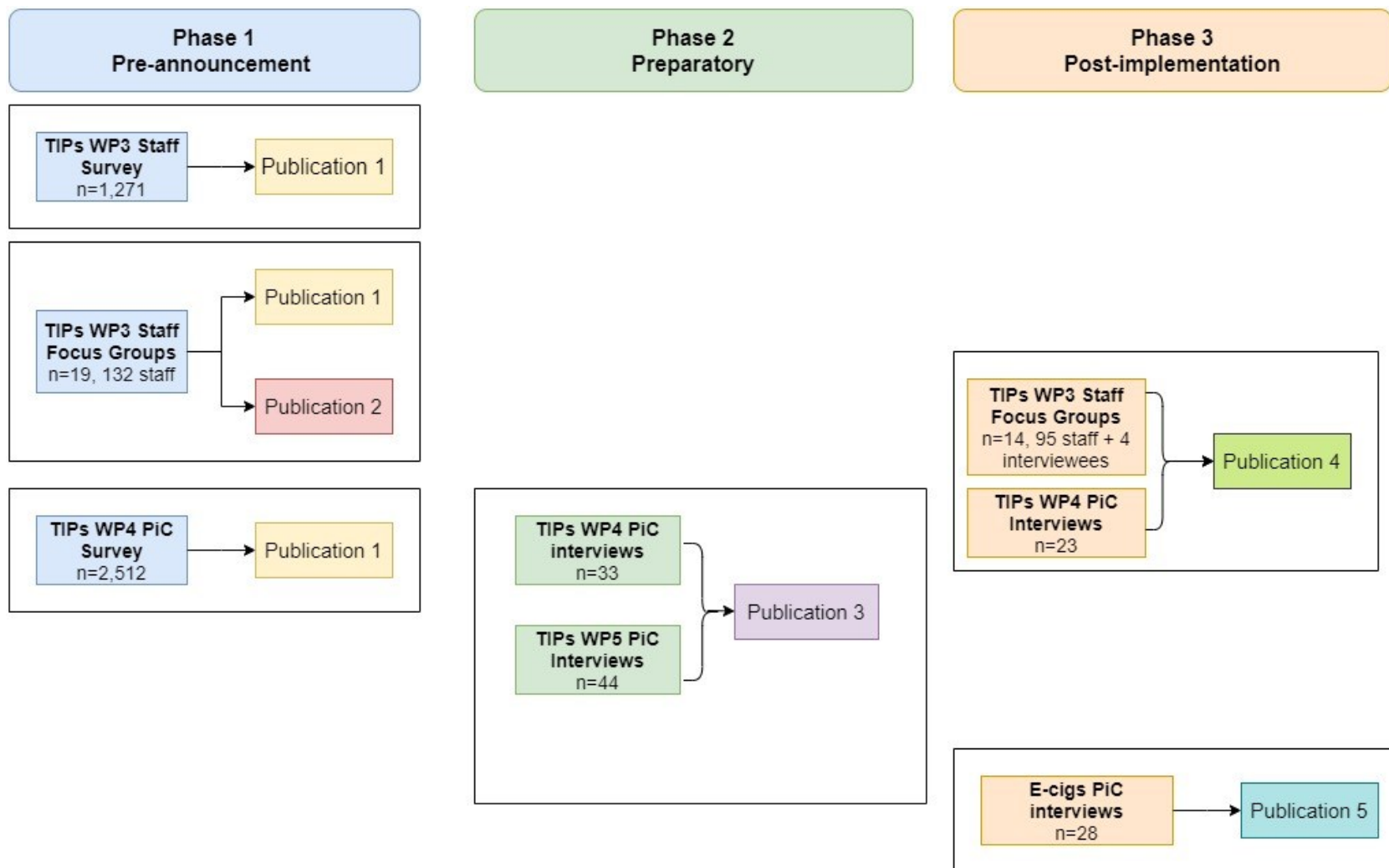
Qualitative methods were used in all the publications included in this thesis to investigate PiC and prison staff perspectives on the introduction of smokefree prison policies and e-cigarettes in Scottish prisons. As outlined in 1.3 the publications included in this thesis draw on one or more of five qualitative datasets collected as part of the TIPs or 'E-cigarettes in Prisons' study (See *Figure 2*, below):

- 19 staff focus groups with 132 prison staff in total in TIPs Phase 1 (**Publications 1 and 2**)
- Interviews with PiC (n=77) in TIPs Phase 2 (**Publication 3**)
- 14 staff focus group with 95 staff in total and interviews with 4 staff in TIPs Phase 3 (**Publication 4**)
- Interviews with PiC (n=23) in TIPs Phase 3 (**Publication 4**)
- Interviews with PiC (n=28) for 'E-cigarettes in Prisons' study (**Publication 5**)

Note that while **Publication 1** also reports findings of surveys of prison staff and PiC about their perspectives on smokefree prison policies, these methods are not described here, since Helen Sweeting, led on collection and analysis of these data and as such they are not presented as part of this thesis. Information about the survey methods can be found in **Publication 1** and in subsequent publications (Hunt et al. in press; Sweeting et al. 2019).

This chapter describes the approach to the qualitative research and methods used in the publications and then provides a statement for reflexivity and a description of key ethical and governance issues relating to (qualitative) prisons research.

Figure 2: Overview of methods, by publication



2.1 Qualitative approach

Qualitative methods are often defined (Ritchie et al. 2014) in relation to certain key characteristics: (1) focusing on how people make sense of the social world; (2) adopting non-probabilistic sampling techniques and flexible and responsive approaches to the collection of data; (3) generating rich, voluminous non-numeric data; and (4) using analysis techniques which support researchers to search for and interpret meanings in data. Consequently, qualitative methods are well suited to generating detailed understanding of issues from the perspectives of research participants and to the study of 'complex', 'intangible' and 'sensitive' topics (Ritchie and Ormston 2014), such as those related to smokefree prison policies.

Some researchers have challenged the idea that it is valuable to think of qualitative research as a 'coherent' or 'distinct' paradigm, arguing that the theoretical assumptions underpinning studies which use qualitative methods can differ widely (Rolfe 2006), and that studies might use very different procedures for sampling, data collection and analysis. This makes it particularly important to clearly describe the approach which has guided the design and conduct of studies when reporting qualitative research. The approach taken to qualitative research in the publications included in this thesis are aligned with the broad principles of 'Critical Qualitative Theory' (CQT), developed by Barnard (2012) based on the work of Ritchie et al. (2014). CQT is, I believe, appropriate for the studies included in this thesis, since it was developed to meet the requirements of applied policy research and supports rigorous data collection and analysis techniques and transparent reporting of methods and results. In addition, I gained substantial prior experience of carrying out qualitative studies aligned to the principles of CQT while working for NatCen Social Research from 2009-2017, where the approach was first developed.

CQT has six key principles (Barnard 2012). First, CQT is a critical realist approach to qualitative research, broadly meaning that while it is founded on the assumption that an external reality exists, proponents recognise that knowledge is always 'historically, socially and culturally situated' (Archer et al. 2016). Within CQT, combining qualitative and quantitative methods in a single study is viewed as

theoretically coherent, as well as practically useful in producing different forms of evidence, since each set of methods is considered to share a common philosophy. Second, CQT is aligned with 'interpretivist' approaches to social science which seek to understand how individuals experience, and make sense of, the world. For this reason, it is seen as crucial that analysis and interpretation of data are firmly rooted in the perspectives of participants. Deductive analytical techniques can be incorporated within CQT, although the goal is to balance inductive and deductive approaches throughout the study. Third, while it is recognised that generalisation is contested in qualitative research, CQT holds that rigorously conducted qualitative studies can produce evidence which has wider relevance in terms of the range and diversity of findings. CQT therefore aims to produce findings that are meaningful without quantification. Fourth, CQT involves use of in-depth data collection methods that generate full and detailed accounts from participants, to support trustworthy and defensible interpretations of evidence. Fifth, in CQT a conceptual distinction between data management and analysis is drawn, and emphasis is placed on clearly documenting steps taken during these (interconnected) processes. Finally, in CQT framework grids (see 2.5) are used to summarise data prior to abstraction and interpretive analysis, to support both within-case and across-case analysis.

Guidelines have been developed in recent years to improve transparency in the reporting of qualitative research. This thesis largely follows one such guideline, 'Standards for Reporting Qualitative Research' (SRQR) (O'Brien et al. 2014). Table 3 documents where in this thesis each of the topics included in SRQR are reported.

Table 3. Standards for Reporting Qualitative Research

Topic	Section of thesis
Title	Title page
Abstract	Abstract
Problem formulation	Chapter 1
Purpose or research questions	Section 1.3
Qualitative approach and research paradigm	Section 2.1
Researcher characteristics and reflexivity	Section 2.6
Context	Section 1.2 & 2.2
Sampling strategy	Section 2.3
Ethical issues	Section 2.7
Data collection methods	Section 2.4
Data collection instruments and technologies	Section 2.4 & Appendix 6
Units of study	Section 2.2
Data processing	Section 2.5
Data analysis	Section 2.5
Techniques to enhance trustworthiness	Section 2.5
Findings: synthesis and interpretation	Chapters 3-7
Findings links to empirical data	Chapters 3-7
Integration with prior work, implications, transferability and contributions to field	Chapter 8
Limitations	Section 8.3
Conflicts of interest	Acknowledgement
Funding	Acknowledgment

2.2 Study context

This section provides a description of the settings in which the research was carried out and summarises the salient policy context in respect of legislation on smoking and e-cigarette use in Scottish prisons.

2.2.1 Settings

Participants were PiC and staff working in prisons in Scotland. Scotland has a relatively high rate of imprisonment (134 per 100,000 of national population), ranking in 2021 within the top 20 countries in Europe (ahead of England and Wales, Spain, Portugal, France and Italy) (World Prison Brief 2021). The adult male prison population has been rising sharply since 2017-2018; this increase follows a period of stability in prison numbers for several years (Scottish Government 2020c). In 2019-2020, the annual average prison population in Scotland was ~8,200, and ~17,300 individuals were imprisoned in Scotland for all or part of that year. Most of the prison population are men (93%), identify as white and are on average aged 35.9 (although the proportion of PiC aged 55+ has risen from 3.3.% to 7% in ten years). Around ~20% of people were in prison for the full year in 2019-2020, providing an indication of the numbers of people in prison serving long-term sentences. In 2019-2020, this group was 27% times larger than in 2010-2011 potentially due to factors such as changes in sentencing and early release policies and in the offences for which people are being convicted (Scottish Government 2020c). The average annual number of young people (under 21 years) in prison has been falling since 2013-2014, while the average number of women in prison has remained stable. Individuals from the 10% most deprived areas in Scotland are overrepresented threefold in the prison population (Scottish Government 2020c). However, it is important to note that there is substantial variation in imprisonment rates within the most deprived areas, and between the most deprived areas and least deprived areas, suggesting that the relationship between deprivation and imprisonment is mediated by multiple other factors (McVie and Matthews 2018). PiC in Scotland have poorer mental wellbeing compared to their peers in the general population (Tweed et al. 2019) and there is a relatively high prevalence of alcohol and illicit drug problems, asthma, epilepsy,

prescribing of medications for coronary heart disease and for specific mental health conditions (such as depression and psychosis) and tooth decay (Graham 2007).

The SPS is responsible for the management of the Scottish prison estate. It is an agency of the Scottish Government that has a ‘...principal objective...to contribute to making Scotland Safer and Stronger by addressing offending and protecting public safety by focusing on recovery and reintegration’ (Scottish Prison Service 2018, p.4). The SPS aims to achieve this by ‘ensuring delivery of secure custody; safe and ordered prisons; decent standards of care; and opportunities for those citizens in our care to develop in a way that helps them reintegrate into the community on release’ (Scottish Prison Service 2018, p.4). In 2019, most (69%) SPS staff were male and aged 45+. Among staff who were willing to disclose their ethnicity, most identified as White Scottish (Scottish Prison Service 2019). At the time of data collection (November 2016-August 2019), PiC were housed across 13 publicly managed and two private sector prisons in Scotland. Adult men in prison are distributed across 13 prisons, with some separation of certain sub-groups within prisons (such as individuals who are untried (the ‘remand’ population)). Young people (under 21) are mostly housed in one prison (Polmont). Women are located either in a dedicated women’s prison (Cornton Vale) or in separated populations in other prisons. Several prisons (e.g. Edinburgh, Grampian, Greenock) hold a mix of population groups with distinct and complex needs (Scottish Government 2020c). Fourteen prisons have ‘closed’ security status, while one prison (Castle Huntly) is ‘open’, meaning that some PiC can leave the grounds for work placement or to go on home leave. Prisons in Scotland operate a programme of ‘purposeful’ activities (such as employment and education opportunities for PiC); in 2018/2019, the average time spent on these activities, among convicted prisoners, was 20hrs/week (Scottish Prison Service 2019). Constraints imposed by prison regime, staff numbers and other practical issues can result in PiC spending long periods in cells with limited ways of passing time.

The qualitative studies involving PiC reported in the publications included in this thesis were conducted in six of the ‘closed’ prisons in Scotland. Between them, these prisons house a diverse mix of PiC with respect to age, sex, remand/convicted status, and length of prison sentence. Reflecting the make-up of the prison estate,

most (but not all) of the included prisons are in central Scotland. To help preserve anonymity, descriptions of each prison have not been included in the thesis or in the publications.

2.2.2 Legislation on smoking and vaping in Scottish prisons

Information on the history of smoking and e-cigarette policy for PiC and prison staff in Scotland is provided in 1.2. In brief, Scottish prisons were given partial exemption from national smoke-free legislation implemented in Scotland in 2006, meaning that PiC were permitted to smoke in designated rooms (cells) indoors with the door closed or during outdoor recreation at that time. Consequently, in 2015 the rate of smoking among PiC in Scotland was 72% (Scottish Prison Service 2015), which was nearly 3.5 times higher than smoking rates in the general population (Scottish Government 2016). Comprehensive restrictions on smoking for prison staff and visitors were introduced in March 2008, two years after the implementation of the national smokefree legislation (Scottish Prison Service 2016). Equivalent legislation for PiC was not introduced until 30th November 2018, 12 years after (most) other indoor public places and workplaces in Scotland went smokefree. In early 2018, prison rules in Scotland were changed to permit the sale and use of e-cigarettes by PiC (staff were not permitted to vape while at work). At that time, certain single use e-cigarettes were available for PiC to buy through the prison 'canteen' (shop), which stocks a limited range of products chosen from a national product list. Rules are in place with respect to how often PiC can buy items from the canteen and there are also upper spending limits (which vary for different sub-groups) (HM Inspectorate of Prisons for England and Wales 2016; Scottish Prison Service n.d.). PiC acquire funds to spend via the canteen through employment in prison (estimated earnings in 2013 were £5-12 per week (Piacentini et al. 2018)) or financial support from family and friends. From September 2018 (~3 months prior to implementation of smokefree policy) the list of e-cigarette products sold on the canteen was expanded to include two brands of rechargeable e-cigarettes, and e-liquids in a limited combination of nicotine strengths and flavours. E-cigarette starter packs were given free of charge to declared, eligible adult smokers (Alderson 2018). All subsequent products had to be purchased from the canteen. Price discounts on some products were applied for

a limited time as a transitional measure (see elsewhere (Brown et al. 2020c) for further information).

2.3 Sampling and recruitment strategy

The ways in which settings and participants are selected and recruited to a study are particularly important features in influencing the degree to which a study's findings are transferable. A combination of conceptual (purposive sampling) and pragmatic strategies were used in the qualitative studies reported in the publications for this thesis, meaning that the selection of cases (e.g. settings, participants) was influenced by: (a) selection criteria of interest to the study research questions and (b) pragmatic factors such as the use of gatekeepers and an individual's availability and willingness to participate in the research.

Slightly different participant information sheets and consent forms were used with PiC and prison staff for each phase of TIPs and for the 'E-cigarettes in Prisons' study (see *Appendix 3-5* for an example of the participant information sheet, privacy notice and consent form used on the studies included in this thesis).

2.3.1 Settings

Staff focus groups

As part of TIPs, we aimed to conduct focus groups with staff in all 15 Scottish Prisons both before (Phase1) and after (Phase 3) implementation of smokefree prison policy (Hunt et al. 2019). Pre-implementation, the research team conducted focus group(s) in 14 prisons; it was not possible to arrange a focus group in the remaining prison during the fieldwork period. Post-implementation, we conducted a focus group in every prison in Scotland.

People in custody interviews

To minimise burden on the prison estate, we aimed to carry out interviews with PiC in six Scottish prisons during TIPs Phases 2 and 3 (**Publications 3 and 4**). Prisons were selected by the research team in consultation with the Scottish Prison Service

(prior to me joining the study) to provide a varied sample in respect of prisoner groups. As noted in 2.2.1, between them, the included prisons housed a mix of men/women, older/younger people, individuals who were on remand and who had been convicted and individuals serving shorter (4 years or less) and longer (more than 4 years) sentences. Prisons also varied with respect to size and, to some extent, geography (most were in central Scotland, reflecting the make-up of the prison estate). We managed to interview PiC in all six prisons for TIPs work-package 4, Phases 2 and 3 (**Publications 3 and 4**). It was only possible to interview PiC in five of the six selected prisons for TIPs work-package 5, Phase 2 (these interviews form part of the dataset reported in **Publication 3**).

For efficiency and to aid rapid data collection and contextualisation of findings, the same six prisons were successfully invited to take part in the complementary 'E-cigarettes in Prisons' study which included interviews with PiC when smokefree policies had become established (**Publication 5**).

2.3.2 Participants

For practical reasons, such as a high turnover in the prison population and wanting to avoid burdening the prison service by requiring them to track the movement of individuals transferring between prisons or in/out of the estate, samples are repeat cross-sections rather than longitudinal (see 8.3.1). Two different samples of staff participated in focus groups (**Publication 1 and 2**= staff sample one; **Publication 4**=staff sample two) and four different samples of PiC were interviewed (**Publication 3**=PiC samples one and two; **Publication 4**=PiC sample three; **Publication 5**=PiC sample four).

2.3.3 Sample size

The concept of 'saturation' is often used to inform decisions about the point at which collection of new data should cease on qualitative studies. However, saturation was not used to determine sample sizes in the publications included this thesis. Despite the concept 'attain[ing] something of the status of orthodoxy' in qualitative literature, Saunders et al. (2018, p.1894) notes methodological problems with using 'saturation'

as the sole barometer of sample size and adequacy. As an example, Barnard (2012) argues that researchers who are too focused on 'saturation' are at risk of entering a 'sampling silo' whereby data are gathered on one or two sub-groups, while other important sub-groups are (unknowingly) overlooked. Instead, for this work, the research team decided upon approximate target sample sizes in advance for staff focus groups and PiC interviews in consultation with the study's Research Advisory Group, convened by SPS. Decisions about sample sizes were informed by methodological considerations (what size and composition of sample was likely to provide the required diversity) and practical considerations in respect of study resources and minimising burden on the prison service.

2.3.4 Recruitment, participant selection and consent

For reasons of logistics, privacy and participant and researcher safety, the selection and recruitment of participants was supported by a point of contact(s) in each prison. The PI and AB met, in-person or by telephone, with senior management in the prison to discuss our research and to ask permission to carry out interviews with PiC and the focus groups with staff post-implementation. Following this, we provided a nominated point of contact (usually staff in a managerial role) with information about what would be involved for participants and discussed the desired sample size and characteristics, fieldwork logistics and other practicalities for their prison (such as where in the prison interviews should take place, and how to accommodate interviews within their prison's regime). The point of contacts then identified (e.g. using their own/others' knowledge/experience of PiC and prison staff) and approached individuals to ask if they might be willing to participate in the study. We asked the points of contact to share our study information sheet with individuals when they first approached them. Prior to conducting the interviews or focus groups, researchers provided PiC and staff with written and verbal information about the study (taking account of the literacy and learning needs of PiC), answered questions and checked that individuals were willing to take part. Consent was recorded either verbally or in writing on a case-by-case basis. I took a lead on liaising with the points of contact about study recruitment for **Publications 3-5**.

2.3.5 Sample composition

While we had limited control over who was ultimately invited and then agreed to participate in the focus groups and interviews, samples displayed good diversity with respect to our ideal sample criteria. For the staff focus groups (**Publications 1, 2 and 4**), samples varied in terms of staff smoking status and staff roles.

For the interviews with PiC (**Publications 3-5**), all samples varied with respect to age, sex, and sentence length and all apart from one sample (**Publication 4**) were varied with respect to remanded or convicted status. In TIPs Phase 2 interviews with PiC (**Publication 3**), we additionally aimed, and managed, to specifically include individuals who had experience of using smoking cessation services while in prison.

2.4 Data collection

2.4.1 Focus groups with prison staff

In TIPs Phases 1 and 3, focus groups with prison staff were conducted to investigate opinions and experiences of smokefree prison policies and e-cigarettes in prisons (**Publications 1, 2 and 4**). Focus groups were chosen by the research team as they enable in-depth investigation of opinions, beliefs and attitudes, and can be useful when exploring abstract concepts ('fairness' of smoking rules) and for generating ideas (e.g. about how to implement increased smoking restrictions) (Finch et al. 2014). It has been suggested that the interactional nature of the focus group is well suited to deeper investigation of topics (Wilkinson 1998), since participants can find it easier to articulate and refine their own perspectives after listening to others' viewpoints (Finch et al. 2014). It is also noted that the social context of focus groups is helpful in illuminating shared norms, culture, identities and meanings and the factors which shape them, as well as revealing areas of difference (Finch et al. 2014; Wilkinson 1998) which is why they are widely used in qualitative attitudinal research.

In TIPs Phase 1, 17 focus groups and, for operational reasons, two paired interviews (referred to collectively from here as 'focus groups' for brevity) were conducted with 132 staff from 14 prisons. In November 2016 to April 2017 (**Publications 1 and 2**).

Phase 1 focus groups were conducted before I joined the research team and were moderated by my co-authors on **Publication 1**.

In TIPs Phase 3, a further 14 focus groups were conducted with 95 prison staff from 14 'closed' prisons in May to August 2019. In addition, four staff with leading roles in the implementation of smokefree prison policies at local (prison) level were interviewed, to capture their perspectives (**Publication 4**). Two interviews were conducted one-to-one, and two participants requested a paired interview (n=3 interviews). I led on planning fieldwork and I moderated the 14 focus groups and conducted the interviews. I was joined in most of the focus groups by the PI, Kate Hunt, who took notes to support subsequent transcription of the data (see 2.5.1) and sometimes asked additional questions at appropriate points (e.g. concluding stage of the focus group). A 15th focus group conducted in the open prison in Scotland is reported separately (Hunt et al. in press).

In the TIPs Phase 1 and Phase 3 staff focus groups, the facilitator's role in the focus group was to stimulate discussion among participants (Wilkinson 1998), ensure relevant issues were covered, follow up responses to obtain specific detail, clarify points, identify divergent perspectives, and manage the group (Wilkinson 1998) to ensure that everyone had an opportunity to contribute and participants were courteous and respectful of one another (Finch et al. 2014). Focus groups were moderated with the aid of a topic guide, developed iteratively with input from SPS and members of the research team and shaped by the study objectives and existing literature. Researchers used the topic guides flexibly, formulating questions using their own words, adjusting the topic order as appropriate, probing for detail, and following up on unanticipated issues raised by participants (Arthur et al. 2014). The topic guide for the TIPs Phase 1 staff focus group covered issues such as participant background; prison smoking culture; exposures to SHS within prison; smoking cessation support in prisons; e-cigarettes and prison smoking restrictions. The topic guide was revised for the subsequent staff focus groups carried out post-implementation, covering issues such as participant background; opinions of smokefree prison policy; perspectives of working in smokefree prisons (including success/challenges and positive/negative consequences); compliance and enforcement of smokefree policies; and lessons learned. Focus groups were

conducted during daytime working hours in a room in the prison organised by the point of contact and were audio recorded with the permission of all participants. (See *Appendix 6* for abbreviated topic guides for the studies included in this thesis).

2.4.2 Interviews with people in custody

One-to-one, or occasionally paired, interviews were conducted to explore PiC's opinions and experiences of smokefree prison policies and e-cigarettes as part of TIPs Phases 2 and 3 and as part of our complementary 'E-cigarettes in Prisons' study. PiC were interviewed for several reasons. First, interviews enable in-depth exploration of individual opinions and experiences (Lewis and McNaughton Nicholls 2014). Second, issues around smoking, SHS exposures, smoking restrictions and e-cigarette use in prisons were recognised both to be potentially emotive topics and topics governed by strong social norms (smoking has been socially accepted within prison culture, particularly among PiC). Considering this we judged that the complex social and interpersonal dynamics that exist in prison communities might inhibit some individuals from discussing their personal opinions and experiences in a group setting, particularly given that researchers would have little control over the composition of the groups (Lewis and McNaughton Nicholls 2014) and no control over what happened when PiC returned to their daily lives in the prison after the group. Third, the choice of interviews places less burden on the prison service (in respect of finding a suitable time and space in prison for focus groups, escorting (multiple) PiC to and from groups, carrying out 'enemy checks' to avoid bringing together individuals who are known adversaries). Finally, we also recognised that management of the focus group might be particularly challenging due to our lack of prior knowledge and relationships with individuals and that this might negatively affect data quality, as well as potentially be an uncomfortable experience for participants (and for researchers).

In TIPs Phase 2, two complementary qualitative datasets (collected as part of TIPs work-package 4 and work-package 5) were collected, each involving interviews with PiC who were former or current smokers (**Publication 3**). The combined datasets comprised 77 interviews (75 individuals were interviewed one-to-one and two participants requested a paired interview). Data were collected for work-package 4 interviews from November 2017-January 2018 by TIPs researchers. I took the lead

on planning fieldwork and I conducted ~50% of the PiC work-package 4 interviews. Data collection for work-package 5 took place from May to June 2018; interviews were conducted by my co-authors on **Publication 3** Douglas Eadie and Richard Purves. Topic guides covered broadly similar topics for work-package 4 and work-package 5 interviews: participant background; smoking history; smoking and smoking cessation in prison; e-cigarettes in prisons; smoking restrictions in prisons; and facilitators and barriers to implementation of smokefree prison policy.

In TIPs Phase 3, 23 PiC were interviewed between May to August 2019, ~6-9 months post-implementation (**Publication 4**). 21 individuals were interviewed one-to-one and one joint interview was conducted with PiC at their request (n=22 interviews). I took the lead on planning fieldwork and I conducted ~75% of the interviews. Topic guides covered broadly similar issues to those covered in the TIPs Phase 3 staff focus groups (see 2.4.1): participant background; opinions of smokefree prison policies; perspectives on living in a smokefree prison and positive/negative consequences; compliance and enforcement of smokefree-rules; and lessons learned.

In the 'E-cigarettes in Prisons' study, 28 interviews were conducted with PiC who were current or former e-cigarette users in prison from May to August 2019 (**Publication 5**). This was ~6-9 months post implementation of the smokefree prison policies and ~8-12 months after (rechargeable) e-cigarettes could first be purchased from the prison canteen list by PiC in Scotland. I took the lead on planning fieldwork; data collection was shared among the research team (I carried out ~40% of the interviews). Topic guides covered: participant background; smoking and vaping history; experiences and perspectives of vaping in prison; and views on benefits/risks of e-cigarettes being available to PiC.

Researchers used the topic guides flexibly in the interviews. They could vary the question wording, topic order; use of probes and prompts to gain additional detail or stimulate discussion; and follow up on unanticipated and additional issues raised by participants. Interviews were conducted in rooms/areas in the prison chosen by the prison point of contact. Only the interviewer and the participant were present during

the interview to maintain privacy. No financial incentives were offered for participation.

2.5 Analytical process

Qualitative data were analysed thematically, supported by the framework approach developed at NatCen (Spencer et al. 2014b). For each dataset, the analytical process that was taken broadly adhered to the one described by Spencer et al. (2014b) (which the authors note 'shares a similar analytical path to the one described by Braun and Clarke') (Spencer et al. 2014b, p.278). The process involved four key steps: transcription of interviews/focus groups; development a thematic framework (row=interview/focus group; column=theme); summarisation of data into a framework grid; and abstraction and interpretation (grouping data into categories to form analytical themes and sub-themes using summarised data and transcripts). Each step in the analytical process is described in more detail below.

The framework approach was used to support thematic analysis of staff focus groups and interviews with PiC for several reasons (Gale et al. 2013; Smith and Firth 2011). First, summarising data in a framework grid helps to prepare data for abstraction and interpretation by ordering and reducing the volume of material, which is particularly valuable when working with relatively large and complex qualitative datasets as is the case here. Second, displaying data summaries in a framework grid in NVivo (with hyperlinks between summaries and raw data) supports systematic reviewing, and easy retrieval, of material when identifying themes, checking interpretations and locating quotes. Third, the methodical nature of the framework approach helps to ensure every aspect of the data, including outliers, is considered in the analysis process. Fourth, breaking down analysis into a series of auditable tasks makes it relatively easy to retrace the steps which have been taken during the analysis process. Finally, the framework approach supports both 'within-case' and 'cross-case' analysis. Within-case analysis involves reading across rows to understand individual cases, while cross-case analysis involves reading down columns to compare similarities and differences between interviews or focus groups. By contrast, a potential limitation of ordering data solely by theme/topic (i.e. by only coding extracts) is that extracts can become decontextualized, potentially hindering the ability to make connections between different topics during analysis.

2.5.1 Transcription

With permission, interviews and focus groups were audio recorded and transcribed to facilitate comprehensive and detailed thematic analysis. Transcribing sound files is not simply a 'technical procedure' rather, it involves making judgements about what is being said and which aspects of the recorded data should be represented on paper (Bailey 2008). Sound files were transcribed 'intelligent verbatim style', meaning that some aspects of speech such as 'hesitations, repetitions and unnecessary interjections' (1st Class Secretarial Services n.d.) were edited out. Intelligent verbatim style transcription was chosen to aid thematic analysis of interviews and focus groups, which is primarily concerned with the content and meanings of participants' words rather than linguistics or social interaction (as is the case with conversation analysis).

Interviews and focus groups were transcribed by a professional transcription agency with specific skills and experience in transcription for academic research. Given the sensitivity of the data, the professional transcription agency was selected in part based on their working to high standards in respect of information governance and data security and after signing a confidentiality agreement with the University of Glasgow and/ or Stirling. Several measures were taken to enhance the accuracy and completeness of the transcription of audio data, particularly since PiC often spoke in strong regional or prison dialect and unavoidable background noise from the prison can be heard on many recordings. First, in TIPs Phases 2 and 3, the professional transcribers were provided by the research team with brief background information on the study and a glossary of key terms. Second, transcripts were reviewed by a member of the research team prior to analysis to remove any potentially identifying information and to identify obvious errors in transcription as far as possible. For practical reasons, it was not possible to check whole transcripts against sound files. Third, a second moderator was present for most of the staff focus groups in TIPs Phase 3 to take written field notes that could be used to help with checking of transcripts as required.

2.5.2 Construction of thematic framework

I took a lead role in developing the thematic framework (or coding scheme) for each qualitative dataset, generally with input from members of the research team. The thematic frameworks were devised using a combination of inductive and deductive techniques e.g. I took account of the study research objectives, questions and topic guides and wider literature, and closely read transcripts to ensure familiarity with data. Draft thematic frameworks were circulated among members of the research team for feedback, informed by colleagues' experience of carrying out fieldwork or reading a sample of the transcripts, before the final version was applied to the dataset.

Note that several thematic frameworks were developed to manage the staff focus group data collected in TIPs Phase 1 (reported in **Publications 1** and **2**). The first thematic framework was developed prior to me joining the research team and colleagues used this thematic framework (general tobacco and bans; prison bans; smoking culture in prisoners; smoking culture in staff; SHS exposures; e-cigarettes; quitting, alternatives and cessation; operational, organisational and local issues; situation in prisons in Wales, England and elsewhere; Scottish Prison Service; Scottish Government; and TIPs research) to organise the dataset. After joining the research team, I created a second thematic framework to further manage outputs from the 'prison bans' code as part of the analysis for **Publication 1** and I created a third thematic framework to organise outputs from the 'e-cigarettes' code as part of the analysis for **Publication 2**. Please see *Appendix 7* for the thematic frameworks for each dataset.

2.5.3 Data summarisation

For each qualitative dataset, I constructed a framework grid in NVivo (v.11/12, QSR International). This involved giving each interview or focus group a row in the framework and giving each theme a column. I then produced summaries for each theme in the framework grid for all staff focus groups in TIPs Phase 1 (**Publications 1** and **2**), and all interviews with PiC in work-package 4, TIPs Phase 2 (**Publication 3**). The tasks of summarisation of the qualitative datasets in **Publications 4** and **5** was shared with a small number of colleagues (see *Appendix 2*); however, all

summaries were reviewed to check data interpretation and consistency of approach. In line with guidance in the literature (Spencer et al. 2014b), summaries were written to try to strike a balance between conveying the essence and complexity of material on the one hand, and synthesising and reducing the volume of text to a manageable level on the other. Hyperlinks between raw data (original transcripts) and summaries were included in cells to make it easy to move between the two; and style conventions were followed to help differentiate between summarised text; direct quotations from participants; and analytical notes. For pragmatic reasons, one dataset (interviews with PiC in TIPs Phase 2 collected as part of work-package 5, **Publication 3**) were coded (but not summarised) by colleagues who led on TIPs work-package 5.

2.5.4 Abstraction and interpretation

The final stage of thematic analysis involved identifying the range and diversity of views, experiences and meanings in the data by adopting an iterative process which is broadly similar to that described by Spencer et al. (Spencer et al. 2014a; Spencer et al. 2014b) and Braun and Clarke (Braun and Clarke 2006; Braun and Clarke 2012). I began by reviewing the framework grid to familiarise myself with the summarised dataset. I then grouped responses together into categories according to their perceived similarities or differences to create themes and sub-themes, which were then labelled. This process involved me carefully reading data summaries, excerpts and transcripts (as required). Data were also investigated further to search for possible links between themes, and to provide possible explanations for beliefs, opinions, experiences etc. Potential differences between sub-groups were examined where possible, but results were mostly presented for the sample overall because sub-groups were small and internally diverse. Themes and sub-themes were then structured to provide a coherent narrative for the dataset. Themes were refined over multiple iterations based on critical reflection, the act of writing analytical notes, and further examination of summaries, and raw data. My co-authors on the publications assisted in data analysis (see *Appendix 2*) and contributed to development and refinement of interpretations, themes and sub-themes based either on reading a sample of data to familiarise themselves or conducting independent analysis of the data (Kate Hunt, **Publication 2**; Douglas Eadie/Richard Purves/Andrea Mohan, TIPs

work-package 5 interviews with PiC, **Publication 3**; Rachel O'Donnell, **Publication 5**). The involvement of multiple researchers in the analysis process was designed to enhance the trustworthiness of the analysis.

2.5.5 Analysis of focus group data: additional issues

Several authors have noted that discussion of specific considerations relating to the analysis of focus group data has been lacking in the literature (Duggleby 2005; Wilkinson 1998). The staff focus group data presented in **Publications 1, 2 and 4** followed the analytical process described above (each focus group was assigned a row in the framework grid.) In addition, attention was paid to the interactive dimensions of the data (particularly for **Publications 1 and 2**), although the primary focus of the analysis and write up was the substantive content of participants' accounts in line with study objectives and journal word limits. Specifically, interactional aspects of the data (e.g. areas of consensus and disagreement, whether and how perspectives changed over the course of the focus group; and specific types of interaction such 'questions') were examined largely to contextualise and inform interpretations of the content of what participants said in the focus groups (i.e. thematic analysis). Descriptions and illustrative examples of some features of group interaction were presented in relevant publications as far as practicable (e.g. given word length guidelines) to give readers a richer understanding of the material and verify interpretations.

2.6 Researcher reflexivity

Researchers are 'an integral part of the process and final product' of qualitative studies (Galdas 2017, p.2), and their characteristics, beliefs, assumptions and experiences can (positively or negatively) influence the collection, analysis and interpretation of data (Mays and Pope 2000). Researcher reflexivity about how 'intersubjective elements' (Finlay 2002) shape research can help enhance quality in qualitative research and support ethical research practice, particularly when conducting studies involving seldom herd populations who may be at increased risk of harm through involvement in (poorly planned and conducted) studies (Pacheco-Vega and Parizeau 2018). It is therefore recommended that researchers engage in

'continuing and dynamic' (Finlay 2002, p.533) reflexive practice and document reflections when reporting study findings (O'Brien et al. 2014). In this section I consider the ways in which my knowledge and experiences, personal characteristics and approach to conducting the research may have influenced the collection, analysis, interpretation and reporting of data.

2.6.1 Knowledge and experiences

I joined the TIPs research team after funding for the research had been secured from the UK NIHR by the project PI Kate Hunt. My motivation in applying for role of full-time researcher on TIPs centred on my professional interest in the substantive and methodological area and previous experience of conducting research with people with convictions and those working in the criminal justice system. While I had a strong interest in health and well-being, I had given little thought to the topic of tobacco use in prison prior to applying for the role. While my limited knowledge of the research topic was somewhat challenging at the outset of the study (and required a rapid period of familiarisation), it was also, I believe, an asset, particularly in relation to analysing data for **Publications 1** and **2**, because it meant that I did not have strong prior assumptions about the topic, potentially helping me to identify the full diversity of perspectives among prison staff. I believe that it was also particularly helpful when collecting and analysing data on staff perspectives (**Publication 2**) and PiC perspectives (**Publication 5**) on e-cigarettes, given that discussion of e-cigarettes can be polarised and contentious within tobacco control communities. However, I also recognise that it was important that I had read key literature prior to collecting and analysing data and that subject matter experts were part of the authorship team, to help guard against naïve or poorly informed interpretations of data and ensure findings were sensitively presented and engaged with wider debates.

My interpretations of each dataset will inevitably have been shaped by my prior knowledge of broader issues related to imprisonment and criminal justice, based on my experience of having interviewed both PiC and prison staff/other criminal justice professionals for previous studies. My understandings of the challenges facing PiC, prison staff and prison systems continued to evolve over the course of the research reported in this thesis, including based on informal conversations with prison staff as

they escorted me during fieldwork, and ongoing discussions with prison and health services while I attended the SPS Stakeholder Advisory Group. I believe that my knowledge and experience of prison settings was useful in guarding against simplistic readings of data, and in fostering a commitment to 'seeing' the issues from different viewpoints. As Berger suggests this required continuous conscious reflection on whether our presentation of findings conveys the meaning of what participants have said '...rather than what we think and believe' (Berger 2013, p.228).

2.6.2 Personal characteristics

While recognising that social groups are internally diverse, it is important to acknowledge differences in gender, social class, life experiences, and relationship to prison environment between myself and (many) of the research participants. It is important to note first that I have neither experienced imprisonment, nor worked in prisons. As others have argued (Dwyer and Buckle 2009), assumed differences between researchers and research participants may have both positive and negative influences on studies. As an example, while there is undoubtedly a gendered dimension to conversations about safety, dress and potentially credibility for women conducting research in a (mostly) male prison environment, there are also potential advantages such as being less likely to be viewed as a 'threat' (Jewkes 2012) and not having to worry, as men do, about the performance of masculinities. These observations chime with my own experiences of conducting this research and experiences on previous studies. I am (more) conscious of my intersecting gender and class identity when I interview woman in custody, although I am unable to recall any specific examples of these differences appearing to be a significant disadvantage during this research.

Assumed differences in life experiences were, I believe, often helpful during data collection, since I was able ask questions from a position of 'relative ignorance' (Crewe 2014) and participants often readily provided full descriptions of their individual experiences/the workings of prison life and culture, perhaps, as others have suggested (Dwyer and Buckle 2009), because they did not assume a shared understanding. At the same time, I recognise that there are likely to have been occasions when perceived differences in my background or life experiences might

have lowered trust/credibility or inhibited openness among some participants (Dwyer and Buckle 2009). For instance, I can recall a few occasions where prison staff provided candid, sometimes graphic, descriptions of the challenges of working in prisons and the problems reportedly caused by tobacco (pre-ban) and e-cigarettes, perhaps because of concerns about my ability to fully understand their perspectives and experiences.

2.6.3 Research approach: 'empathic neutrality'

There are different perspectives on 'allegiances' in research (Liebling 2001) and where the boundaries of researcher-participant relationships should be set. In this research, I made a conscious choice to strive for 'empathic neutrality' (Ormston et al. 2014, p.22) in data collection, analysis and reporting, given that smokefree prison policies can be a contentious and polarising issue among staff and PiC, and smokers and non-smokers. Empathic neutrality means striving as far as possible to be 'open-minded', 'non-judgemental', honest and rigorous in conducting research and to demonstrate empathy and care for participants during fieldwork without overstepping boundaries and acting as an advisor or 'friend' (Ormston et al. 2014). I believe it also requires a commitment to 'seeking to appreciate competing perspectives' and to form a 'sympathetic understanding' of issues from the viewpoint of different groups (Liebling 2001). This position has historically been less acceptable in prisons research (compared to one which privileges the perspectives of PiC), given differences in power between PiC and prison staff and commitments to criminal justice reform. However, as Liebling (2001, p.481) argues researchers that 'look in more than one direction to account for social phenomena...do a more adequate job than those which look only through the eyes of prisoners, prison staff or senior managers...'. In addition, I believe that a commitment to social justice, alongside rigorous and trustworthy research practice, requires being attendant to the challenges and harms experienced not only by PiC, but also prison staff (and to other stakeholders such as families) as far as possible.

I used several strategies to seek to achieve 'empathetic neutrality' when collecting, analysing and reporting data, informed by guidance in the literature (Yeo et al. 2014) and the research methods training I had received while working for NatGen. First, I emphasised to participants that there were no 'right or wrong' answers to questions

and did not volunteer personal information about my smoking status, express my views or knowledge or consciously indicate agreement or disagreement with a participant's views in case this led them to moderate or change their responses. On the relatively infrequent occasions when participants (typically PiC) were curious about whether I was a smoker or my views on the ban, I would decide on a case-by-case basis how best to respond. For example, turning the question back to the participant to gain a deeper insight into their own perspectives, suggesting that we return to the question at the end of the interview/focus group, or providing a brief response where I felt that this was helpful or necessary (e.g. 'I'm a non-smoker' or 'It's [the smoking ban] a complex issue').

Second, I tried to ensure participants felt at ease in the interviews/focus groups by thinking carefully about how I presented myself. I paid particular attention to the clothes I wore when visiting prisons, aiming to appear approachable, professional, and credible and demonstrating to staff and PiC that I was familiar with rules and norms on 'dress' in prisons and of the realities of being in a prison environment. This was something that I did not find too challenging because of my previous experiences of criminal justice research, although it always required advanced planning and careful thought. I believe that I was largely successful in managing to 'blend in' among the non-uniformed staff and regular visitors that pass-through prisons, as illustrated by a PiC who mistook me for a member of healthcare staff. The only occasion in which I recall feeling uncomfortable was when a PiC (another woman) complimented me on my jumper. While I recognised that the compliment was kindly intended, I also worried about whether this indicated that my clothing choice was inappropriate in perhaps being a signifier of our different access to resources and further reminder to the participant about the limited choice PiC have over their own appearance in prison. On further reflection, I recognise that PiC are likely to have recurrent thoughts about missing freedoms and wanting greater control over their lives, and that I am unlikely to have exacerbated these ongoing challenges to any great extent.

Third, I was conscious of trying to convey warmth, empathy and confidence during fieldwork, informed by guidance in the literature (Yeo et al. 2014). Techniques included making eye contact, smiling and nodding, and maintaining good posture,

particular when in the residential areas of the prison (which can be daunting environments). Prison staff and PiC often had a good sense of humour and I would laugh along with their jokes (none were to my recollection inappropriate), since these helped people to relax. For example, I recall a member of staff making a joke about needing to 'keep an eye' on me while he was opening the blinds in the room where I was interviewing a PiC one-to-one (which he was primarily doing for my safety so that he was able to observe what was happening in the room). This joke helped to take away any insinuation that the blinds had to be open because the PiC who I was interviewing was viewed as untrustworthy. I would also try to keep a sense of humour if I encountered any problems during fieldwork, such as technical issues with the Dictaphone, or I did not express myself clearly enough and needed to re-ask a question. I tried to develop rapport with participants and encourage participants to 'open up' during interviews and focus groups through using active listening skills. This involved reflecting the language used by participants (e.g. referring to the smokefree policy as 'the ban') as appropriate; asking relevant follow-up questions; and providing verbal encouragement ('This is really helpful.' 'Can you tell me more about X?') to participants who were reticent or appeared unconfident in sharing their views. I also tried to approach interactions with sensitivity, showing compassion when questions evoked negative emotions (sadness, annoyance/anger). This was done for example, by acknowledging participants' reactions, asking participants whether they were comfortable to keep discussing topics, and, as far as possible, leaving time after turning off the audio recorder to 'wrap up' the conversation and, if appropriate, to signpost PiC to services in the prison which could potentially help them to manage or resolve problems (Yeo et al. 2014). These combined strategies appear to have worked relatively successfully, since participants generally spoke fully and frankly about research topics and rich and varied data were generated.

On many occasions I felt emotionally and physically drained after a day of fieldwork in prison. This was for several reasons. As Jewkes (2014 p.388) observes '...despite only experiencing a tiny fraction of the restrictive binds of carceral space and time, researchers nonetheless cannot help but be touched, if not deeply affected, by the cultural isolation and emotional intensity of confinement, even though they are largely experiencing it one step removed and in relatively short doses.' In addition, to the challenges raised by Jewkes (2014), I found the constant need to maintain the

role of 'researcher' quite draining; there is very little time when you cannot be 'seen' by others in prisons and so much of the day is spent, consciously or sub-consciously, managing how you present yourself to others. Other challenges included some participants expressing very strong views and emotions on the topics of smoking in prisons. For example, some I spoke to were extremely angry or distressed by the (impending) smokefree prison policy, while some prison staff were incredibly frustrated that a change in smoking policy had not occurred much sooner. Challenging views were also voiced on the topic of imprisonment more generally. For instance, I felt disappointed, and sometimes shocked, on the occasions when some staff spoke about PiC in ways I felt were inappropriate or even stigmatising. Equally, I felt uncomfortable and upset when some PiC expressed what I perceived to be a complete disregard for the health and welfare of those working in the prison, and I found it upsetting to hear PiC's 'personal stories' in respect of adverse life events and/ or the challenges of imprisonment (including separation from family).

The opposite is also true: I had many positive (rewarding) interactions with PiC and prison staff, including occasions when good rapport had been established and PiC shared things which were very personal, such as speaking about loved ones, or speaking candidly about their worries or hopes for the future, and at least one PiC shared a poem with me that they had written. These experiences support observations (Dickson-Swift et al. 2009) that qualitative research is both an emotional and intellectual endeavour. It has been suggested that emotion has several functions in qualitative (prisons) research, including shaping our interests, experiences and interpretations, serving as an asset (emotional intelligence) during data collection, being an important area of study (e.g. investigating the interior lives of PiC and prison staff) (Crewe 2014) and enriching (giving 'vividness and luminosity') analysis and writing (Jewkes 2014, p.387). As Crewe (2014) observes, it becomes easier to identify, and harness, our own emotional responses and subjective experiences with the assistance of colleagues with whom we can engage in reflexive discussion, including about differences in how we each respond to the same people, narratives and environments. I found these kinds of regular conversations with other researchers invaluable in trying to foster self-awareness, while also acknowledging that 'we are all [to some extent] blind to our blind spot' (Crewe 2014, p.401). As Liebling (1999, p.160) observes, reflecting my own

experiences on this research, regular de-briefing and discussion among the research team serves multiple roles, including 'as a creative exercise and a check on the method and interpretation, and as a mode of support for those in the field'.

Fourth, in analysing, interpreting and presenting data I sought to ensure that research topics received what Mays and Pope (2000, p.51) refer to as a 'fair dealing' through ensuring that studies '...explicitly incorporate a wide range of different perspectives so that the viewpoints of one group is never presented as if it represents the sole truth of any situation.' A key goal of analysis was to present the breadth of views and experiences. Strategies to support this included: use of framework approach to support systematic and transparent analysis of data and critical review and discussion of summaries of emerging findings and drafts of publications within the study team(s) working on each publication, to support trustworthy analysis and to reach agreed interpretations (See 2.5). Rigour and reflexivity were also supported by regular de-briefing and discussion among specific members of the team (see above). Pacheco-Vega and Parizeau (2018, p.4) have noted that the ability to maintain a 'healthy distance' is essential if researchers are to successfully communicate the viewpoints and concerns of stakeholder groups across 'lines of difference'. They have also noted, there is a need to ensure that study outputs do not inadvertently perpetuate inequalities in already marginalised groups. Drafts of outputs were reviewed and reworked multiple times to minimise scope for misinterpretation by audiences who lacked detailed knowledge of the prison setting and the unique challenges faced by those living and working in this environment. This process was undoubtedly aided through discussion of emergent findings with stakeholders from prison and health services in Scotland who could comment on whether findings resonated with their own knowledge and experiences and help to contextualise accounts and inform interpretations. These discussions and feedback on outputs was extremely valuable and reassuring, including feedback from a senior manager in the prison service that the voices of PiC reported in one output (an early summary of findings) were immediately recognisable to him as someone who had worked in prisons for many years. The findings, including those relating to negative experiences and challenges, were accepted by stakeholders; our academic freedom was respected, and there was wide support for publication of results. Some prison researchers in other jurisdictions have reported very different

experiences (Liebling 2001). A key limitation was that, for practical reasons, we were not able to carry out an equivalent process of checking whether emerging findings had resonance with PiC (See 8.3.1 for further discussion).

2.7 Ethics and practical issues in conducting prisons research

Conducting prisons research raises a number of practical and ethical issues and requires particular care and sensitivity on the part of researchers. This section describes how these considerations were addressed in our studies of smokefree prisons.

2.7.1 Access

The research team worked closely with key stakeholders in the prison and health services in Scotland in the design of the TIPs and 'E-cigarettes in Prisons' studies. These programmes of research were approved by the Scottish Prison Service Research Access and Ethics Committee, the University of Glasgow's College of Social Sciences Ethics Committee (for TIPs, reference number: 400150214) and University of Stirling's General University Ethics Panel (for 'E-cigarettes in Prison study', reference number: GUEP 497). I took a lead in drafting ethics amendments for the qualitative elements of TIPs work-packages 3-4 in TIPs Phases 2 and 3 and drafting of the ethics application for the 'E-cigarettes' study. Before starting fieldwork, the PI or another core member of the research team visited each prison to discuss the research design and procedures with the Governor-in-Charger or nominated staff. Follow up discussions were held with points of contact in each prison to discuss and agree fieldwork dates and logistics. The extensive preparatory and engagement work carried out by the research team, particularly the PI and AB during TIPs Phases 2 and 3, appeared to work well in facilitating access to prison staff and PiC for data collection. In addition, this engagement helped to ensure that the proposed programmes of research were feasible, had high policy-relevance and widespread stakeholder buy-in. Researchers in other jurisdictions have similarly found that prisons studies are likely to benefit from developing collaborative research relationships (built on mutual goals) with senior stakeholders and establishing good links with personnel in local prisons (Apa et al. 2012).

2.7.2 Informed consent

Informed consent is a cornerstone of research ethics. Concerns have been raised however, about the degree to which PiC are able to adequately make voluntary and informed decisions about participation in research given the profile of the prison population (low levels of literacy, cognitive impairment, brain injury and mental health problems are more common among PiC than the general population), extensive restrictions on PiC's autonomy and power dynamics in prisons (Charles et al. 2016). In response to these concerns, researchers assessed the degree to which 30 PiC, who were under psychiatric care in a US prison, were capable of providing informed consent for a hypothetical research study. The researchers found that almost all PiC who took part 'demonstrated adequate capacity to consent' to the research study (Moser et al. 2004, p.1). However, the researchers also found that PiC scored lower on two dimensions ('understanding' and 'appreciation') of decisional capacity, compared to a control group from the general population. The authors concluded from the findings that, while results were encouraging, researchers should take particular care when seeking consent from PiC. The study also examined the role of coercion in participants' decisions to participate. While data suggested that PiC did not feel they had been coerced to take part (for example, by force, threat or fear of punishment), their reasons for agreeing to participate differed in some important ways from the control group, potentially due to being in the prison environment. PiC's most common reasons for participation were the desire to appear cooperative in the hope of better treatment from others, avoiding boredom, meeting someone new and helping others. The study authors suggested that those involved in prison research should be aware of these influences, while also pointing out that it is unlikely to be possible to eliminate them entirely. Overall, the authors concluded that the findings of the study support calls from other prison researchers to ensure that regulatory bodies' desires to protect PiC from harm in research do not inadvertently lead to 'communities becoming increasingly invisible' (Spencer 2017, p.974) in the evidence available to policy makers making decisions that affect those communities (Moser et al. 2004).

In the current research studies, procedures for obtaining informed consent from PiC were designed to take account of the particular needs of the prison population and to

recognise that those in prison may feel undue pressure to participate. For practical reasons, potential participants were first approached by a designated staff contact in each prison who had been briefed by the researchers on the purpose of the study, what taking part would involve for participants and the desired sample composition. Researchers met one-to-one with PiC to provide accessible written and verbal information about the study, to answer questions, to carefully check whether s/he felt informed and to establish whether the PiC was still interested in taking part. During conversations with PiC, I emphasised the independence of the research team from SPS and Scottish Government and explained that participation was voluntary. To ensure that PiC could speak freely without being overheard, researchers met with PiC in private rooms in prisons selected by staff contacts. PiC who agreed to take part were given the option to provide consent either verbally or in writing so that PiC did not have to disclose any difficulties with literacy to the researchers. Participant incentives were not offered because of institutional rules. Empirical evidence on the benefits and risks of participant incentives in research involving PiC would be beneficial, particularly since the use of incentives is widespread in research involving the general population, in part, to demonstrate appreciation for participants' contributions.

Overall, the consent procedures for PiC appear to have struck a balance between enabling PiC to have a say on issues that directly affect their day-to-day lives while in prison, on the one hand, and protecting PiC from undue pressure to participate, on the other. While most people who met with the researchers chose to proceed with the interview, there were some who changed their mind or declined the interview (for example, for personal reasons or a lack of interest in involvement after hearing more about what was involved), which gives confidence that some people felt able to exercise autonomy. Those who agreed to participate were generally engaged in the interview and appeared comfortable to express their views openly and candidly. Staff contacts were asked to allow PiC a period of time (for example, a day or more) to think about participation in advance of meeting with a researcher. However, in practice some participants were recruited on the day, if interview slots became available due to cancellations or conflicts in other PiC's schedules. When this happened, the researchers took extra care to emphasise the voluntary nature of participation and to talk the person through the participant information sheet and

consent form. This approach was considered by the researchers to be ethically sound given that PiC have few opportunities to have their voices heard.

There were also risks that some prison staff might feel pressure to participate given that points of contact in prisons, who were usually staff in managerial roles, acted as gatekeepers for recruitment of the focus groups. Researchers sought to minimise these risks using similar strategies to those described above for PiC. Some confidence in the process is given by the fact that some staff who had been recruited to the focus groups did not turn up for the session or attended briefly to send their apologies and left again. It is recognised that other staff members might not have felt able to do this and so I took extra care during focus groups to look for and respect tacit signs of disengagement, such as a staff member choosing to make very limited contributions to the discussion, even after gentle prompting.

2.7.3 Confidentiality

Researchers collecting qualitative data must be especially attentive to issues relating to participant confidentiality, given that it is unlikely to be possible to completely remove all information that would make individuals identifiable from transcripts without rendering data unintelligible. Additional considerations in respect of confidentiality are raised on studies, like the ones underpinning the publications in this thesis, which explore sensitive topics (such as health behaviours), involve seldom heard groups (who may be particularly harmed by privacy breaches), take place within settings that involve a high degree of 'surveillance' (Abbott et al. 2018) and place obligations on researchers and other visitors to report certain information.

Several strategies were used to safeguard participant confidentiality on the qualitative elements of TIPs and the 'E-cigarettes in Prisons' studies. For privacy reasons, interviews with PiC took place in private rooms within prisons with only the researcher and participant(s) present. Staff who participated in focus groups were asked to keep the contributions of other participants confidential. Before starting interviews and focus groups, I provided PiC and prison staff with information about the study, including information relating to data use, access, storage and destruction and limits to confidentiality (see below for further information). To avoid overwhelming participants, especially PiC, a separate 'privacy notice' was developed

containing technical information on what would happen to people's information, in line with the requirements of the General Data Protection Regulation (GDPR). Participants were invited to raise and discuss any concerns about confidentiality with the researcher. During fieldwork, I was mindful of the need to avoid 'accidentally' breaking confidentiality (Wiles et al. 2006) when informally discussing the research with staff points of contact or staff who were escorting researchers around the prison. If I was asked about the study findings, I would, if appropriate, speak in general terms about emerging themes, emphasising that I was drawing on interviews and focus groups from a number of prisons to avoid staff potentially attempting to guess who had said what.

Following interviews, audio files were transcribed by professional transcription companies who had signed services agreements (covering issues such as confidentiality and data transfer, storage and destruction) with the University of Stirling or Glasgow. Researchers removed individual names and other direct identifiers from transcripts before carrying out the next steps in the analysis process. All electronic data were stored in accordance with the University of Glasgow or Stirling's information governance policies. In brief, files were kept in a secure digital project folder on the University network that could only be accessed by named members of staff. Files with identifiable data were held separately from de-identified files. Extra care was taken when preparing outputs to maintain participant privacy and confidentiality. No names were used in outputs. To keep the risks of deductive disclosure to an absolute minimum, quotes of participants' words were reviewed to assess whether any edits were required to remove identifying details, and case identifiers were randomly assigned to quotes.

It is unlikely that researchers will be in a position to provide an unqualified guarantee of confidentiality to participants and so it is important that researchers carefully consider the circumstances in which they may have to break participant confidentiality in advance of fieldwork. In prisons research, the limits to confidentiality are influenced by both regulatory and ethical obligations. When I joined TIPs, I worked with colleagues to develop the study confidentiality policy in light of the upcoming fieldwork in Phases 2 and 3, which would cover specific information about topics such as violations of smoking restrictions, the place of tobacco in informal

prison economies and contraband. Wording of the confidentiality statement was clarified ('The only time we might have to tell someone else what you say is if: (a) we believe that someone could be seriously hurt or there is a serious risk to prison security or (b) we have specific information about serious crimes or serious violations of prison rules') and written guidance was created to support the research team to manage disclosure issues, taking account of guidance from Webster et al (2014). The guidance document discouraged researchers from making decisions about disclosure on their own except in very limited circumstances (such as if the researcher believed there might be an imminent risk of harm) and, instead, asked the researcher to inform the study PI of issues at the earliest practical opportunity after leaving the prison. The document also defined key terms in the confidentiality statement and outlined factors to be considered when making decisions about whether or not to disclose information. Some revisions were made to the confidentiality statement for the 'E-cigarettes in Prisons' study ('The only time we might have to tell someone else what you say is if: (a) we believe that someone could be seriously hurt or there is a serious risk to security, (b) we have specific information about serious crimes or serious violations of prison rules and (c) we are required by law to share information').

In line with good practice (Pinta 2009), in both studies, the confidentiality statement was included in the participant information sheet and I took extra care to explain the limits to confidentiality to PiC before the start of interviews (and to prison staff prior to the focus groups). In addition, PiC were encouraged to speak about some topics (for example, contraband tobacco, misuse of e-cigarettes) in general terms and discussion was carefully managed (for example, by interjecting or moving to a new topic) to avoid accidental disclosure. On the whole the approach appeared to work well, on one hand, enabling researchers to gather data to address the study objectives, while, on the other, protecting participants from inadvertently disclosing information that the research team may have been obligated to share with the prison service.

On one occasion I felt a moral duty to make a staff point of contact aware that I was concerned about the welfare of a young person I had interviewed (I did not think it was necessary to disclose the details of what the young person had said). The staff

point of contact, who had a good relationship with the young person, thanked me for sharing my concerns and told me that she would check in on the young person later that day, and in the coming days since the young person regularly engaged with the support services the staff member was responsible for. I made the decision to share my concerns immediately rather than to wait and discuss the issue with the PI because I knew that the point of contact would be finishing their shift shortly and I did not want to risk missing the opportunity to speak to them that day. I informed the PI of the study about what had happened at the first opportunity after leaving the prison and she expressed support for the decision I had taken to safeguard the young person from potential harm.

2.7.4 Preventing harm

While it is important that PiC and prison staff have opportunities to have a say in issues that directly affect them, researchers should carefully consider ways in which people might be harmed by involvement in research. I felt it was very important to be transparent with participants about how data from the study would be used, particularly data that were collected *after* the decision to implement the smokefree prison policy had been made. Care was taken, especially when interviewing PiC in the Preparatory and Smokefree Phases, to explain that while findings would be shared with SPS and partners to support them to make decisions about how to implement and manage smokefree prisons, we did not think that a reversal in the policy was very likely, even if some PiC would like this to happen. On the whole, participants appeared to appreciate this transparency, and many still welcomed the opportunity to speak about their views and experiences on smokefree prisons/e-cigarettes in prisons. However, recruiting PiC for the study was more difficult post-implementation of smokefree rules, perhaps because PiC were generally resigned to the smokefree rules and were less able to identify tangible benefits to taking part. I am aware of one occasion when a PiC expressed concern to prison staff about whether the research team were being transparent about the study objectives. I met with the PiC to give them the opportunity to express their concerns. After talking the PiC through the participant information sheet and explaining how data would be used, s/he became more cordial and indicated that s/he felt somewhat reassured about how the study was being conducted. However, s/he suggested that prison staff

should always give PiC the participant information sheet when inviting them to have the interview (which is something we had asked to happen, but there were clearly occasions when it had not).

I recognised that the topics being explored during interviews and focus groups were potentially sensitive, difficult and emotive for some PiC and staff. For example, prison staff might have felt frustrated or annoyed by rules permitting PiC to smoke or vape in prison while, in contrast, PiC might have held similar feelings about implementation of smokefree prison policies. Consistent with good practice (Webster et al. 2014), I used several strategies to minimise potential emotional risks to participants, including taking care to explain the topic areas covered in interviews/focus groups as part of the consent process, taking care to phrase questions and order the discussion of topics to make participants feel at ease, and being attentive to signs of potential discomfort or distress and trying to respond appropriately and with compassion (for instance, by encouraging PiC to discuss issues with prison or healthcare staff, rather than offering guidance or advice).

Potential physical and emotional or psychological risks to the research team were also carefully considered when conducting the research studies. When I joined the TIPs research team, I worked with the study PI to review and expand fieldwork safety procedures in advance of fieldwork with PiC and prison staff on TIPs Phases 2 and 3 and the 'E-cigarettes in Prisons' study, drawing on my prior experience of conducting research in criminal justice settings while at NatCen. Several strategies were implemented to minimise risks to researchers. First, researchers were required to complete SPS safety and security training and were briefed by colleagues on what to expect when conducting research in prison settings, prison rules for visitors (e.g. on what can be brought into prisons), the study's fieldwork safety procedures, and fieldwork logistics, which varied between prisons and was dictated by local policies and regimes. Second, researchers visited prisons either individually or in pairs depending on the location of the prison, number of interviews, personal preferences of individual fieldworkers and their prior levels of experience of working in prisons. Researchers were advised to take sensible precautions when travelling to and from prisons and to contact a named member of the research team to 'check in' and 'check out' at the start and end of each day of fieldwork. Third, researchers were

required to follow the instructions of prison staff at all times when in prisons, were advised on personal safety strategies and reminded that personal safety should always be prioritised over collection of research should any problems arise. Finally, researchers were encouraged to debrief with other members of the project team and to raise any health and safety concerns with the PI or AB so that appropriate actions could be taken.

Chapter 3. Prison staff and prisoner views on a prison smoking ban: evidence from the Tobacco in Prisons study (Publication 1)

3.1 Introduction

Stakeholder acceptance or support is critical to the successful implementation of smokefree prison policies (Collinson et al. 2012; Hefler et al. 2016). Yet prior to TIPs, few studies had explored in detail staff and PiC's views on smokefree prison policies, resulting in a dearth of evidence to inform and support decision making and planning in jurisdictions contemplating changes to prison smoking rules. This study sought to address this gap by exploring prison staff perspectives on (then) ongoing discussions about whether and if so how to introduce a new, stricter smoking policy for PiC in Scotland. Results from the contemporaneous TIPs Phase 1 surveys of prison staff and PiC are also presented in this publication. Data were collected in Phase 1 of TIPs, before any decision to implement comprehensive smokefree prison policies in Scotland had been made or announced. At that time, PiC were permitted to smoke in designated rooms (cells) and specified outdoor areas and staff were prohibited from smoking anywhere on prison grounds. The use of e-cigarettes in prisons among both PiC and staff was not permitted.

Publication 1 aims to contribute evidence towards two of the thesis RQs:

- **RQ1:** What views on smokefree prison policies are held among prison staff? What are the reasons for support or opposition to smokefree prison policy among prison staff?
- **RQ3:** What views on smokefree prison policies are held among PiC? What are the reasons for support or opposition to smokefree prison policy among PiC?

Publication 1 is available at: <https://doi.org/10.1093/ntr/nty092>. Brief information about publication history can be found with the online version of the publication.



Original investigation

Prison Staff and Prisoner Views on a Prison Smoking Ban: Evidence From the Tobacco in Prisons Study

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Abstract

Introduction: In jurisdictions permitting prisoner smoking, rates are high (c75%), with smoking embedded in prison culture, leading to secondhand smoke exposures among staff and prisoners and challenges for smoking cessation. Momentum is building to ban smoking in prisons, but research on staff and prisoner views is lacking. We address this gap, providing evidence on staff and prisoner views throughout all Scottish prisons.

Methods: Data were collected prior to the announcement of a (November 2018) prison smoking ban throughout Scotland. Mixed methods were used: surveys of staff (online, $N = 1271$, ~27%) and prisoners (questionnaire, $N = 2512$, ~34%); 17 focus groups and two paired interviews with staff in 14 prisons.

Results: Staff were more positive than prisoners about bans and increased smoking restrictions, although prisoner views were more favorable should e-cigarettes be permitted. Nonsmokers were more positive than smokers. Whilst 74% staff and 22% prisoners agreed bans were a good idea, both groups acknowledged implementation and enforcement challenges. Staff views were influenced by beliefs about: acceptability of the policy in principle and whether/how bans could be achieved. Although some voiced doubts about smoke-free policies, staff likened a ban to other operational challenges. Staff raised concerns around needs for appropriate measures, resources and support, adequate lead-in time, and effective communication prior to a ban.

Conclusion: We recommend that regular and open opportunities for dialogue within and between different stakeholder groups are created when preparing for prison smoking bans and that specific measures to address staff and prisoner concerns are incorporated into plans to create and maintain smoke-free environments.

Implications: To our knowledge, this study is the first to research staff and prisoner views across a whole prison system prior to implementation of smoke-free policies. The results highlight potential challenges and suggest measures, which might help to maximize the success of bans. Our results are relevant for prison service managers responsible for the forthcoming introduction of a ban in Scottish prisons (November 2018) and for other prison systems and comparable institutions planning smoke-free initiatives. Given that prison smoking bans may be contentious, we recommend creating regular and open opportunities for dialogue between stakeholders when preparing for and maintaining smoke-free environments.

Introduction

Smoking bans decrease exposure to secondhand smoke (SHS).¹ In the United Kingdom, prisons had partial exemption from smoke-free legislation introduced in 2006/7. In the absence of smoke-free policies, prisoner smoking rates remained high and have been described as “one of the most pernicious public health problems affecting prisons...all too often...ignored [in] community based tobacco control policies.”² The 2015 national biannual survey of prisoners in Scotland reported that 72% smoke,³ three times the national average and in line with figures for Europe (“64 to 88%” according to a European Commission report⁴), with little evidence of the reductions in smoking seen in the general population. This high prevalence partially reflects rates in deprived and socially excluded communities⁵ from which prisoners are disproportionately drawn. However, imprisonment can lead to uptake of, or increased, smoking,^{6–11} and high rates of smoking are reflected in high SHS levels within some prisons.^{12,13}

WHO considers “there is no safe level of exposure to second-hand tobacco smoke,” citing evidence that SHS increases the risk of CHD, lung cancer, breast cancer, and respiratory symptoms and illnesses in adults, and, for those exposed during pregnancy, of low birth weight and preterm delivery.¹⁴ Both prisoners and staff (particularly those entering/opening prisoners’ cells) are potentially at risk and SHS exposure in prisons has attracted concern internationally. Momentum is building throughout the United Kingdom, as elsewhere (eg, Australia,⁴ USA¹⁵), to increase tobacco control or completely ban smoking in prisons, to improve staff and prisoner health and address health inequalities,^{16,17} although it has been suggested that smoking bans have been motivated “less by public health concerns than by fear of lawsuits from institutional staff and other inmates.”¹⁸ Several jurisdictions have implemented total smoke-free policies (ie, all indoor and outdoor areas) across their prison estate. New Zealand was the first to introduce total smoke-free prison policies country-wide in 2011,^{19,20} and measurements of indoor air quality in one prison before and after implementation showed “rapid and substantial” improvements.²¹ A systematic review which included three studies evaluating the cessation outcomes of an indoor smoking ban and seven (all United States) of complete smoking bans concluded that “a complete smoking ban (rather than partial ban) can effectively interrupt smoking behaviour”²² and an analysis of US data found prison tobacco control policies are associated with reduced mortality.² In the United Kingdom, total smoke-free policies were adopted by Broadmoor Secure Hospital in 2007, the Scottish State Hospital in 2011, Welsh prisons from January 2016, and at early adopter (and subsequently many more) prisons in England from March 2016. In July 2017, informed by evidence on SHS in Scottish prisons,¹³ the Scottish Prison Service (SPS) announced that Scotland’s prisons will be smoke-free from November 2018.

It is widely recognized, however, that making prisons smoke-free presents particular and considerable challenges. Butler described tobacco smoking as “an integral part of prison life and an established part of the prison culture,” serving a range of functions “as a surrogate currency, a means of social control, as a symbol of freedom in a group with few rights and privileges, a stress reliever and as a social lubricant.”¹⁷ Cigarettes can thus represent a means of dealing with the challenge of “killing time” and tobacco-based products offer prisoners “cultural capital to buy and exchange items; favours and protection,”²³ as an alternative²⁴ currency. The decision to smoke (or not) has been described as “one of the last functions that the inmate has control over”²³ and its removal raises concerns about

prisoner unrest.^{25,26} These concerns, rather than public health gains, have dominated much media coverage around the introduction of smoke-free prisons.²⁷

To maximize the success and enforceability of smoke-free prison policy, it is crucial to understand how tobacco and smoking restrictions are viewed prior to, and in anticipation of, any policy change. To date, qualitative research on the meaning of smoking in prisons, and particularly on how this changes in the context of increased restrictions, is sparse. Two smaller^{28,29} and one larger qualitative studies,³⁰ all conducted in the United States following the implementation of a partial/complete prison smoking ban, have noted the importance of policy “buy-in,” staff support and access to NRT. These studies reported the possibility of positive prisoner attitudes to a ban, while also highlighting the way in which a largely benign tobacco “market” can become problematic post-ban. However, no studies have undertaken a comprehensive overview of staff and prisoner views across a prison system.

We have addressed these gaps in research by presenting data from Phase 1 of the Tobacco in Prisons study (TIPs), a three-phase evaluation of the transition towards and implementation of smoke-free prisons in Scotland.³¹ Phase 1 data on objectively measured SHS from all 15 prisons are presented elsewhere.¹³ Here, we document the views of both prisoners and staff, drawing on survey and focus group/paired interview data collected several months prior to the announcement that Scotland prisons would be smoke-free from November 2018.

Methods

TIPs Phase 1 data collection was designed to establish baseline values for smoking and cultural/social norms, in addition to levels of SHS,¹³ health indicators, and provision and experience of smoking cessation services, across all of Scotland’s 15 prisons. Phase 2 is ongoing and entails a process evaluation of initiatives, events, and changes in the period leading to implementation; Phase 3 will evaluate the impact of smoke-free policies.

Staff perspectives on smoking in prisons, smoking regulations, and smoking bans were collected via focus group discussions/paired interviews and an online questionnaire. Prisoner views were obtained via paper questionnaires. At the time of the data collection, prisoners were allowed to smoke in designated cells and outdoor spaces; staff and visitors were prohibited from smoking anywhere on prison grounds.

The protocol and study tools were approved by the Scottish Prison Service (SPS) Research Access and Ethics Committee and University of Glasgow’s College of Social Sciences Ethics Committee in August 2016 (ref number: 400150214). Research is independent of the SPS and Scottish Government; results are being fed back on an ongoing basis to all key stakeholders (eg, survey results feedback to the SPS TIPs Research Advisory Group, prisoners, staff, prison governors) to inform progress towards implementation.

Staff and Prisoner Surveys

An invitation and link to the online staff questionnaire (live 1st November to 16th December 2016), plus reminders, were sent to an appointed contact within each prison who agreed to make this available to all prison officer, managerial and support staff within their prison. The questionnaire included sections on staff smoking, health, perceived SHS exposure, and opinions on smoking in prisons and prison smoking bans. The opinions items (detailed in Tables 1

Table 1. Prison Staff Opinions (% Agreeing/Strongly Agreeing) With Statements About Smoking in Prisons and Prison Smoking Bans, Overall and by Smoking Status

	Overall		According to smoking status - %			
	N/N	(%)	Current	Ex	Never	(sig)
How much do you agree with these statements about smoking in prisons? (five answer options collapsed to binary categories for analysis, "strongly agree" and "agree" vs. "no opinion," "disagree," and "strongly disagree")						
Prison staff should be protected from cigarette smoke at work	1218/1270	95.9	82.1	96.6	98.2	(<0.001)
Prisoners who do not smoke should be protected from cigarette smoke	1206/1265	95.3	81.3	95.5	98.2	(<0.001)
There should be more NHS support for prisoners who want to stop smoking	879/1268	69.3	55.3	67.1	74.6	(<0.001)
Prisoners who smoke should not be forced to stop smoking	490/1268	38.6	68.0	42.0	28.8	(<0.001)
Prisoners who smoke are unlikely to ever stop long-term	537/1266	42.4	46.3	38.4	45.7	(0.028)
Smoking should not be allowed in any indoor areas of prisons	989/1259	78.6	42.1	75.6	89.5	(<0.001)
Smoking should not be allowed in any outdoor areas of prisons	480/1269	37.8	14.6	32.5	48.4	(<0.001)
You have probably heard that smoking is no longer allowed in any areas (inside and outside) in prisons in some countries around the world like Canada, New Zealand, and Wales. What do you think of prison smoking bans like these? (five answer options collapsed to binary categories for analysis, "strongly agree" and "agree" vs. "no opinion," "disagree," and "strongly disagree")						
Prison smoking bans are a good idea	937/1268	73.9	35.0	69.1	87.4	(<0.001)
Prison smoking bans cause a lot of trouble (eg, prisoner fights, rioting, tobacco smuggling)	737/1269	58.1	75.4	60.7	51.7	(<0.001)
Prison smoking bans help prisoners stop smoking long-term (and after release)	640/1269	50.4	29.3	48.0	57.5	(<0.001)
Prison smoking bans are hard to enforce	780/1266	61.6	72.1	66.8	53.9	(<0.001)
Most prison staff want smoking bans	788/1269	62.1	36.6	55.4	74.6	(<0.001)
Prison smoking bans are OK if enough stop smoking support is available to prisoners	849/1266	67.1	40.2	64.7	75.3	(<0.001)
Prison smoking bans are OK if prisoners are allowed e-cigarettes or vapes	451/1270	35.5	36.6	37.0	33.7	(0.476)
Would you be in favor of increased smoking restrictions in Scottish prisons? (three answer options collapsed to binary categories for analysis, "in favour" vs. "no opinion" and "against")	1004/1271	79.0	35.0	77.5	90.1	(<0.001)

and 2) were adapted from: a US survey of prison staff on restrictions to smoking in prisons;³² an Australian study of staff experience and attitudes to implementation of a smoke-free policy in a high security mental health in-patient facility;³³ a Swiss survey of staff and patient attitudes to implementation of a smoke-free policy in a psychiatric hospital;³⁴ and a Scottish study of bar workers' attitudes to smoke-free public places legislation.^{1,35}

Results presented here are based on responses from 1271 prison-based staff (estimated 27% return) and include descriptive and bivariate analyses. The proportion of male respondents (71%) was identical to that of SPS staff overall.³⁶ The proportion of smokers was somewhat lower (10% current, 23% ex, and 67% never/never regular smokers) than Scottish adults (21%, 25%, and 54%, respectively).³⁷

Paper-based questionnaires (covering similar topics to those asked of staff) were distributed by TIPs research staff in three prisons; in the remaining 12 prisons questionnaires were handed to prisoners by prison staff at evening lock up and collected in sealed envelopes (to protect confidentiality) the next morning.

Descriptive and bivariate analyses of 2512 completed prisoner questionnaires (estimate 34% response) are presented. The proportion of smokers (74%) amongst prisoner responders was almost identical to that of prisoners overall (72%).³

Focus Groups (and Paired Interviews)

From 14 prisons, 132 Scottish prison staff participated in a total of 19 qualitative data collection encounters (November 2016–April

2017). This included 17 focus groups and, for operational reasons, two paired interviews; on these two occasions, other staff were unable to attend at short notice and we proceeded to allow the people who came the opportunity to express their views. We indicated to "gatekeepers," who facilitated recruitment within each prison, that we wished to include smokers and nonsmokers: 78 never smokers (NS), 27 ex-smokers (Ex), and 14 current tobacco cigarette or e-cigarette users (S) participated in focus groups (smoking status for 13 participants not known (NK)).

Focus groups (range = 5–12 participants; mode = 6) and paired interviews were led by a TIPs researcher using a topic guide which included sections on smoking and exposures to SHS, particularly within prisons; smoking norms and perceived prevalence within the prison; the "culture" of smoking within prisons; management of nicotine addiction (including e-cigarettes) in prisons and wider society; and restrictions on smoking and opinions on these. The topic guide was designed to achieve an appropriate level of consistency for qualitative data collection; question wording was not prescribed. Participants were reminded that the researchers were independent of the SPS and Scottish Government, encouraged to express themselves freely and honestly, and invited to raise any points or views, which they thought to be pertinent. Discussions were audio recorded and transcribed verbatim with participants' written consent; transcripts were reviewed for accuracy against the audio files and anonymized prior to data analysis. TIPs researchers who had conducted fieldwork read transcripts and agreed to a descriptive coding scheme: general tobacco

and bans; prison bans; smoking culture in prisoners; smoking culture in staff; SHS exposures; e-cigarettes; quitting, alternatives, and cessation; operational, organizational, and local issues; Wales, England, and elsewhere; Scottish Prison Service and Scottish Government; and TIPs research. All transcripts were organized according to this coding scheme. Outputs from the "prison bans" code were then managed using the framework approach, facilitated by Nvivo software (QSR International). This process involved producing data summaries for every piece of coded data. Data summaries were displayed in a matrix format to facilitate analysis within and between focus groups/paired interviews. Data were thematically analyzed, ensuring that attention was paid to the range and diversity of views. Analytical summaries were compiled and reviewed in detail by at least one additional member of the authorship team and findings were checked by each member against a sub-sample of the transcripts. Illustrative extracts indicate the prison, focus group and speakers' smoking status, for example, KA04 = prison K, group A, participant 04; NS = nonsmoker, Ex = exsmoker, S = smoker, NK = smoking status not known. Codes were randomly allocated to prisons by the research team.

Results

Levels of Staff and Prisoner Support for a Prison Smoking Ban: Survey Data

The percentage of staff and prisoners agreeing or strongly agreeing with a series of statements about smoking in prisons and comprehensive indoor/outdoor prison smoking bans (hereafter referred to as "prison smoking ban") are shown in Tables 1 and 2. Perhaps unsurprisingly, staff indicated higher support for protection (for staff and prisoners) from SHS, restrictions of smoking, and smoking bans

than prisoners. Thus almost all staff (strongly) agreed both that staff (96%) and nonsmoking prisoners (95%) should be protected from cigarette smoke whereas equivalent figures for prisoners were 55% and 68%; most staff (79%) but only a quarter (24%) of prisoners favored increased smoking restrictions in Scottish prisons; and, similarly, 74% of staff but only 22% of prisoners (strongly) agreed that "prison smoking bans are a good idea." However, support for increased restrictions varied by smoking status in both staff and prisoners (as did almost all statements related to smoking in prisons), and were notably more positive among never smoking staff and prisoners (90% and 67%, respectively), than among current smoking staff and prisoners (35% and 11%). Nonetheless, many staff (58%) and most prisoners (81%) (strongly) agreed that "prison smoking bans cause a lot of trouble" and around two-thirds (62% staff, 65% prisoners) that bans may be "hard to enforce." Notably, almost half of prisoners, irrespective of smoking status, (strongly) agreed that prison smoking bans "are OK if prisoners are allowed e-cigarettes or vapes."

Reasons Staff Supported or had Doubts About a Prison Smoking Ban

Analysis of the staff focus group/paired interview data suggested that perceptions of prison smoking bans were influenced by: (1) beliefs about whether a ban was acceptable in principle and (2) views on whether a ban could be successfully achieved. These are discussed below.

Beliefs About Whether a Ban was Acceptable in Principle

Views on whether a smoking ban was a fair and justifiable policy varied. Prisons were discussed as "homes" as well as workplaces, and

Table 2. Prisoner Opinions (% Agreeing/Strongly Agreeing) With Statements About Smoking in Prisons and Prison Smoking Bans, Overall and by Smoking Status

	Overall		According to smoking status—%			
	N/N	(%)	Current	Ex	Never	(sig)
How much do you agree with these statements about smoking in prisons? (five answer options collapsed to binary categories for analysis, 'strongly agree' and 'agree' vs. 'no opinion', 'disagree', and 'strongly disagree')						
Prison staff should be protected from cigarette smoke at work	1337/2414	55.4	46.1	78.9	84.9	(<0.001)
Prisoners who don't smoke should be protected from cigarette smoke	1644/2411	68.2	60.1	88.3	94.2	(<0.001)
There should be more NHS support for prisoners who want to stop smoking	1836/2404	76.4	76.5	74.7	77.6	(0.684)
Prisoners who smoke should not be forced to stop smoking	1900/2421	78.5	87.2	59.2	46.9	(<0.001)
Prisoners who smoke are unlikely to ever stop long-term	1042/2416	43.1	45.3	31.7	41.9	(<0.001)
Smoking should not be allowed in any indoor areas of prisons	1066/2408	44.3	33.1	68.6	84.5	(<0.001)
Smoking should not be allowed in any outdoor areas of prisons	432/2411	17.9	12.7	24.6	41.2	(<0.001)
You have probably heard that smoking is no longer allowed in any areas (inside and outside) in prisons in some countries around the world like Canada, New Zealand, and Wales. What do you think of prison smoking bans like these? (five answer options collapsed to binary categories for analysis, "strongly agree" and "agree" vs. "no opinion," "disagree," and "strongly disagree")						
Prison smoking bans are a good idea	542/2415	22.4	10.2	48.8	67.1	(<0.001)
Prison smoking bans cause a lot of trouble (eg, prisoner fights, rioting, tobacco smuggling)	1954/2407	81.2	87.8	65.8	58.6	(<0.001)
Prison smoking bans help prisoners stop smoking long-term (and after release)	495/2394	20.7	14.3	34.8	43.6	(<0.001)
Prison smoking bans are hard to enforce	1545/2397	64.5	65.5	58.4	64.6	(0.047)
Most prison staff want smoking bans	782/2390	32.7	29.6	40.4	42.7	(<0.001)
Prison smoking bans are OK if enough stop smoking support is available to prisoners	877/2393	36.6	27.6	59.9	64.9	(<0.001)
Prison smoking bans are OK if prisoners are allowed e-cigarettes or vapes	1158/2395	48.4	47.7	49.7	50.3	(0.620)
Would you be in favor of increased smoking restrictions in Scottish prisons? (three answer options collapsed to binary categories for analysis, "in favour" vs. "no opinion" and "against".	564/2395	23.5	11.3	50.0	67.1	(<0.001)

concerns raised about restricting prisoner smoking while tobacco remains a legal substance in wider society.

(KA03[NS]) *"Me personally, I'm a non-smoker, I'm an anti-smoker, I think it's disgusting...but to say to somebody, you're not getting to smoke in your own home, and it is their home, it's their cell, sort of thing, I know it's complicated with staff have got to access that as well, but I think it's going to be a very, very difficult thing to justify... especially when it's still a legal substance."*

Some staff thus regarded smoking as an unpleasant but expected hazard of working in a prison environment, as illustrated below:

HA02[S] *...I understand the workplace ban...but this isn't a normal job...I mean some of the stuff that comes your way working in this job you wouldn't choose and you don't welcome and all the rest of it, but it comes. It's a risk and we manage that risk.*
 HA05[NS] *...Working in [a prison] is totally different... people say it's your place of work, aye it's my place of work but it's nothing like any other job...*

Nonetheless, some voiced a need for alternative measures to limit SHS exposure, such as improved ventilation, and greater efforts to help prisoners to quit smoking.

By contrast, other staff expressed very strong views that SHS exposure at work was unacceptable, given its detrimental effect on health. Staff often described how tobacco smoke within prisons was unpleasant, even offensive, to experience. Some commented on the "disgusting" smell of smoke in prisons and complained how it could linger on hair and clothes after leaving work:

EA05[NS] *"I go home from work and my husband will say oh you stink. And you don't realise until you come out of the environment and when you don't smoke and no one in your house smokes it's horrible, your clothes are absolutely reeking, it's really bad."*

Some groups voiced a sense of injustice that prison staff were not afforded the same legal protection from SHS as other workers, frustration with the decision to partially exempt prisons from smoke-free legislation introduced in Scotland in 2006, and a perception that there was insufficient regard to staff welfare:

BA03[NS] *...the government says there's no safe secondary smoke anywhere, but yet they're quite content for every Scottish prison officer to go in that environment every day they're at their work... it's a routine part of their job but it's an expected part... and that's wrong...*
 BA01[Ex] *Well the thing that's wrong is the fact that we work in the only workplace where we're expecting them to smoke and nobody else is expected to do that and that's what's wrong.*
 BA07[NS] *There's nobody. Can't think of anybody*

Furthermore, the complete prohibition on staff, but not prisoner, smoking on SPS premises was described by some as unfair.

Views on the Degree to Which a Ban Could be Successfully Achieved

All groups/paired interviews discussed whether and how a smoking ban could be successfully achieved in a prison environment if policies were to change, and views were again mixed. Current prison smoking culture, including perceptions that prisoners smoke in part to alleviate stress, anxiety and boredom, and possible defiance of a ban by prisoners unwilling or less able to quit smoking, were

recognized as potential barriers to implementation. Implementation was expected to be particularly difficult for certain groups, such as new admissions and prisoners on remand or with mental health problems or drug addictions:

LA05[NS] *"I struggle to see how we can be completely smoke free, because we've got prisoners in here that have been here for 20 years [who have] absolutely no interest in stopping smoking, guys that's coming in on remand from the community, might only be here a few weeks, they've been smokers, they're not going to quit within a few weeks..."*

In contrast, reasons for believing a ban "could" be successfully implemented included the widespread public acceptance of tobacco restrictions in enclosed spaces, despite initial doubts about the policy, and introduction of bans in other challenging environments such as mental health hospitals. Thus, many staff believed prisoners would adapt to the ban, as they did to other prison rules, as illustrated in the following exchange in which a member of staff draws a parallel between the management of prisoners addicted to illegal drugs and those addicted to tobacco:

CA07[Ex] *Because you could stop it in the jails, and everybody that's been in the jail a while will get used to that. But if you've got somebody coming in for the first time, off the street, who's a heavy smoker, how do we deal with that?*
 CA03[NS] *They're in a high stress situation, first time in jail, they're maybe missing their families...they've got mental health issues, drugs... And then you've got to take their tobacco off them.*
 Interviewer: *So you think that's almost like the last 'domino', yeah.*
 CA03[NS] *Yeah, well, they'll either hurt themselves, or try and hurt us, or hurt somebody else*
 CA06[NS] *... I totally agree with what you're saying... But then, at the same time, for those that are [addicted to] heroin, or cocaine... I know we have the detox, and methadone, but...they're still not gonna get the same level, and they guys have to deal with it*
 CA07[Ex] *That's right.*
 CA06[NS] *Because we can't give them the illegal drugs that they're used to... So it's the same thing, it's an addictive substance*

All groups/paired interviews expressed concerns about potential negative consequences of a ban. These included: increased prisoner distress, self-harm, and suicide; episodes of unrest, violence, or riots; greater risks of physical or psychological harm to staff; creation of tobacco as contraband and associated problems such as smuggling, bullying, and debt; and use of alternatives (such as illicit tobacco, smoking tea bags, taking illegal substances) and associated problems such as using exposed wires from kettles as an ignition source. The extracts in **Box 1** illustrate these concerns.

Nonetheless, some staff stated that such potential risks were not sufficient reason to reject smoking bans given the significant benefits to staff and prisoner health that could be achieved through making prisons smoke-free. Some challenged the view that major incidents, such as riots, might occur, as illustrated in the following extract where several participants agreed that a ban should be introduced despite any short-term difficulties it might create:

GC13[NS] *...all you need to look at a...night in here right before they have got their canteen [shop from which prisoners can buy items]...and they have ran out of tobacco...it is a different shift in here... So, if you banned it...of course there would be issues, but I personally don't think that that should be a reason to stop going ahead with it...*
 GC14[NS] *To stop it, no.*

Box 1: Staff views on potential unintended consequences of a ban

Risks to prisoners and prison staff

"It would make a nicer working environment for us, but is that worth the backlash that would come as a result of that? It might make it a nicer place to work, but would it make it as safe a place to work? That's what you'd have to weigh up, because it might affect your health in a different way." (KA04[NS])

"Some prisoners who are just on the verge of taking their own lives, who can't smoke...if they can't smoke, how do we calm them down? If they've got nothing there to calm them down, it could tip them over the edge. So suicides will go up." (NA06[NS])

Prisoner unrest

"There's gonna be so many positives to it, with the ban, but there's gonna be so many negatives, like you were saying, concerted [in]discipline in, obviously, your adult jails..." (CA06[NS])

"This blanket ban of smoking isn't taking into account any of the ripple effect that it's going to have, let alone the trouble it's going to cause. Eventually we'll manage the trouble in prisons like we've done before but it's all the other things it's not quite taking into account." (CA02[S])

Contraband and associated problems

"... [if] we ban [tobacco] completely...It'll still be smuggled in. It'll become even more of a commodity than it is now..." (FA03[NS])

"I think you will also get an increase in the extent of bullying, because you have another commodity that's become more valuable because you've made less of it, and.... I think you'll increase in vulnerability because prisoners will be getting bullied for the tobacco, or even if they don't smoke, they'll be told, you will be buying tobacco for me this week at the canteen." (LA04[NK])

Alternatives to tobacco, lighters and matches

"A blanket ban on smoking I can think of the knock-on effect of that. Everything from the health issues if guys are smoking cannabis which use tobacco, what will they do? They'll move on to harder drugs, I'll guarantee it." (DA01[S])

"...when some of our prisons haven't got tobacco in the halls here, they'll smoke teabags. They've got to smoke something and the smell of tea bags, it's actually worse than tobacco." (HA03[N])

GC13[NS] ...because [there's] so many other risks to other people if you let them continue to smoke. So, I think obviously there would be problems, there would be potentially big problems, but I think eventually you would manage to get a grip of it and that's a personal opinion.

GC14[NS] I'm with you...I think there's always problems.

GC13[NS] It's easy you can hide behind the fact that...if we stop this...this is going to be happening in jail, your job is going to be harder. I accept that, but I don't think you can hide behind that...

Perceptions That a Ban was Inevitable

Staff perceived that, sooner or later, a ban was inevitable, not least because of Government aspirations to make Scotland smoke-free by 2034.¹⁶ In this context, staff spoke pragmatically about a ban, likening the task of implementation to other challenges faced at work. Thus, it was often stated in exchanges of simple "facts" that staff had the experience to "deal with" any problems associated with a ban, as they did with other challenges:

AA05[S] ... it will be implemented and do you know what, it'll be dealt with...

AA06[NS] We'll deal with it 'cause you've got to.

AA05[S] ...and within a month it'll be in and it'll be no different. It's like everything else. People stand up against it and they say this and they say that and do you know what, it just goes through and it gets done and before you know it, you're going [saying], "Remember you used to smoke in jails!"

AA06[NS] ...it's going to happen.

AA05[S] And it'll happen and it'll be done.

AA06[NS] And we'll deal with it.

AA07[S] Exactly.

Staff Views on Factors Important to Successful Implementation of a Future Ban

When asked what might contribute to successful implementation of a future smoking ban in Scottish prisons, staff identified several facilitators. These were: sufficient lead-in time; proactive and supportive management of the policy; adequate funding and other resources; effective consultation and communication with staff and prisoners; adequate prisoner smoking cessation support and measures to manage nicotine withdrawal; potentially piloting a ban prior to wider roll-out where appropriate; and learning from other jurisdictions which have gone smoke-free. These views are illustrated in Box 2.

However, there was debate between staff over the details of how a future ban should be implemented. For example, there was no obvious consensus on an optimum timescale from announcement to implementation. Suggestions generally ranged around 6–18 months, but some believed that 5 or more years' preparation would be needed, whereas others, particularly those expressing a high degree of support for a smoking ban, called for a much shorter timescale (eg, days/weeks), likening exposure to SHS to other workplace hazards:

DA05[NS] ...if this was asbestos we were talking about, would we say we're going to wait another six months before we do anything about it? No, they would be shutting down this building... they'd be putting up special measures, control measures in place...

Others in this group, while recognizing the need to protect staff from SHS, favored a longer lead in time to ensure adequate cessation support for prisoners was in place:

Interviewer [addressing different group members who had expressed opinions on time scale] Are you saying "Monday", and you're saying "Maybe six months"?

DA05[NS]: I don't think opinions come into it. It's a matter of law.

DA03[NS]: I think you need to give folk time to be... prepared to actually support folk and be able to do it. It's an addiction that they've got and that has to be considered...we're still a caring profession although we should be caring for our staff and I totally agree with that...

DA05[NS]: Yes, we come first.

Box 2: Factors important to successful implementation of a future ban*Sufficient lead-in time*

"There would need to be a...reduction...not just...the ban's coming in tomorrow. It'd need to be plenty of time, people being told, here's the alternatives...essentially it would be a new sort of education for people...to say...come 18 months' time you will not be allowed to smoke tobacco within anywhere in the jail. (IA11[S])

Proactive and supportive management of the policy

"...as long as you get the back up from the governors and management and says, right okay, we'll deal with this. This might cause problems for the next six months, but we'll deal with it because this is the way forward - we are not deviating from this. It is now a non-smoking jail. That's it." (GD04[N])

Adequate funding and other resources

"...if you did put a blanket ban on smoking inside the jail... if we were allowed to, we could be robust and strict, and we could...possibly prevent any major incidents of indiscipline. But we would need to be supported in that, we would need to be given the time, and we'd need to be given the resources to be able to deal with that." (EA03[Ex])

"Where do then the cuts come from for everything else, like let's try and manage the system that we have just now, find some money to do that before we like absolutely take this off the table, because the [health services] don't have the money..." (KA05[S])

Effective consultation and communication with staff and prisoners

The communication part is key...In custody, great, but it also has to be outwith custody, in police cells, court houses... So that they're aware it's happening, that kind of seed is planted. (JA14[N])

"...staff quite often...things get handed down from on high...I think it's really important that staff are involved at every stage, in what the alternatives might be". (N04[NK])

"...get the staff buy-in and say, right, this is what we're wanting to do, you guys are at the coalface, so to speak Will this work and if not, why won't it work and what do we need to do to make it work? (MA02[NS])

"...I think...we have to try and make [prisoners] an important part of it, and say we're not doing it because we are particularly fed up with opening doors and being stinking, but we're actually more concerned that you are looking after your health." (IA11[S])

Adequate prisoner smoking cessation support and withdrawal management

"I think, an admission process...is the key. Because you're expecting somebody with an addiction, in the community, to then come into an area where, until such times as addiction recovery or support is put in place, they're coming in and having to do cold turkey." (CA01[NS])

Box 2: Continued

"...a cigarette can really help them calm down and if they're then told they're not allowed to smoke and here are some patches, maybe an e-cig would be a good compromise because it would be a good similarity." (MA01[Ex])

"They're going to have to employ far more counsellors or people that are trained in trying to help people stop smoking... they're going to have a lot more than four folk dealing with it." (EA04[NS])

Potentially piloting a ban

"...Small steps. If you're going to introduce something like this, it has to be small steps. Trial, did that work? No. What do we do next? It has to be introduced gradually." (HA02[S])

Learning from other jurisdictions which have gone smoke-free

"If they can come up with what other people have done, take all the best bits from other people's mistakes, and then say, right this is what we've gonna do." (NA01[NS])

There were also diverse opinions on the need to phase in a ban prior to wider roll-out, either within designated residential areas of a single prison (eg, introducing voluntary smoke-free wings) or in designated prisons (eg, piloting of a smoking ban). In the following extract, staff discuss the pros and cons of introducing voluntary smoke-free wings after one participant suggested the idea:

GC14[NS]: Can staff volunteer to work in that environment?
GC11[S]: That would be it that would be the downside, somebody has got to work in the scabby smoking area.

[Conversation shifts topic, then returns to smoke-free wings]

GC16[NS]: I think it would be a good idea...if you maybe started off at the beginning by saying... 'This is a no smoking area'...see how the uptake was on [prisoners] wanting to go there and how it went...
GC14[NS]: But...how many people [prisoners] would manipulate that as well just to get a single cell...
GC13[NS]: But, I mean as soon as you caught anybody smoking in there [smoke-free wing] then they are shipped straight back. ..You would just say, "Right, well that's you, you're back then!"

Finally, there were discussions about the desirability or otherwise of introducing e-cigarettes into prisons as an alternative to tobacco. This issue is considered in more detail elsewhere; in brief, some staff regarded e-cigarettes as important to policy success, whereas others expressed concerns about their implications for staff and prisoner health and organizational safety.

There was some uncertainty about the extent to which adequate measures and support, as described above, would be in place prior to introduction of a ban in Scottish prisons. Specific fears were raised in respect of the need for: effective leadership of a ban (eg, sufficient consideration and management of risk); implementation strategies suited to local context (eg, adequate preparation time and avoidance of unnecessary delays in introducing a ban); and ways of working around constraints on public spending or the complexities of financing the support needed to help prisoners manage withdrawal and quit/abstain from smoking.

Discussion

To our knowledge, this study is the first to research both staff and prisoner views across a country's prison system prior to the announcement, or implementation, of a prison smoking ban. Using mixed methods, we found that opinions on a smoking ban differed between staff within and between prisons, between prisoners and staff, and also by smoking status. Focus groups and paired interviews with prison staff revealed that opinions were influenced by differing interpretations of: the legitimacy of restricting a prisoner's freedom to smoke; the obstacles posed by current prisoner smoking culture; and the trade-off between health improvement and protection, potential physical and psychological risks to prisoners and staff, and threats to prison discipline. Consistent with previous studies,^{19,38} staff thought the success of prison smoking bans might depend on good governance and leadership; adequate time, support, and resources; good stakeholder communication and engagement; and effective management of nicotine addiction.

Strengths of this study include collection of data from staff and prisoners in all Scotland's prisons, representing a range of prison environments and populations. However, the overall return rates to the staff and prisoner surveys were 27% and 34%, respectively. Thus, a degree of caution is required when generalizing from our results to the population of Scottish staff and prisoners. Although the sampling and recruitment approaches used for the questionnaires and focus groups were dictated by ethical, logistical, and operational considerations, and devised after extensive consultation with TIPs' SPS-convened Research Advisory Group (which included representation from management, government, legal and health and safety staff, residential staff and union members), we recognize that participants were recruited using convenience sampling; those who volunteered to participate may not be representative of all Scottish staff and prisoners. In particular, it should be noted that a lower proportion of prison staff were smokers compared with the general population. However, Scottish prison staff have not been allowed to smoke anywhere on prison premises since 2008, so it is possible that rates of smoking in this group are actually lower than among Scottish adults, especially as movement through and out of a prison to smoke during a break may be considerably more difficult than in other workplaces. To our knowledge, no data exist to test this hypothesis. For operational reasons, paired interviews were conducted instead of focus groups on two occasions. While we acknowledge methodological differences between interviews and focus groups, we believe that these methods are complementary and can be combined effectively within a study. Logistical issues meant the present study could not explore prisoner attitudes qualitatively; this is planned for a subsequent phase of work. Finally, we acknowledge that levels of SHS vary greatly between and within prisons, no doubt influencing the strength of feelings and views in participants.

Novel contributions of this study are that it provides comprehensive and comparable evidence on how staff and prisoners view smoking bans prior to any decision on the introduction of smoke-free policy and highlights potential challenges to implementation as well as measures which might help to maximize success. Our results are timely and highly relevant for the forthcoming introduction of smoke-free prisons across Scotland in November 2018 and may be informative for other prison systems and comparable institutions planning smoke-free initiatives. In particular, the results highlight that the introduction of prison smoking bans removes an established activity and rare pleasure (sometimes even seen as a "right" or "privilege") from individuals who are living in a difficult and

often stressful environment. High rates of mental health problems in prisons may create further challenges in banning smoking, particularly as tobacco is (mistakenly) perceived to be effective in managing anxiety.³⁹ Additionally, contextual factors such as increases in the prison population in recent decades,⁴⁰ longstanding pressures on prison finance and staffing,⁴¹ and the relatively recent (2011) transfer of healthcare from Scottish prisons to health services⁴² have the potential to exacerbate problems in introducing smoke-free policy in Scotland's prisons in November 2018. Although the scale of the task should not be underestimated, it is important to highlight that bans have been introduced into prison systems around the world experiencing common operating pressures, with evidence suggesting that implementation of smoke-free initiatives is often smoother than anticipated and fears of major unrest do not generally materialize.^{19,38,43,44}

The findings of our study support the need for prison smoking bans to be accompanied by effective smoking cessation support, access to satisfactory tobacco alternatives and training for frontline staff on the effects of nicotine withdrawal and ideas for supporting quit attempts. In addition, there should be reviews of safeguarding procedures for vulnerable prisoners and increased promotion and investment in activities, which help to reduce anxiety, stress, and boredom. Ongoing measures will be needed for the maintenance of smoke-free environments, including continued strategies for management of nicotine addiction and fair and robust policing of bans.

Given that prison smoking bans may be contentious, we recommend that prison service managers create opportunities for regular and open dialogue within and between stakeholder groups. It is important that specific measures to address staff and prisoner concerns are incorporated into plans to bring about and maintain smoke-free environments.

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Declaration of Interests

None to declare.

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Chapter 4. Views of prison staff in Scotland on the potential benefits and risks of e-cigarettes in smokefree prisons: a qualitative focus group study (Publication 2)

4.1 Introduction

Supporting PiC to quit or abstain from smoking in prison is key to the successful implementation of smokefree prison policy (Collinson et al. 2012; Hefler et al. 2016). In the UK, e-cigarettes are popular among adults in the general population who want to quit or temporarily abstain from smoking (McNeill et al. 2018), and there is growing evidence on the effectiveness of e-cigarettes for smoking cessation (Hartmann-Boyce et al. 2020). However, at the time these data were collected, PiC were not permitted to purchase or use e-cigarettes in prisons. Understanding prison staff's perspectives on potentially allowing PiC to use e-cigarettes is important when formulating and implementing acceptable and effective policies on smoking and e-cigarettes in prisons, particularly since their introduction will affect staff work roles and may have positive/negative consequences for prison staff. This study sought to provide novel evidence for policy makers in Scotland and other jurisdictions by being the first to examine in detail prison staff's perceptions of the benefits and risks of e-cigarettes in smokefree prisons. Findings come from the same dataset of prison staff focus groups reported in **Publication 1**. As discussed, the dataset was collected in the Pre-announcement period of TIPs. At this time, staff were not permitted to smoke tobacco or use e-cigarettes at work; PiC were permitted to smoke tobacco in designated areas, but, like staff, were not allowed to use e-cigarettes while living in prison.

Publication 2 aims to contribute evidence towards the following RQ:

- **RQ2:** What are prison staff's perceptions and experiences of e-cigarettes for PiC in smokefree prisons, including the perceived risks and benefits?

Publication 2 is available at: <https://bmjopen.bmj.com/content/9/6/e027799>

Brief information about publication history can be found with the online version of the publication, including access to peer review comments (see <https://bmjopen.bmj.com/content/bmjopen/9/6/e027799.reviewer-comments.pdf>)

BMJ Open Views of prison staff in Scotland on the potential benefits and risks of e-cigarettes in smoke-free prisons: a qualitative focus group study

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ABSTRACT

Objective Electronic cigarettes (e-cigarettes) were introduced into all Scottish prisons in February 2018, some months after prisons began preparing in 2017 for a smoking ban implemented in November 2018. In 2016/2017, prison staff views on the potential benefits and risks of e-cigarettes were explored in advance of the introduction of: (1) a smoking ban and (2) e-cigarettes.

Setting Fourteen prisons in Scotland.

Participants Seventeen focus groups and two paired interviews were conducted with 132 staff in 14 Scottish prisons 4–9 months before plans for a smoking ban were announced in July 2017. Both smoking and non-smoking staff were invited to participate.

Results Prison staff highlighted three potential risks of e-cigarettes in smoke-free prisons: staff health risks from e-cigarette vapour; prisoner health risks from vaping; and risks to both groups from e-cigarette misuse, defects or accidents. Conversely, potential benefits of e-cigarettes in smoke-free prisons centred on: reducing smoking-related health harms to staff and prisoners; helping prisoners to manage without tobacco; and supporting staff to maintain safety and discipline in prison. Staff who participated in focus groups had limited experience of vaping and expressed some uncertainty and misunderstandings about e-cigarettes.

Conclusion Our findings highlight that scientific uncertainty, misunderstanding about vaping, the complexity of prisons as workplaces and prison tobacco control policy all have implications for staff perceptions of the potential place of e-cigarettes in smoke-free prisons. To alleviate staff concerns, there is a need for reliable information on e-cigarettes. Staff may also require reassurances on whether products are ‘tamper proof’, and rules about vaping indoors.

INTRODUCTION

There is a growing consensus that using e-cigarettes (vaping) is safer than smoking conventional cigarettes. A review of the scientific evidence on e-cigarettes, conducted by the National Academies of Sciences, Engineering and Medicine,¹ reported ‘conclusive evidence that completely substituting e-cigarettes

Strengths and limitations of this study

- To our knowledge, this is the first study to examine staff views on the potential benefits and risks of introducing e-cigarettes for prisoners in a smoke-free prison system, using data collected prior to the announcement of a smoking ban and before there was experience of e-cigarette use in prisons.
- This study provides valuable insight into the potential place of e-cigarettes in a complex workplace setting in which staff were, on the one hand, still exposed to secondhand smoke, while on the other increasingly aware that they could be responsible for the management and care of vulnerable and/or challenging individuals subject to enforced smoking abstinence.
- Our results are based on analysis of rich qualitative data collected from a relatively large sample of prison staff from 14 Scottish prisons, with varied smoking histories and experience of working with diverse prisoner groups.
- It is important to acknowledge that: the sample was self-selecting, few members of staff had direct experience of vaping and staff views may have developed since these qualitative data were collected.

for combustible tobacco cigarettes reduces users’ exposures to numerous toxins and carcinogens present in combustible tobacco cigarettes.’ A similar view on e-cigarettes has been reached by UK health organisations, including, for example, the Royal College of Physicians,² Public Health England^{3 4} and NHS Health Scotland.⁵ There is however greater disagreement within academic and health communities over issues such as the effectiveness of e-cigarettes as a smoking cessation aid⁶ and the potential influence of e-cigarettes on smoking norms and uptake among adults and young people.^{1 7}

The contested nature of e-cigarettes is perhaps unsurprising. The introduction of a new technology is inevitably accompanied by

a period of scientific uncertainty and debate about how to regulate technology in the absence of conclusive evidence about its health effects. The 'precautionary principle' may be relevant in situations of uncertainty. The WHO's definition of the principle centres on the idea that '... scientific uncertainty should not be used as a reason to postpone preventive measures'.⁸ The precautionary principle requires complex judgements (even conjectures) about the likely balance of potential benefits and risks of introducing different types of preventive measures versus not implementing these measures.⁹ With respect to e-cigarettes, Fairchild and Bayer¹⁰ suggest that beliefs among some experts that e-cigarettes are a potential threat to health and require strict regulation are 'shaped implicitly by a precautionary impulse'. On the other hand, it has been suggested that experts who believe that e-cigarettes are part of the solution to the challenge of tobacco control might be influenced by the principle of harm reduction.¹⁰ Harm reduction strategies are informed by a belief that steps should be taken to minimise harm from tobacco and other drug use in circumstances in which abstinence is not achievable.¹¹

In the UK, it is illegal to smoke in most enclosed workplaces and public spaces. As both residential settings and workplaces, prisons have historically adopted a distinctive approach to tobacco control, including partial exemption from smoke-free laws in the UK.¹² However, ongoing concerns about Secondhand Smoke (SHS) exposures are one factor in recent decisions by the UK and Scottish governments to extend smoke-free policies to all indoor and outdoor areas of prisons in Wales and England¹³ (rolling out from 2016) and Scotland (from 30 November 2018 in all 15 prisons).¹⁴

E-cigarettes have been available for prisoners to buy in some English and Welsh prisons from 2016 and were first made available for prisoners to buy in all Scottish prisons in early 2018 (~10–15 months after the data presented in this paper were collected). The potential for e-cigarettes to help some prisoners to remain smoke-free is recognised by organisations such as NHS Health Scotland,¹⁵ while other commentators have discussed the potential negative health and organisational effects of selling e-cigarettes in prisons which have implemented smoking bans.^{16 17}

Commentary and research on e-cigarettes and their place in smoke-free environments has largely focused on the opinions of public health experts and the general public.^{18 19} In-depth qualitative research examining employees' views on vaping in particular settings is required to help with the development of acceptable and effective workplace policies and measures on e-cigarettes. We believe the Tobacco In Prisons study (TIPs), as reported here, is one of the first studies to address specific evidence gaps in respect of e-cigarettes in one workplace, prisons, and to investigate views on the potential role of e-cigarettes in accompanying the removal of tobacco across a country's prison system. In this qualitative paper, we present prison staff views, using data from phase 1 of

TIPs. These data were collected from 132 prison staff in 14 Scottish prisons several months before the July 2017 announcement that a comprehensive ban on smoking would be introduced from 30 November 2018 and prior to any significant policy debate in Scotland about the sale of e-cigarettes to prisoners. This paper extends previous reporting of prison staff and prisoner views on prison smoking bans, which only includes brief mention of the potential place of e-cigarettes in smoke-free prisons.²⁰ Here, we use the staff focus group data to explore in detail staff views on the specific benefits and risks of e-cigarettes. The research could help with the development of strategies in respect of e-cigarettes in prison and so support the successful introduction of smoke-free policies, and help reduce tobacco-related harms, not just in Scotland (where prisons have recently gone smoke-free) but in other jurisdictions that are considering implementing bans in the future.

METHODS

Data were collected prior to the announcement of plans to implement a smoking ban in Scottish prisons. At the time of data collection, prisoners were allowed to smoke tobacco in cells and outdoor areas; staff could not smoke on prison premises. Nobody (staff, prisoners or visitors) was permitted to vape in Scottish prisons during the period in which these data were collected (November 2016–April 2017).

Patient and public involvement

TIPs was designed to ensure that the views of prisoners and prison staff, as expressed to a research team who were independent of the prison service, could be heard at different stages of the process of moving towards smoke-free prisons in Scotland. At all stages of the study, a Research Advisory Group which included staff from various parts of the prison service and representation from unions representing prison staff, has given extensive feedback on the overall design of the study and on study materials (including topic guides for qualitative interviews/focus groups).

Sampling and recruitment

As reported elsewhere,²⁰ 17 focus groups and two paired interviews (hereafter referred to collectively as 'focus groups') were conducted with staff from 14 Scottish prisons which had been recruited through a point of contact in each prison. The reason for carrying out paired interviews on two occasions was that other prison staff who were due to participate in the focus group were unable to attend at short notice. We asked the point of contact to invite around eight prison staff to participate in a focus group with other staff from the same prison. To enable the research to explore the diversity of views on smoking in prisons and prison smoking bans within and between establishments, it was explained that ideally we would like the focus groups to include both smoking and

non-smoking staff in a range of work roles. While we had limited control over how focus groups were assembled by the prison point of contact, most displayed some diversity with respect to staff smoking status. Across the sample of 132 staff, 78 had never smoked (NS), 30 were ex-smokers (ExS) and 11 currently used tobacco cigarettes (S). The smoking status for 13 participants is not known (NK). Eight staff reported having ever used an e-cigarette: five were currently vaping (V) and three were no longer vaping (ExV). Although it was not possible to record information on staff job roles consistently, the majority of those who took part were Scottish Prison Service staff, while some worked in the prison for other agencies, such as the National Health Service. Scottish Prison Service staff were a mix of residential, operational and instructor officers, managerial roles and administrative posts. The 14 prisons in which staff were working were varied with respect to: prisoner population (eg, sex, age, and sentence length), capacity, security status and prison architecture.

Quotations are included to illustrate key perspectives, indicating the prison code, focus group and smoking status of each speaker (eg, KA04 S=prison K, group A, participant 04, Smoker). Codes were randomly allocated to prisons by the research team specifically for this paper to protect anonymity.

Data collection

Focus groups were chosen for this study as they are well suited to understanding the diversity of viewpoints on a subject and how opinions are shaped by varying personal, environmental and social factors. Focus groups (range 5–12 participants) and the two paired interviews were conducted between November 2016 and April 2017 by a member of the TIPs research team. They were carried out in a room in each prison chosen by the point of contact. The topic guide covered: smoking and exposures to SHS within prisons; smoking norms and prevalence within prison; the 'culture' of smoking within prisons; management of nicotine addiction (including e-cigarettes) in prisons and wider society; and opinions on rules on smoking. Specific areas for discussion on e-cigarettes included: whether staff had used e-cigarettes or knew others who used e-cigarettes; opinions about e-cigarettes in general; views on what might be good or bad about prisoners or staff vaping in prison; and opinions on any issues which might be raised by allowing vaping in prisons. The researchers formulated questions using their own words (often in response to issues raised by the groups), adjusted the order of topics as appropriate, prompted further discussion where relevant and invited staff to raise any points which they thought were pertinent.

Data analysis and reporting

With written consent from participants, focus groups were audio recorded and transcribed verbatim. Transcripts were checked and de-identified prior to management of the data. TIPs researchers (KH, HS, ED and GL) who conducted the fieldwork developed a descriptive

coding scheme to bring together data on similar topics in preparation for detailed analysis. This coding scheme was devised using a combination of inductive and deductive techniques. The task of coding transcripts was split between TIPs researchers. Due to the relatively large volume of qualitative data, summaries with digital links to the raw data for all content relating to e-cigarettes were subsequently produced by AB using the Framework function in NVivo software (QSR international). AB used the data summaries and raw data to conduct thematic analysis. The process involved identifying different dimensions of staff opinions on e-cigarettes, grouping together dimensions which were similar to create themes and subthemes and naming the themes and subthemes.²¹ KH conducted independent analysis of the data, and other authors read a sample of the data to familiarise themselves. Emergent themes were discussed and revised until an interpretation was agreed on by all authors. This paper largely follows Standards for Reporting Qualitative Research (SRQR) guidelines (see online supplementary file 1).

RESULTS

Background: personal experience and expressed knowledge of e-cigarettes

Most staff who participated in the focus groups had little personal experience of e-cigarettes; only a small number (n=8/132) reported having ever tried vaping. Consequently, a recurring theme in the focus groups was staff reporting low levels of knowledge about e-cigarettes, contributing to a sense of uncertainty and confusion about vaping. One way in which this emerged was in the different names which staff gave to e-cigarettes, including 'vaping machines' (JA05 NS), 'vapour sticks' (FA06 NS) and 'vape cigarette' (HA03 ExS). Another way in which uncertainty about e-cigarettes emerged was in the frequent questions which staff asked each other or the interviewer during discussions:

HA05 NS-Isn't it quite expensive as well e-cigarettes, are they not quite expensive?

HA02 NS-I don't know, I think they're getting cheaper, they were quite expensive.

Staff also seemed to be unsure about how e-cigarettes work and whether there is more than one type of product. Staff occasionally muddled 'tobacco' and 'nicotine' when discussing e-cigarettes, although mistakes in terminology were generally corrected by another member of the group. There were also examples where staff appeared to confuse e-cigarettes with a nicotine inhaler.

Uncertainty was also expressed by some staff about what is known about the health risks and safety of e-cigarettes:

FA01 NS: [w]ell I was just gonna ask, why are they banning vaping [in other contexts outside of prisons], is there something wrong with vaping? Because they're banning it in lots of different places...for some reason

In other cases, staff expressed greater awareness that there are gaps in the evidence on e-cigarettes, which was another source of uncertainty. It is interesting to note however that some staff seemed unfamiliar with the pace at which knowledge has accumulated in recent years:

BA10 NS: The last time they reviewed the policy, there was still no reliable research on the health implications of e-cigarettes.

Apparent misunderstandings about e-cigarettes were also identified. These included a staff member believing that it might be more dangerous for non-smokers to take up e-cigarettes compared with conventional smoking and statements made as 'facts', such as that e-cigarettes 'emit ten carcinogens as opposed to 100 from ordinary cigarettes' (CD27 ExS).

Hence, it was against this background that staff were evaluating the potential benefits and risks of vaping in prison, in the event that tobacco was removed from the prisons at some future date. Overall, opinions around allowing e-cigarettes in smoke-free prisons included views which could be described as positive, and others which were highly negative, with some staff reporting that they did not feel sufficiently well informed to have an opinion of any sort. Although only eight participants had experience of vaping, those with direct experience of e-cigarettes generally acknowledged their potential benefits in smoke-free prisons. However, there were exceptions; for instance, less positive views were expressed by a staff member who had themselves stopped vaping due to concerns about potential adverse health effects of e-cigarette vapour.

The range of potential risks and benefits of e-cigarettes in smoke-free prisons as discussed by all participants in the focus groups are explored in detail below.

Perceptions of potential risks of e-cigarettes in a smoke-free prison

Potential risks of e-cigarettes in a smoke-free prison centred on three subthemes: potential risks to staff health from secondhand vapour; potential risks to prisoner health from vaping; and potential risks to staff and prisoners from device misuse, product defects or accidents.

Potential risks to staff health from secondhand vapour

Some non-smoking and smoking staff worried that they might be harmed by breathing the vapour from prisoners' e-cigarettes when they came to work. Several raised concerns that health risks from secondhand vapour exposures might be uncovered in the future:

LA8 ExS: ...not everybody will buy the good quality e-cigarettes so...what's in that [e-cigarette vapour]? You obviously don't know, so I think in years to come they'll [bystanders] end up having problems. Might not be as bad as cigarette smoke, but I think the time to come...when they start doing research like that.

Consequently, there were some staff who expressed beliefs that e-cigarettes should be prohibited in Scottish prisons as a protective measure. Precautionary thinking about secondhand vapour (and the use of e-cigarettes) appeared to be influenced by several factors. As discussed, some staff appeared aware that there are gaps in scientific understanding of the health effects of e-cigarettes and secondhand vapour.

CC19 NS: I don't think there's enough research been done on the e-cigarettes to see if you can get passive smoking through that either so I wouldn't be happy with smokers

CC22 NS: So ban it until you've proved it's safe.

INTERVIEWER: So they're basically too new at the moment?

CC22 NS: Yes, that's it. You don't allow it until you can prove it's safe. This is what has not happened with tobacco.

Existing restrictions on vaping in many public places outside of the prison context appeared to reinforce perceptions that secondhand vapour might pose a danger to health:

NA06, S/ExV: It's the vapour itself. Which is why obviously it's been banned on trains and things like that, because they don't know enough about the vapour and the effect it might have on those around them. So you might be trading secondhand smoke for secondhand vapour. And it's...could be having exactly the same effect on people's lungs and everything else as the secondhand smoke does, so...

A desire to avoid past mistakes in relation to countries permitting the sale of cigarettes before the long-term health effects of smoking were known, perceptions that not enough is known about what is inside e-cigarettes and vapour, and beliefs that prisoners might use poor quality products are examples of further justifications given by staff for potentially prohibiting vaping in prisons.

Potential risks to prisoner health from vaping

Some staff worried about potential risks to prisoner health from the use of e-cigarettes, given that the long-term effects of vaping are not yet fully known. For example, one member of staff stated, 'I just don't think we should be giving them [prisoners] something [e-cigarettes] as a substitute that we don't even know a hundred per cent about.' (AA06 NS). Two other group members continued this discussion, saying:

AA07 ExS: Ten years down the line, we could all be smoking these vapes, and then we find out there's a risk.

AA01 NS: A brain tumour, or something.

Concerns about risks to prisoner health from vaping might also have been influenced by perceptions that e-cigarettes were being used, in wider society, as a long-term replacement for tobacco, rather than as a means to quit nicotine. For instance, one staff member (AA07, ExS)

said: 'I know loads of people that use them [e-cigarettes], and they say they're great. And you get addicted to that as well.' There were some suggestions that prisoners might struggle to give up vaping and that 'addiction' to e-cigarettes was undesirable. There was also a suggestion that it might be beneficial if prisoners had access to e-cigarettes on an interim (rather than permanent) basis to help them to manage cravings without forming a vaping habit. However, there were other staff who suggested that this might be unfair for prisoners who do not want to become abstinent and challenging for staff to manage.

B01 NK: '...because again comparing it with the community, a lot of people do go for the e-cigarette, but like say they get addicted to it, and I just feel that we're trying to create a healthier lifestyle, and especially if they are confined, if they're allowed to smoke an e-cigarette, we're not helping them [prisoners], because they'll just keep doing it, and you'll find that they'll smoke more and more and more, so how's that helping them with a healthier lifestyle, whereas we're trying to get them totally off that.'

Potential risks to staff and prisoners from device misuse, product defects or accidents

As misuse of items was perceived to be an integral part of prison culture, there was a significant amount of discussion about potential ways in which prisoners might attempt to find alternative uses for e-cigarettes.

NA06 S/ExV: Nothing's a hundred per cent tamper-proof and we're never going to find anything that's a hundred per cent tamper-proof...

Specific concerns focused on rechargeable devices and associated chargers and potential risk of devices being used to conceal contraband, 'smoke' illegal drugs (such as psychoactive substances) and charge prohibited mobile phones, for instance:

EB12 NS: I mean, it's an alternative. And obviously, for your secondhand smoke, it's beneficial. But what could they do with these cartridges, and that sort of stuff? I mean, you're talking about people who can make anything out of anything...Is this just more stuff you're introducing to the jail, which they could use to do whatever?

There were also questions about the potential for devices to leak, explode or catch fire in prison. For example, one member of staff stated that e-cigarettes had received 'bad press' for 'blowing up in people's faces and people maybe have them in their pocket and it leaks or something and it burns' (CB01 NS).

Perceptions of potential benefits of e-cigarettes in a smoke-free prison

While risks were identified, so were potential benefits of allowing e-cigarettes in a smoke-free prison. This included reducing harm to staff and prisoner health from smoking

and SHS; helping prisoners to manage without tobacco, and the potential role of e-cigarettes in maintaining safety and discipline in prison, as described below.

Reducing harm to staff and prisoner health from smoking and SHS
E-cigarettes were perceived by some staff to contain fewer harmful chemicals compared with conventional cigarettes and thus to be likely to pose fewer risks to the health of users:

JA02 NS: I think they [e-cigarettes] are better for... smokers that want to come off smoking and they change from cigarettes to them because there are less carcinogens in but there is still something in them [e-cigarettes]. It has to be to create the vapour to carry the nicotine there's something in there.

Some staff also believed that secondhand vapour might be less dangerous and unpleasant for bystanders, with one staff member even saying the smell produced by some e-liquids was 'quite nice' (FA02, NK). Consequently, there was a suggestion that e-cigarettes might be beneficial for the health of everyone working and living in prisons when weighed against the dangers of smoking and SHS:

FA02 NK: They could get the vapour thing, I don't know a lot about it, but vaping is safer than smoking. Why not let them vapour when they're in prison.

FA05 NS: Im not being funny...

FA02 NK: Better for us as well.

FA05 NS: ...I would rather somebody was vaping in the jail, than smoking some of the crap they smoke.

FA02 NK: Yeah.

FA03 NS: And it's got to be better for the smoker

Helping prisoners to manage without tobacco

Some suggested that e-cigarettes could play a role in helping prisoners (including individuals who intended to smoke on their release from prison) to manage without tobacco should smoking be banned in prisons in the future. There was some discussion about the extent to which allowing prisoners to vape in prison was consistent with current practice in respect of treatment of prisoners addicted to other substances, such as illegal drugs like heroin.

IA02 V: I totally agree [about the introduction of e-cigarettes into prisons]. I think it's been borne out with other...with the way we've treated other addictions, mainly methadone, I think there does need to be a substitute, it's by all accounts...the research thus far says it's a far, far cleaner substitute...

Lack of availability of 'medical' e-cigarettes in the UK, and uncertainties about the health effects of vaping were highlighted as points of difference between e-cigarettes and other 'substitute' products. Additionally, some implied that existing nicotine replacement products could fulfil a similar role to e-cigarettes.

The potential role of e-cigarettes in maintaining safety and discipline in prison

There were some perceptions that, in the absence of tobacco, nicotine substitutes such as e-cigarettes and nicotine replacement therapy might help staff with the management and care of prisoners who were unable to smoke, especially new arrivals into custody:

GA04 NS: I think if I was offering some...prisoners, you know, there's your cigarette, I'm taking them off you, there's a lollypop or there's an e-cigarette I think I'd rather give them an e-cigarette.

However, some expressed the view that it might be unfair if prisoners were permitted to vape in the future, since staff are not allowed to vape at work.

CA14 NS: I just think, I don't know nothing about them either, but then if staff aren't allowed to bring them in.

CA15 Ex: Why should prisoners be allowed?

Nicotine substitutes, alongside other measures, were also believed to have the potential to reduce organisational problems (eg, incidents of indiscipline, threats to staff safety and operational stability) associated with prison smoking bans. However, there was some discussion about whether and how substitutes for smoking might make the imposition of a smoking ban more achievable and help to diffuse challenging situations in smoke-free prisons.

KA02 NS: Well, I think if it's [a smoking ban] managed properly and an alternative [to tobacco] is offered, you know, whether it's a certain e-cigarette or patches or something, then yes, it [a smoking ban] could work, but I think to have an outright ban with no alternative in place would just cause a hell of a problem.

DISCUSSION

To our knowledge, this is the first study in any country to investigate staff views on the potential benefits and risks of introducing e-cigarettes for prisoners collected across an entire prison system before a decision to implement smoke-free policy. This evidence can assist with the development of acceptable and effective measures in respect of e-cigarettes in prisons and, in turn, support successful implementation of smoking bans and reduce tobacco-related harms, not just in Scotland but in other jurisdictions that are considering introducing smoke-free policy in the future.

We found evidence of discord among prison staff in Scotland about the overall balance of potential benefits and risks of e-cigarettes in a smoke-free prison; it is important to bear in mind that the data were collected before plans for a prison smoking ban were announced, and before e-cigarettes were available for purchase. We

found that concerns about as yet unknown potential risks to health from e-cigarettes and secondhand vapour led some staff to feel apprehensive about the prospect of prisoners vaping. It is understandable that some prison staff showed precautionary attitudes about the possibility of replacing one workplace hazard (SHS exposures) with another that they thought could potentially be hazardous (prisoner vaping). The likelihood that some prisoners would try to modify devices, thus possibly causing harm to themselves or others, was cited as another potential risk of e-cigarettes in prisons. Significant discussion among staff about potential e-cigarette misuse or accidents might be, at least partly, explained by prison officers' primary responsibilities for maintaining operational safety and concerns about use of psychoactive substances in UK prisons.²²

By contrast, staff support for allowing e-cigarettes in a smoke-free prison could be interpreted with reference to the principle of harm reduction. While e-cigarettes were believed to carry some risk, these risks were thought by some staff to be smaller than the certain dangers of smoking and SHS and the potential adverse consequences of removing tobacco from prisons. Given ongoing challenges in respect of supporting individuals to abstain from drug and alcohol use in prison, it is understandable that some staff believed that a range of nicotine substitutes should be offered in a smoke-free prison to help in the management of smoking addiction.

The finding that some within the staff group had misgivings and questions about e-cigarettes in smoke-free prisons in 2016/2017 was also reflected in a TIPs online survey of prison staff conducted at a similar time. The staff survey showed that 74% of staff (strongly) agreed that 'prison smoking bans are a good idea'. The proportion who (strongly) agreed that 'prison smoking bans are ok if prisoners are allowed e-cigarettes or vapes' was 36%. The equivalent TIPs survey of prisoners, conducted in the same time period, found evidence of stronger support for e-cigarettes among prisoners: while only 22% of prisoners (strongly) agreed that 'prison smoking bans are a good idea', prisoners expressed greater acceptance of bans (48%) if e-cigarettes were made available.²⁰

A key strength, and novel element, of this paper is that it is based on analysis of rich qualitative data collected from a relatively large sample of prison staff with diverse smoking histories and experiences of working in varied prison settings and with different groups of prisoners. We therefore believe that our results provide a good indication of staff perspectives on the key potential benefits and risks of e-cigarettes in a smoke-free prison. We were able to collect such comprehensive data from Scottish prisons through close partnership working with senior staff with a remit for health and well-being, and others (such as representatives of employee Unions), in the Scottish Prison Service, starting with discussion of research plans in the pre-grant period. In line with the study design,²³ the research helped to inform and verify implementation strategies for smoke-free prisons in Scotland by feeding

back emergent findings from TIPs at monthly meetings of key stakeholders, including these findings on staff views on e-cigarettes, as prisons prepared to go smoke-free. We believe that the findings may be relevant to prisons in other countries who have adopted, or are considering, similar approaches to the UK on the regulation of tobacco and e-cigarettes.

Our study has four key limitations. First, focus group participants were self-selecting; it is notable that very few participating staff reported current/former vaping experience. A lower rate of current use (~3%) of e-cigarettes among staff focus group participants compared with the general population in Scotland (7%)²⁴ is perhaps not surprising given that prison staff are not allowed to use e-cigarettes in their place of employment. Second, there are gaps in the information about participants, notably the number of years of experience of working in prisons, which could have provided additional useful context to the results. Third, in some focus groups there were individuals who expressed strong views about whether to allow e-cigarettes in prisons. While TIPs researchers tried to ensure that diverse and opposing positions were captured during the process of collecting and analysing data, it is possible that some people may not have wanted to express their views in front of colleagues. As such, some positions may not be fully reflected in our findings due to group dynamics.²⁵ Finally, it is important to acknowledge that staff viewpoints on e-cigarettes may have developed since these qualitative data were collected.

The findings of our research suggest a number of measures which, taken together, might increase staff awareness and understanding of e-cigarettes, and enhance support for their use in smoke-free prisons. This is important, since e-cigarettes might be beneficial for the transition to and ongoing management of smoke-free policy; in particular, they may have the potential to enable prison staff to support strategies to increase prisoner motivation and capacity to achieve smoking abstinence, and ideally long-term cessation. By adding to the range of choices available to prisoners, e-cigarettes might help maximise the success, and health benefits, of smoke-free policy. Specifically, we suggest it would be beneficial if information on e-cigarettes were to be developed for prison settings which strikes a balance between taking a clear position on the relative harms of e-cigarettes compared with smoking tobacco or abstinence, while acknowledging limitations in the evidence. Such information might be valuable both for prison staff who are formally involved in health promotion work in prison (eg, Physical Education Instructors), as well as for prison staff who might be willing to provide opportunistic information and support in relation to e-cigarettes (and smoking behaviour) to prisoners. The findings support the sale of 'tamper proof' e-cigarettes in prison to protect staff and prisoner health. Additionally, they suggest it might be beneficial if frontline staff were offered training to enable them to swiftly identify when e-cigarettes are being used in ways which may cause serious injury to the user or other

people, as well as opportunities to feedback to management about the implications of e-cigarettes for prison security. Rules on the indoor use of e-cigarettes in prison (as has happened in Scotland) might be prudent, given concerns among some staff about potential risks of exposure to e-cigarette vapour, and possible residual frustrations about the decision to partially exempt prisons from national smoke-free laws when they were introduced in 2006.

Future research conducted after e-cigarettes and smoke-free policies have been introduced in Scottish prisons is needed to increase understanding of the real world implications of: allowing prisoners to buy e-cigarettes in smoke-free prisons; the ongoing management of people who enter prison as smokers; prison security; smoking cessation provision; and staff and prisoner attitudes and health. Subsequent phases of TIPs and a complementary study will provide evidence in respect of these questions.

In conclusion, our findings highlight that gaps in scientific evidence on e-cigarettes, misunderstanding about vaping, the complexity of prisons as workplaces and the distinctive nature of prison tobacco control policy all have implications for staff perceptions of the risks and benefits of e-cigarettes in smoke-free prisons. Reliable information on e-cigarettes embedded in wider health promotion work in prison, sale of 'tamper proof' products and rules on vaping indoors might reduce staff concerns and so help in the successful implementation and long-term success of smoke-free prisons.

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Contributors KH, HS, SS, ED and LB developed the study, with input from colleagues in the TIPs research team and the SPS Research Advisory Group. KH conducted most of the focus groups, with input from HS, ED and GL. AB and KH conducted independent initial analyses of the data, and AB conducted the more detailed framework analysis. AB drafted the manuscript and all revisions. All authors contributed to interpretation of the data and reviewing of the final paper.

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Chapter 5. Perspectives on smokefree prison policy among people in custody in Scotland (Publication 3)

5.1 Introduction

In July 2017, SPS and the Scottish Government announced their decision to implement smokefree policies in all Scottish prisons from November 2018, partly informed by evidence from TIPs that, on average, SHS exposures among prison staff in frontline roles were comparable to the exposure levels experienced by a non-smoker living in a typical smoking home in Scotland (Semple et al. 2017). Given that smokefree policies have a substantial impact on PiC, a majority of whom are smokers, it is important that PiC's voices are heard by stakeholders who are preparing for the removal of tobacco from prisons in order that implementation strategies reflect, as far as possible, the needs, goals and concerns of PiC. The current study sought to build on and extend the very limited evidence-base seeking to understand smokefree prison policies from the perspectives of PiC, to support stakeholders in Scotland and other jurisdictions contemplating or actively preparing to introduce greater smoking restrictions for PiC. **Publication 3** reports analysis of two complementary datasets of interviews with PiC carried out during the Preparatory Phase of TIPs. The decision to prohibit smoking in prisons had been announced 5-12 months prior to the interviews with PiC. Rules on smoking in prison for PiC and staff were the same as at the time of **Publications 1** and **2**; (rechargeable) e-cigarettes had not yet gone on sale in prisons.

Publication 3 aims to contribute evidence towards the following RQs:

- **RQ3:** What views on smokefree prison policies are held among PiC? What are the reasons for support or opposition to smokefree prison policy among PiC?

Publication 3 is available at: <https://doi.org/10.1108/IJPH-12-2019-0065>

Brief information about publication history is included in the publication.

Perspectives on smokefree prison policy among people in custody in Scotland

Ashley Brown, Douglas Eadie, Richard Purves, Andrea Mohan and Kate Hunt

Abstract

Purpose – This paper aims to explore smokefree prison policy, from the perspective of people in custody in Scotland.

Design/methodology/approach – In total, 77 people in custody in Scotland were interviewed in the period leading up to implementation of a nationwide prison smokefree policy. Data were thematically analysed to identify the diversity of views and experiences.

Findings – Participants described a widespread awareness in prisons of plans to implement a smokefree policy from 30 November 2018. Opinions about smokefree prisons varied among participants based on perceptions of the fairness, and anticipated positive and negative consequences of removing tobacco from prisons. At the time of the interviews, people in custody were responding to the impending smokefree policy, either by proactively preparing for the smokefree rule change or by deploying avoidance strategies. Participants described opportunities and challenges for implementing smokefree policy in prisons across three main themes: the role of smoking in prison, prison smoking cessation services and motivations for quitting smoking among people in custody.

Originality/value – This study exploring smokefree prisons from the perspectives of people in custody has several novel features which extend the evidence base. The findings highlight measures for jurisdictions to consider when planning to prohibit smoking in their prisons in the future. These include the need for evidence-based smoking cessation support in advance of smokefree policy, effective communication campaigns, consideration of broader structural determinants of health in prison and ongoing measures to reduce rates of return to smoking post release.

Keywords Health in prison, Offender health, Prisoners, Public health, Prison, Health policy

Paper type Research paper

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Introduction

Smoking is a leading cause of preventable illness and death globally (Reitsma *et al.*, 2017). Reducing uptake and use of tobacco and exposures to second-hand smoke (SHS) is a major health priority, resulting in the implementation of tobacco control measures in countries around the world (World Health Organisation, 2008). While there have been significant reductions in smoking at a population level, people in custody (prisoners who have been convicted or on remand awaiting trial) are one group among whom tobacco use has been very high (Spaulding *et al.*, 2018). Yet, there is evidence that not only do many people in custody take up (again) or increase smoking while in prison (Baybutt *et al.*, 2014) but also most people in custody who smoke express an interest in trying to quit (Ahalt *et al.*, 2019; Scottish Prison Service, 2015; Valera *et al.*, 2019).

Interventions providing (free) behavioural support and/or nicotine replacement therapy (NRT) to people in custody who smoke is one potential way in which countries may support smoking cessation in prison. A review evaluating the effectiveness of smoking cessation interventions in prisons, which included ten quantitative studies of varying methodological quality, found evidence that smoking cessation interventions “can significantly increase the likelihood of quitting in prison and increase abstinence post release” (de Andrade and

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Kinner, 2016, p. 1). However, challenges in respect of scaling up interventions or encouraging uptake among people in custody may limit the reach of prison smoking cessation interventions, potentially because of strong social norms (tobacco use is normative) and the linking of smoking with enjoyment and stress relief in a setting in which people may believe there are few alternatives. Another way in which jurisdictions may try to reduce smoking and SHS exposures in prison is via implementation of partial or total smokefree policy. The same review by [de Andrade and Kinner \(2016\)](#) found that partial smokefree policy can lead to significant reductions in the number of cigarettes smoked per day, while total smokefree policy can increase rates of smoking abstinence. However, the findings suggest non-compliance with smokefree rules and relapse to smoking following liberation may potentially constrain longer-term health benefits ([de Andrade and Kinner, 2016](#)). For this reason, several commenters have advocated for smokefree prison policy to be accompanied by evidence-based cessation interventions which seek to strengthen smokers' readiness to change and support individuals to sustain abstinence in prison and beyond ([Butler et al., 2007](#); [Puljevic and Segan, 2018](#); [Ritter, 2014](#)).

A review of 12 studies ([Djachenko et al., 2015](#), p. 43) exploring smoking cessation among men in custody identified that factors such as "a 'pro-smoking' culture in prison and the entrenched role of tobacco in prison society", places constraints on prison and health-care resources, and lack of prioritisation of smoking over other health issues, could work against measures to promote smoking behaviour change in the prison setting. Several of these studies also identified opportunities for increasing quitting in prison by connecting with some people's interests in making positive lifestyle changes during prison sentences.

Within the UK, prisons in Wales, England and Scotland have become smokefree in recent years ([Selous, 2015](#); [Scottish Prison Service, 2017a](#)). The intention to implement a total smokefree policy in all Scottish prisons from 30 November 2018 was announced in July 2017 ([Scottish Prison Service, 2017a](#)), in part in response to evidence on levels of SHS in prisons ([Semple et al., 2017](#)). In the UK, smokefree prison policies were implemented in a unique context; free smoking cessation treatment and behavioural support were available in prisons prior to smoking becoming prohibited. A national prison smoking cessation service specification for Scotland was published in 2015 that recommended that services in prisons, like those in the wider community, should provide "a combination of [free] *multisession intensive behavioural support together with pharmacology*" ([NHS Health Scotland, 2015](#), p. 8), including use of carbon monoxide (CO) monitoring to validate progress and encourage quitting. A detailed description of service delivery recommendations can be found elsewhere ([NHS Health Scotland, 2015](#)). In the period between the announcement in July 2017 and the legislation for smokefree prisons coming into force (30 November 2018), prison and health services worked in collaboration to maximise existing service performance, and develop a new "smokefree prisons pathway" ([NHS Health Scotland, 2018](#)) to support people in custody to manage without tobacco following the change of prison smoking rules.

It is important to understand smokefree prison policy from the perspectives of people in custody, to support successful implementation and ongoing management of such policies in jurisdictions who may remove tobacco from their prisons in the future. Two qualitative studies have reported the views of people in custody in England ([Woodall and Tattersfield, 2017](#); [Dugdale et al., 2019](#)). This paper is based on qualitative data collected from people in custody in Scotland between November 2017 and June 2018, when the sale and use of tobacco was still permitted in prison, and aims to extend previous studies. The research is unique in being one part of a comprehensive multi-methods, three-phase country-wide evaluation (the Tobacco In Prisons study) of the development, implementation and outcomes of smokefree prisons across a national prison system. Also of note is that Scotland differed from other prison systems (e.g. England and Wales) by introducing smokefree legislation in all of its prisons on the same date; interviews were conducted

during the anticipatory period after it had been announced that all prisons would become smokefree; the interviews included a sub-sample of participants who were using cessation services.

Methods

The Tobacco in Prisons study, a three-phase multimethod study, has been evaluating the process and outcomes of the introduction of a comprehensive smokefree policy in Scottish prisons. Phase 1 sought to understand the situation across the Scottish prison system before any decision had been made on whether or when to change existing regulations about smoking (September 2016–July 2017). Phase 2 began after the announcement in mid-July 2017 that Scotland's prisons would all go smokefree in November 2018. Phase 3 began in December 2018 and is assessing outcomes of the policy. Results from Phase 1 qualitative and survey work on staff and prisoner views have been published (Brown *et al.*, 2018), as have reports of air quality across all prisons in Phase 1 (Semple *et al.*, 2017) which informed decisions about smokefree policy, and in the week spanning the implementation of the smokefree policy on 30 November 2018 (Semple *et al.*, 2019).

Two of the study's work packages (WPs) have used qualitative interviews to explore issues surrounding smoking, smoking cessation and smoking restrictions in prisons from the perspective of a key group, namely, people in custody. This paper presents an analysis of these two complementary qualitative datasets (referred to as WP4 and WP5), both collected in Phase 2, i.e. the period between announcement and the implementation of the prison smokefree policy in Scotland, and before the introduction of rechargeable e-cigarettes in prisons. WP4 interviews took place from November 2017–January 2018, while the WP5 interviews were conducted from May to June 2018. At the time of both sets of interviews, people in custody were permitted to purchase tobacco from the prison shop ("canteen") and to smoke tobacco in their rooms (cells) and during outdoor recreation. The decision to remove tobacco from prisons from 30th November 2018 had thus been announced 5–12 months prior to the interviews which form the basis of this paper.

This study was approved by the Scottish Prison Service Research Access and Ethics Committee and University of Glasgow's College of Social Science Ethics Committee (references for interviews with people in custody 400150214 and 400160041).

Sample and recruitment

For both WPs, we conducted these Phase 2 interviews with people in custody in five prisons in Scotland, selected in discussion with the SPS to represent a range of prisoner groups and prison environments. Interviews in a sixth prison were also conducted as part of WP4. People in custody were recruited via a point of contact within each prison. These contacts were asked to provide information about the study to a sample of people in custody who held particular characteristics. For WP4, the researchers sought to interview a mixture of men/women and people on shorter and longer sentences. For WP5, the researchers aimed to interview people in custody who had experience of using smoking cessation services while in prison. In total, 77 participants took part in the interviews included in this analysis, 33 interviewed for WP4 and 44 for WP5. Most were current smokers or current users of the prison smoking cessation service. A minority were ex-smokers, most of whom reported stopping smoking within the last year. Self-reported use of prison smoking cessation services was ~75% for WP5 participants; the equivalent figure for WP4 participants was 45%. As shown in Table 1, the achieved samples for both WPs were diverse with respect to: sex, remanded/convicted status and sentence length. Information on other socio-demographic characteristics were not collected.

Characteristic	Categories	WP4	WP5	Combined total
Sex	Female	4	12	16
	Male	29	32	61
Remanded/convicted status	Convicted	30	35	65
	Remanded	3	2	5
	Missing data	0	7	7
Sentence length	Short-term	14	18	32
	Long-term	16	16	32
	Not applicable	3	2	5
	Missing data	0	8	8

Data collection

In total, 75 people in custody were interviewed one-to-one; two participants opted to take part in a paired interview. Researchers conducted the interviews in rooms chosen by the point of contact to give people in custody the opportunity to express their views in private. Topic guides covered similar but not identical general topics for WPs 4 and 5. The content of each guide was shaped by the study objectives and literature and was refined over multiple iterations based on feedback from the research team. Both covered: background and time in prison; smoking history; experiences of smoking tobacco and changes over time (particularly in light of the impending smokefree policy); the prison context and smoking; restrictions on smoking in prisons and opinions of these; views on what may help or hinder successful implementation of the prison smokefree policy; opinions and experiences of quitting smoking in the prison setting; and views on e-cigarettes in prisons. The time dedicated to topics differed between the two sets of interviews: the WP4 interviews sought to explore a wide range of issues in relation to smoking, smoking cessation and smoking restrictions in the prison setting, while the WP5 interviews in particular sought participants' opinions and experiences of prison smoking cessation services and other support for quitting within prison. Researchers conducting the interviews formulated questions using their own words, probed for further detail where necessary and asked participants to raise any issues which they considered relevant.

Data management and analysis

All interviews were audio-recorded with the participants' permission and transcribed by a professional transcription company. Data were thematically analysed, broadly adhering to the principles described by [Spencer et al. \(2014\)](#) which share similarities with the approach to thematic analysis developed by [Braun and Clarke \(2006\)](#). Emerging themes from the WP4 and WP5 interviews with people in custody were independently identified (using different approaches) by AB and DE/RP/AM, respectively. For WP4, data summaries for every transcript were entered by AB into the cells of a framework grid (rows=interviews, columns= themes) in Nvivo prior to detailed analysis. The equivalent step for WP5 involved indexing (but not summarising) transcripts against a descriptive coding scheme using Nvivo. The thematic framework for WP4 and the descriptive coding scheme for WP5 were developed using a combination of inductive (e.g. detailed reading of transcripts) and deductive techniques (e.g. reviewing of research questions, topic guide and literature). The authors used the framework grid or coded data and whole transcripts to identify emerging themes from the two data sets, paying attention to the range and diversity of responses. Over multiple iterations data were grouped into categories according to their perceived similarities or differences to create themes and sub-themes. The emergent themes identified in the two data sets were substantively very similar: the research team therefore decided to combine data sets for final analysis and reporting. AB led on creating final

themes and sub-themes by combining/separating and refining initial themes identified during the previous stage of analysis. Final interpretations were carefully checked against data from both WPs, and discussed and agreed on by all authors. Quotes are included to illustrate key findings, indicating prison code, participant ID and participant smoking status [smoker/ex-smoker/(current) service user of the prison smoking cessation service].

Results

As illustrated in the quote below, interviews were conducted at a time where there was reportedly widespread awareness among people in custody (and staff) that a comprehensive smokefree policy would be implemented in Scottish prisons in 6–12 months' time (i.e. on 30 November 2018):

WP5.A08.Smoker: "[...] every prisoner got a letter saying [...] as of November 2018, there'll be a smoking ban coming [...] there's a poster [...] it was like, nine months go to, eight months to go, seven months to go. So, they are giving you plenty warning, like, this is actually happening. So, there's nobody's got an excuse now to say, 'Oh I didn't know about it', like, everybody knows about it."

Key findings from the interviews are presented below under two main themes: reactions to the impending smokefree prison policy, and opportunities, challenges and (participant) recommendations for policy implementation.

Reactions to the impending smokefree prison policy

Opinions about the impending smokefree prison policy were on a continuum, with some participants occupying different positions on this continuum at different points in the interview. At one end of the continuum, participants expressed predominantly negative views on the basis that smokefree policy was perceived to be unfair in restricting the "freedom" to smoke and removing a substance associated with benefits (e.g. pleasure, relaxation, stress relief) as well as health harms:

WP4.D09. Smoker: "I think it's [smokefree prison policy] shocking, I think if you want to smoke it should be your 'right' to smoke [...] a lot of people use [smoking] as a coping mechanism [...] take that away from people I don't know what that's going to do."

At the other end of the continuum, participants expressed more positive views about the smokefree policy, for personal reasons and, in some cases, because of the perceived potential benefits to the wider prison population (and for prison staff) – assuming smoking cessation support and treatments were available in prison. Some regarded the smokefree policy as an opportunity to finally succeed in quitting smoking:

WP4.F2.Smoker: "Probably, a lot of prisoners are similar to me and going 'I'm glad that they're going to do it, it'll give me a chance to get off it [smoking]', because I don't think anybody really likes smoking, do you know what I mean? It's enjoyable while you're smoking but when you actually look at it and think about it I think everybody would go 'I can't believe I'm actually doing this!' [...] it's so bad for you."

Some participants expressed complex or nuanced views on the smokefree policy, simultaneously acknowledging and deliberating on perceived positive and negative aspects of prohibiting smoking in prison:

WP5.B39. Service User: It depends on what way you're looking at it. For me personally I think, I think it is a good idea for people's health. But at the same time I think people should be allowed to do what they want to do with respect to smoking, something that's legal if you're over 16.

As illustrated by the quotes below, participants across the continuum expressed concerns about potential adverse consequences of smokefree policy, including potential hardship or

challenges for smokers (particularly new admissions, individuals on long-term sentences or those they considered vulnerable), possible violation of prison rules (e.g. sale of contraband tobacco) and perceived risks of conflict or violence:

WP4.B05.Service user: "[...] if you've been smoking for 30 years and you've got your routine, and routine is big things in prison, especially with lifers, [...] they'll get really upset when people mess up that routine."

WP4.E04.Smoker: "[...] stopping smoking in prison...that won't bother me. But you'll find the rest of them will. And then that will affect me and that's the part that worries me. The last thing I want is [other people] running about [...] fighting and all the rest of it."

WP4.D05.Ex-smoker: "[...] the prisoners will find another way of getting [tobacco]. That's the nature of things. Then when it becomes scarce like that it becomes valuable. When it becomes valuable it creates prisoners getting into debt..."

At the time of the interviews, some people in custody were responding to the impending smokefree policy by proactively contemplating, planning or trying to make changes to their smoking behaviour. A key factor driving such changes was wanting to retain personal agency (*"I wanted to stop while it was still my choice rather than being forced into it"* WP5.E30.Ex-smoker), as well as to make it easier to manage without tobacco post implementation. This was particularly evident in the WP5 interviews which occurred some months before the smokefree policy came into force. Several participants said they would not have been trying to reduce or stop smoking if a smokefree policy was not imminent:

WP5.A11.Service user: "I think most folk are only really doing it [trying to stop smoking] as well just because of that ban, ken. Like, if it wasn't for that, I don't think anybody would really be giving it a second thought."

Conversely, other people in custody were reportedly deploying avoidance strategies in light of the impending policy, at least at the time of these interviews. These included: believing or hoping that smokefree rules would not be actually implemented as planned; deciding to "deal" with the smokefree policy only "when it happens"; or speaking about some people's intentions to continue smoking illicitly (although there were also concerns this may lead to sanctions and increased debt).

While it was implied that implementation of the smokefree policy would (mostly) necessitate smoking abstinence in prison, some participants raised factors which may influence return to smoking after release from (smokefree) prison, including the strength of a person's desire to not smoke; the length of the period of smoking abstinence/cessation in prison; and experience of cravings:

WP5.C20.Smoker: "The short termers [and] guys on remand. They'll be saying... 'I've only got a few months and then I'll be out there for good', so I'd imagine [...] a lot of them will be smoking again not too long after [leaving] prison."

With respect to social and situational factors, being around non-smokers and participation in work/other activities were perceived to support non-smoking out of prison, while the ready availability of tobacco, drugs and alcohol in wider society was mentioned as a potential driver back to smoking:

WP4.A03.Service user: "I'll do it [abstain from smoking] while I'm in here, but I [...] it's when I get out, you know, sitting in company and that, having a drink or whatever [...]"

Opportunities, challenges and participant recommendations for policy implementation

Participants described several issues which might present opportunities or create challenges for implementing smokefree prison policy. These are presented below under

three headings: role of smoking in prison, prison smoking cessation services and motivations for quitting smoking for people in custody. The section concludes by providing an overview of participants' suggestions for aiding policy implementation.

Role of smoking in prison. The role of smoking in prison has the potential to make implementation of smokefree prison policy particularly challenging. As seen elsewhere, the use of tobacco in prisons in Scotland was often habitual and an important part of participants' daily lives. For example, some described established smoking routines or rituals in terms of their first cigarette of the day, smoking after meals and when socialising with other people in custody. It was explained that breaking ingrained smoking habits could be especially challenging inside prison, even among those who had already made an active quit attempt. This was attributed to a perceived lack of replacement activities, the normative nature of being a smoker in this context and the sense of comfort it provided some participants to keep to a fixed routine:

WP5.D2. Service user: "And that's six days on the Champix, and I don't feel any desire for a cigarette, I've no craving there. If it [tobacco] was there, I'd probably roll one without even thinking about it, just through the habit, kind of thing. So my problem now is, it won't be so much not smoking a cigarette, it'll be breaking the habit of, the routine you've had for years, kind of thing. You get up in the morning, you make your tea, you sit at your table, you roll a cigarette, and you have a cigarette with your tea [...]"

Boredom was frequently cited as a driver of smoking in prison. Participants used smoking to pass or break up time, particularly while locked in their room (cell) when it was perceived there was little to do beyond drinking tea or coffee, watching TV and smoking:

WP5.C21. Service user: "[...] it's [smoking] a distraction, isn't it? It's just something [...] you're bored. ...sitting watching the telly [...] I'll have a wee cup of coffee and a wee smoke and it's a wee [...] it's a pleasure."

Alternative ways of keeping their hands and minds occupied, both in and out of their rooms, had helped some people in custody to reduce or quit smoking and included physical exercise, writing letters, puzzles or games and participation in work, programmes or activities:

WP4.F5. Smoker "[...] I've cut right down [since having a job in the prison gym], I was smoking like 20 cigarettes a day, 20 burns a day. And now I'm only smoking I think it's about 11, and I feel like I can run more in the gym, I can lift more weights, when I'm playing football I'm not out of breath as much [...]"

Another potential driver of tobacco use in prison was the high levels of stress and anxiety which some participants experienced during their sentence as a result of factors such as appearing in court, arguments with other people in custody or staff, or receiving "bad" news. In the absence of alternative coping strategies, such as being able to go for a walk or spend time with friends and family, it was suggested that smoking could help with management of mood and emotions:

WP5.A8. Smoker: I stopped for eight weeks, and I stopped [again] for six weeks. But it's, when you get bad news, or something happens in the hall [residential wing], and you just can't hold that anger in. So rather than explode, you go and have a roll-up, and then that leads to another.

Prison smoking cessation services. The overall work of prison smoking cessation services was widely praised by participants who had attended sessions and four key strengths of these services were described, which might support implementation of smokefree policy. First, for some participants, regular CO monitoring facilitated compliance and provided confirmation of the health benefits of abstinence:

WP5.E29. Ex-smoker "[...] the smoking [cessation] programme for me wasn't about so much the products, it was more along the lines of somebody just checking you [via CO monitoring]."

Second, expert advisors were seen as a valued source of information and support for smoking cessation:

WP5.B39.Service user: "[...] she's [smoking cessation advisor] been really good [...] She's like, she's gave me great tips, she's sent me colouring in stuff and puzzles through the post, just the first sort of few weeks just to, she's been very supportive, very, like didn't let it get you down, she's still trying with me although for the past four weeks I've been, because for about three or four weeks I didn't smoke at all and then, no I had one roll up within that whole time [...]"

Third, some participants appreciated the opportunity in group-based sessions to meet others who were trying to give up and talk about ways of overcoming barriers to smoking cessation (in prison):

WP5.C26.Service user: "[...] for me, that's been quite helpful, hearing the other guys that are successful, that are really trying. And have stopped the same as me. And how they've filled their time in or their head's been at the time [...].I found that quite helpful."

Finally, some participants spoke about making greater progress in their quit attempts after services prescribed a form of stop-smoking pharmacotherapy which they found effective:

WP5.E31.Ex-smoker: "[...] the wee mint lozenges and the patches helped me, but other guys prefer just patches and inhaler, other guys just prefer the mints [...]. I think it's down to individual preference."

At the same time, four main challenges in accessing and deriving maximum benefit from prison smoking cessation services were identified. First, some in the WP4 interviews expressed beliefs that conventional smoking cessation support or treatments did not work for them personally or that willpower alone was key to successful cessation. It is possible that such views could inhibit meaningful engagement with services by some smokers who might otherwise benefit.

Second, some participants wishing to use the specialist cessation service reported unpredictable or lengthy waiting times, which had hindered quit attempts:

WP4.C06.Service user: "[...] if you're saying to yourself I want to try and give up [...] and then you put your name down thinking it's going to be a week, two weeks, three weeks down the line and it's two [...] going in to two months you'd end up saying [...]Give us a fag! Forget it!"

Third, some participants indicated that aspects of the behavioural support provided by the stop smoking service had not met their needs, in terms of pace, format of sessions or the level of support given by advisors. CO monitoring could create worry for participants due to the risk that individuals might be asked to leave the cessation service sessions if readings exceeded the cut-off:

WP4.B03.Service user: "all they [cessation services] do [...] is give you maybe a box of patches, mints, the inhaler thing or the spray. [...] they give you the product and let you do it by yourself [...]. There's not enough support, like [...] I don't know, like, it's a habit so you need [...] it's not [...] it's [...] I wouldn't say it is the same as a drug habit, but it's still a habit you need help."

Finally, there were reports of delays and mix-ups regarding the prescribing of medications to support smoking cessation in prison. Variation in the use of these medications across services could create difficulties if people were transferred between prisons:

WP4.A3.Service user: "They're slow in here with the prescriptions. Uhm-hmm. They want you to stop smoking, right, so you do try. And then they don't come across with tablets. They're being late with giving you your next prescription. And that can knock you, kind of, back."

The data reflected the considerable efforts that were already underway in some prisons by the time of the WP5 interviews (in May–June 2018) to enhance capacity and improve delivery of smoking cessation services and the distribution of NRT, to assist in the lead up to smokefree rules:

WP5.E32Ex-smoker: I put an application in [to access smoking cessation service]. I was lucky that they'd started doubling the numbers at that point, so I got on it relatively easy.

Motivations for quitting smoking in people in custody. As noted above, participants expressed different levels of motivations for wanting to quit smoking or not, presenting both opportunities and challenges for smokefree policy implementation. Several health-related factors were important drivers for smoking cessation in people in custody, including a desire to improve health, experience of smoking-related health problems, or illness or death of a family member who smoked:

WP4.C01.Smoker: " [...] I find it hard to breathe. That's why I want to stop [...] And that's the only reason. Like, smoking doesn't bother me. I've done it all my days [...] I don't like it, but it's what I do, isn't it. But I can't breathe. So I need to stop."

Some participants said that making positive changes in other behaviours, such as drug use or physical activity, could provide impetus to try to stop smoking:

WP4.B5.Service user: I think that [going to the prison gym] was more what prompted me to do it [try to quit smoking] as well, because it was like doing sprints in the hall, you know, you're struggling, you know, you're like, I can't keep [...] Or also the fact you're seeing it as a bit pointless because you're not really going to progress if you're still, if you're plating quite a lot of food and then if you're still smoking as well...

Financial considerations were also potentially important in facilitating attempts to reduce or stop smoking in prison:

WP5.D6. Service user: "A complete honest reason [for trying to quit], I couldn't afford it [tobacco] [...] okay and obviously my health as well but it was I couldn't afford to smoke. You know, I'm on a £10 [weekly] wage. I like my coffee, I want to buy the odd treat, I want to buy shampoo, I want to buy normal things. So, when I was smoking that took up the whole budget, so it was either smoke or get other bits of fruits and things."

A final factor potentially incentivising quitting for people in custody was positive social influence from peers or family members. For example, some participants said they wanted to quit partly for their partners or children or because others in their family had managed to give up:

Interviewer: What made you decide, right, I'm gonna give it a go, I'm gonna try and stop again?

WP5.A15.Smoker: "To stop? Because I've got two young kids, and I thought, well for me, personally for my health, and I don't want them to see me smoking, when I get out, know what I mean? Just to stop for health issues, and all. Because none of my family really smoke, even my partner, he doesn't smoke either, so it's really me."

By contrast, factors potentially influencing low levels of motivations to quit smoking among some people in custody were related to associations of smoking with physical and psychological rewards (e.g. relief of cravings), pleasure and mood management. There were also some misunderstandings of the benefits of quitting or the health risks of smoking. For example, one older smoker suggested that quitting smoking was futile since the '*damage is done*' (WP4.A5.Smoker). Another participant spoke about a time in the past when he believed that he was not at risk of cancer because his older relatives who smoked had not developed cancer.

Participant suggestions for aiding policy implementation. When participants were asked how they thought that implementation of smokefree policy could be aided in prison (given that a decision had already been taken to prohibit the use of tobacco in Scottish prisons from 30 November 2018), support was expressed for measures such as improving access to the prison smoking cessation service; resolving issues in respect of prescribing of medications to support cessation; introducing e-cigarettes; providing more activities to

replace smoking or keep someone occupied; and expanding communications and dialogue with people in custody about the approaching policy change. People in custody also expressed a concern that suitable strategies should be in place post-implementation to help smokers, including opportunities to access nicotine substitutes and behavioural support for new arrivals into prison:

WP5.C22. Ex-smoker: "I think they would need some nicotine replacement straight away as they come in. Like not leaving it [...] Because most people that come in are usually alcoholic, drug dependent so if they're already coming off them, adding nicotine into the mix as well which [...]"

WP5.D1. Service user: I think [...] they should [...] reconsider [...] what kind of product you buy to help you stop smoking [...] they have to get a decent vaporiser [e-cigarette]

Discussion

This study exploring perspectives of smokefree prison policy in people in custody in Scotland contributes to the evidence base available to help inform jurisdictions that are considering removing tobacco from their prisons in the future. The overall study of which this is a part has several novel features, including that data are being collected across a whole prison system before, during and after transitioning to becoming smokefree on 30 November 2018. The data collected for this analysis gives voice to a diverse range of people in custody (with respect to sex, remand or convicted status, sentence length and use of prison smoking cessation support) and prisons (in terms of their size, population mix, geography and security level) in the months leading up to policy implementation. Findings from the study have helped to inform the process of creating a smokefree prison estate in Scotland.

Prior to the announcement of the decision to implement smokefree prison policy in Scotland (in Phase 1), levels of support for smokefree policies were lower among people in custody than staff (Brown *et al.*, 2018). This subsequent (Phase 2) study found that opposition to prison smokefree policy among people in custody centred on concerns about the fairness and legitimacy of smokefree rules and apprehension about the potential adverse impact on smokers. This is consistent with previous qualitative studies exploring prison smokefree policy from the perspective of people in custody (Dugdale *et al.*, 2019; Woodall and Tattersfield, 2017). As we have discussed elsewhere (Brown *et al.*, 2018), it is important that potential concerns among stakeholders are mitigated in preparation for smokefree prison policy as far as possible. A novel finding of this study is that, at least in this pre-implementation period, several participants expressed more positive or nuanced views on prison smokefree policy due to anticipating potential benefits of smokefree rules, for themselves and prison and staff populations. One potential reason for differences between the findings of this study and previous research might be differences in the ways in which the smokefree prison policy was announced and implemented in Scotland, in comparison with other countries including England and Wales. Scotland took the bold decision to prohibit the use of tobacco in all 15 prisons simultaneously (from midnight on 30 November 2018). In the period leading up to prisons becoming smokefree in Scotland, national and local communication campaigns (including count down posters in residential halls and other parts of all prisons, and use of prison radio/print media) were undertaken to raise awareness in people in custody, staff and visitors of the date for the forthcoming national legislative change and to signpost smokers to enhanced smoking cessation services. Evidence from across TIPs suggest that communications were very effective in raising awareness, even if people in custody did not always fully agree with the decision to implement comprehensive smokefree rules, and at times wanted more detail. By contrast, Dugdale *et al.*'s (2019) study, conducted in four prisons in the north of England, found that 'awareness about the ban and the implications of this appeared generally poor' among participants (Dugdale *et al.*, 2019, p. 123). Differences in the size of the prison estate in England and Scotland may have been a key factor influencing variations in the ways in

which smokefree policies were implemented across the UK, although that is not to diminish the implementation success achieved by the Scottish Prison Service ([The Scotsman, 2019](#)) and key partners including the NHS. In addition, this study might have been able to capture a more diverse range of perspectives on the forthcoming smokefree policy by using one-to-one interviews rather than focus groups, as it appeared that some participants were more comfortable challenging some of the prevailing narratives about smokefree rules within the privacy of an interview.

The findings, including participant recommendations, highlight several factors that might support successful implementation of smokefree prison policy in other jurisdictions in the future. The implications of our study are consistent with other literature on smoking cessation in prison ([Djachenko et al., 2015](#); [Eadie et al., 2012](#); [Richmond et al., 2009](#)) and implementation of the smokefree prisons ([Foley et al., 2010](#); [Hefler et al., 2016](#); [Collinson et al., 2012](#)). First, the importance of ensuring that imprisoned smokers have access to low cost or free evidence-based smoking cessation interventions, is widely recognised ([Butler and Yap, 2015](#); [Donahue, 2009](#); [Ritter, 2014](#)) and is confirmed by this study. Given that imprisoned smokers might feel some ambivalence or even hostility about *enforced* smoking abstinence, it is important that considerable efforts are made to reduce barriers to engagement with services – as far as resources permit. This includes delivering communication campaigns in prisons that are clear, wide-reaching and connect with people in custody's expressed values and aspirations in relation to health and well-being, personal finances and family life. Using multiple channels and involving frontline staff and peer mentors in this process, as happened in Scotland, has the potential to increase the effectiveness of communication. Consideration could be given in the future to developing family-based smoking cessation interventions in prisons, aligning with wider aspirations to strengthen connections and quality of relationships between people in custody and their families ([Scottish Prison Service, 2017b](#)), as well as reaching out into the community to reduce inequalities in smoking and health. Second, the findings support the need for campaigns to acknowledge and sensitively challenge strong associations of smoking with pleasure and stress relief in the prison setting. At the same time, the role of structural factors in shaping health behaviours is highlighted in participant accounts of smoking, and these need to be considered when introducing measures to facilitate smoking abstinence. As a minimum, it is important to ask people in custody for their ideas for low-cost measures that would make a difference to them in managing without tobacco, such as more games/activities/hobbies that can be used to pass and break up time spent in their rooms (cells) or offering greater access to valued facilities such as the prison gym. Third, our findings suggest the need for measures to minimise the numbers of people returning to smoking after leaving a smokefree prison, e.g. establishing systems for onward referral of prison populations to community smoking cessation services.

A key strength of this study is that interviews were conducted with a relatively large and diverse sample of people in custody at an important moment when prisons were preparing for a cross-national implementation of smokefree prison rules, at a time of high rates of smoking ([Scottish Prison Service, 2015](#)) and entrenched smoking norms. This paper has therefore been able to describe in detail some key opportunities and challenges of tackling smoking in the prison setting, providing evidence that may be valuable for jurisdictions seeking to implement similar smokefree policies.

An important limitation of the study is that there may be differences in smoking-related opinions and experiences of people in custody who opted to take part in interviews compared with those who did not. Another limitation is differences in the intended aims and data collection and analysis processes for WP4 and WP5 (as described in "Methods"). However, our preliminary, separate, analyses of the two data sets identified very similar themes, and we believe that the depth of insight generated by combining the two datasets outweighs any minor methodological differences between the two work packages.

In conclusion, our study exploring smokefree prisons from the perspectives of people in custody has several novel features which extend the evidence base. The findings suggest

several factors that might support successful implementation of smokefree prisons in other jurisdictions. They include (increased provision of and access to) evidence-based smoking cessation support in advance of smokefree policy, effective and comprehensive communication campaigns, consideration of broader structural determinants of health in prison and ongoing measures to reduce rates of return to smoking post release.

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Chapter 6. Post-implementation perspectives on smokefree prison policy: a qualitative study with staff and people in custody (Publication 4)

6.1 Introduction

Smokefree prison policies were introduced in Scotland from 30th November 2018. Understanding how smokefree prison policies are viewed and experienced by PiC and prison staff in Scotland is important in being able to build a comprehensive picture of facilitators, barriers and success factors for policy implementation and perceived intended and unintended positive/negative consequences. These insights can support ongoing management of smokefree policies in Scotland by identifying problems, as well as opportunities to maximise benefits. Sharing experiences of PiC and prison staff in Scotland may also provide impetus for change and inform policy and practice in other jurisdictions who are reviewing prison smoking restrictions. The current study sought to meet these aims, and contribute to a very limited evidence base, by interviewing PiC and carrying out focus groups with prison staff, 6–8-month post implementation of smokefree prison policies in Scotland. Rechargeable e-cigarettes had gone on sale in prisons just prior (September 2018) to the implementation of smokefree rules and continued to be sold post-implementation for PiC to use in rooms (cells) and designated outdoor areas in prisons.

Publication 4 aims to contribute evidence to the following RQs:

- **RQ1:** What views on smokefree prison policies are held among prison staff? What are the reasons for support or opposition to smokefree prison policy among prison staff?
- **RQ3:** What views on smokefree prison policies are held among PiC? What are the reasons for support or opposition to smokefree prison policy among PiC?
- **RQ5:** What are the perceived positive/negative impacts of smokefree prison policy for prison staff, PiC and prison systems?
- **RQ6:** What are the perceived facilitators, barriers and success factors for implementation of smokefree prison policy?

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Title page

Post-implementation perspectives on smokefree prison policy: a qualitative study with staff and people in custody

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Abstract

Background

A comprehensive smokefree prison policy (SFPP) was introduced in Scottish prisons from November 2018, reflecting concern about inequalities in occupational exposures to second-hand smoke (SHS), and tobacco-related harms among people in custody (PiC). We aimed to address a gap, whereby few studies have sought to understand SFPP from the perspectives of people living and working in prisons.

Methods

As part of a comprehensive evaluation, 14 focus groups with staff and 23 interviews with PiC were conducted 6-8 months post-implementation of SFPP in Scotland. Data were analysed using the framework approach.

Findings

Our study found that new restrictions on smoking had been widely accepted by PiC, after a period of adjustment which was less troublesome than participants had anticipated. Benefits of the SFPP for the safety and comfort of staff and PiC who were no longer exposed to SHS, and additionally for the health of PiC who were now smoking-abstinent, were widely acknowledged. Drawbacks of the SFPP, such as difficulties managing without tobacco and use of alternatives (e.g. e-cigarettes and changes in use of illegal drugs), were also reported. Contraband tobacco was not reported to be a major problem following prisons becoming smokefree.

Conclusions

The findings strengthen evidence that SFPPs can be implemented without causing major disruption and highlight the need for removal of tobacco to be underpinned by careful planning, partnership working, and ensuring the availability of support for smokers. Experiences from Scotland may be of interest, and some comfort, internationally for jurisdictions considering smoke-free rules in prisons.

Key words: smokefree policy; prisoner health; qualitative research; prison staff

1 Introduction

The WHO Framework Convention on Tobacco Control (FCTC)(1) requires countries to protect people from exposure to second-hand smoke (SHS) in work and indoor public spaces. When smokefree policies, were introduced in Scotland from March 2006, prisons had partial exemption in the legislation: people in custody (PiC) were permitted to smoke in designated rooms (their cell) and outdoors. In July 2017, the Scottish Prison Service (SPS) and Scottish Government announced their intention to strengthen smokefree policies in prisons(2), in light of new evidence on SHS levels in Scotland's prisons(3). The new comprehensive (indoor and outdoor) smokefree prison policy (hereafter SFPP) was implemented in November 2018.

Very few studies (see evidence from USA(4, 5), Australia(6), Taiwan(7)) have qualitatively explored the perspectives of people working or living in prisons with recently implemented SFPP, and none have comprehensively investigated these across a prison system.

Findings from these existing studies vary, potentially reflecting differing penal contexts and implementation strategies. Nonetheless, the published literature highlights possible challenges of prohibiting smoking in prison (e.g. contraband tobacco(4, 5, 7), misuse of NRT(6)), and factors which may facilitate (e.g. effective communication strategies, good smoking cessation/abstinence support(5, 6)), or impede, a more successful transition to SFPP. This study seeks to build on and enhance the very limited number of previous qualitative studies, by exploring experience of the recently implemented SFPP from the perspective of staff and PiC, providing evidence on opinions on SFPP, success factors and positive/negative consequences once the policy had embedded. The data were collected 6-8 months post-implementation of SFPP, as part of the most in-depth

evaluation of SFPP to date (the Tobacco In Prisons study, TIPs). Previous papers from TIPs(8-10) and a complementary study of e-cigarette use in prison(11) report views of staff and PiC, *prior* to implementation of the SFPP using different participant samples.

2 Methods

Ethical approval was granted by the SPS Research Access and Ethics Committee, and University of Glasgow, College of Social Science Research Ethics Committee (ref:400150214).

2.1 Research settings, sampling and recruitment

SFPP was introduced in Scotland's prisons from 30th November 2018. It prohibits PiC from smoking tobacco in any areas of prisons; staff have been prohibited from smoking or using e-cigarettes within prison grounds from 2008. The transition to SFPP was underpinned by a wide-reaching implementation strategy, including enhancement of existing smoking cessation support (see (12)) and new rules allowing PiC to purchase and use e-cigarettes in designated areas (see (11)).

For this study, we analyse data from staff focus groups in Scotland's 14 'closed' prisons, involving 95 participants in total. A focus group conducted in Scotland's open prison was excluded from this analysis, since the issues staff raised were very distinct, as PiC spend some time in the wider community and have access to tobacco whilst outside the prison. Points of contacts in prisons were asked to arrange one focus group, ideally comprising up to eight staff in various work roles, and a mix of staff who did or did not smoke and/or vape. In addition, four staff with leading roles in the implementation of SFPP at local (prison) level were interviewed, to capture their perspectives. The combined staff focus group and

interview sample (99 participants) comprised: 75 men and 24 women, 83 never- or ex-smokers and 13 current smokers (3 did not report their smoking status) and 26 who reported ever using e-cigarettes. Most participants were SPS staff (a few were healthcare staff); most (n=66) were prison officer grade and had worked in prisons for 11+ years (n=62).

Interviews with PiC were conducted in six (closed) prisons, selected to represent a range of prisons in terms of size and population (men/women, young people/adults, individuals who were untried/convicted and serving shorter/longer sentences). We chose in-depth interviews, rather than focus groups, with PiC for methodological, ethical and practical reasons (e.g. allowing PiC to speak freely on a potentially sensitive topic, without concern about the complex social and interpersonal dynamics among PiC). Through the staff points of contact, researchers asked that PiC with varied characteristics that might have a bearing on experiences of SFPP (i.e. sex, remand/convicted status, and sentence length) were invited to participate. Of the 23 PiC interviewed (18 men, 5 women; 12 aged <40, 11 aged 41+), all were convicted, 13 serving sentences of 4 years or less and 10 of 4+ years. All were former smokers; although this was not an explicit inclusion criterion it reflects the previously high rates of smoking in prisons prior to smokefree policy.

2.2 Data collection

Data collection took place 6-8 months post-SFPP. Focus groups with staff ranged in size (3-14 people). Two joint interviews were conducted at the request of the participants; the remaining interviews were one-to-one. Interviews/focus

groups were conducted with only AB and/or KH present, in a room/area in the prison where participants could not be easily overheard.

Topic guides for interviews and focus groups largely covered similar topics for PiC and staff, informed by the study objectives, existing literature, research team discussions and input from staff within the prison service. They included: participant background; opinions of SFPP; perspectives on living/working in a smokefree prison (including successes/challenges and positive/negative consequences); compliance and enforcement of SFPP; and lessons learned.

2.3 Data analysis and reporting

De-identified transcripts were thematically analysed using the framework approach, following a process described elsewhere(11). AB led on developing a thematic framework based on close reading of transcripts, study objectives and existing literature. To synthesise and distil material prior to interpretation and abstraction, data were organised under themes, and summarised (by AB and DM) and displayed in a grid format (row=focus group/interview; column=theme) in NVivo 12. AB reviewed all summaries to check consistency and interpretations. AB led the detailed thematic analysis by comprehensively and systematically searching framework grids, and reviewing data excerpts, to identify and compare perspectives and experiences of SFPP. Using an iterative process, different dimensions of the data were organised into themes and sub-themes, which were then structured to produce a coherent narrative. All authors agreed final themes based on reviewing transcripts/substantial involvement in data collection. Extracts, selected to evidence and illustrate key findings, are attributed to participants (staff/PiC) using a serial number (letter randomly allocated to each prison for this paper and participant number), an indication of

smoking/vaping status (S=smoker; ExS=ex-smoker; NS=never-smoker; V=vaper; ExV=ex-vaper; NV=never-vaper) and, for staff, whether they worked in a prison officer (PO), managerial (MGR) or other role. Supporting extracts are presented in Tables 1-4.

3 Results

We present findings on two key areas: factors contributing to successful implementation; and benefits and challenges of SFPP.

3.1 Perspectives on policy implementation and success factors

Both staff and PiC indicated that, after a relatively brief adjustment period, the SFPP was widely accepted by PiC and had become the norm in prisons (Table 1; Q1, Q2). However, as before the ban(8, 9), SFPP remained more popular among staff than PiC post implementation. Popularity amongst staff was partly explained by the immediate impact of SFPP in reducing SHS levels in prisons (Table 1; Q3). Concerns about restricting PiC's smoking choices, and about the necessity and consequences of SFPP continued to be voiced in interviews with PiC (Table 1; Q4, Q5) and, to a lesser degree, by some staff. However, some PiC were, on balance, supportive of the SFPP because of perceived benefits for them personally, and for non-smokers who were now protected from SHS (Table 1; Q6).

The introduction of the SFPP was generally perceived to have been less troublesome than staff and PiC had anticipated (Table 2; Q7, Q8), and prior fears about the possibility of significant disorder (e.g. 'riots') in prisons had not materialised. Several factors which might have aided the relatively smooth implementation of SFPP were identified. First, the transition to SFPP was reportedly well managed by the SPS at local and national levels (Table 2; Q9,

Q10). The decision to stop tobacco sales several weeks prior to the implementation date, and permitting local policies for the removal of tobacco, were highlighted as important aspects of the implementation strategy, since they increased the likelihood of PiC cutting down smoking in anticipation of SFPP.

Second, good communication and engagement with PiC and staff were perceived as important to the successful implementation of SFPP. 'Countdown' posters around prisons were generally said to have ensured widespread awareness of the impending SFPP (Table 2, Q11), although it was acknowledged that some PiC had not taken notice of information. Hence, considerable efforts were also made to engage with PiC to understand their views, identify potential solutions to problems, signpost to cessation support, and get feedback on issues such as e-cigarettes (Table 2; Q12). However, some staff said they would have appreciated earlier communication about the detailed implementation strategy (e.g. introduction of rechargeable e-cigarettes) (Table 2; Q13).

Third, collaboration with and input from a range of stakeholders was perceived by prison staff to have been instrumental to success, given the scale and complexity of the task of prohibiting smoking among PiC. This included partnership working across health and justice services (NHS and SPS), engagement with staff and PiC on SFPP and broad acceptance of SFPP among staff and PiC (Table 2; Q14, Q15).

Fourthly, ready availability of smoking abstinence/cessation support in prisons was considered essential for SFPP implementation preparation (Table 2; Q16). There was discussion in some staff groups about how this support might need to evolve under smokefree rules. For example, one group discussed integrating

support for nicotine addiction with other health promotion activities, to take a more holistic approach to improving PiC's health going forward.

Finally, the de-normalisation of smoking in many contexts following the 2006 legislation prohibiting smoking in most public places in Scotland was perceived by prison staff to have aided implementation of SFPP (Table 2; Q17).

3.2 Perceptions of benefits and challenges of smokefree prison policy

The perceived benefits and challenges of SFPP were discussed in relation to three main themes, as discussed below.

3.2.1 Elimination of SHS

The widespread elimination of SHS from prisons was viewed as a significant gain for the health of staff (and also PiC) (Table 3; Q18). In some instances, staff discussed experiencing fewer symptoms, such as asthma, a sore throat and eye irritation, following SFPP. Staff, and some PiC, typically commented on improved sensory experiences, such as no longer smelling tobacco smoke in the air, improved appearance and cleanliness of the prison, and their clothes no longer smelling of stale smoke (Table 3; Q18, Q19). Long-serving staff reflected on how markedly SHS in prisons had reduced over several decades following successive tightening of smoking restrictions. Some expressed disappointment that progress to entirely smokefree prisons had not been quicker.

3.2.2 *Smoking abstinence/cessation*

PiC generally acknowledged general health benefits of stopping smoking, and some reported improvements in their own health (e.g. in fitness, breathing) following implementation of SFPP (Table 3; Q20, Q21, Q22). However, negative physiological and psychological impacts of SFPP were also raised by PiC and staff, particularly for new arrivals with insufficient funds to purchase (rechargeable) e-cigarettes to help them adapt to a smokefree environment. While these negative impacts reportedly reduced over time for some PIC, others continued to struggle with the SFPP. Some still sought effective strategies for managing nicotine dependence and coping with common problems such as poor mental health or low mood (Table 3; Q23) or filling time in prison. A few PiC said that mood changes attributed to smoking abstinence contributed to tension and conflict in prison (Table 3; Q24) and a few reported unwanted weight gain (Table 3; Q25).

The data also highlighted potential opportunities and challenges for extending the benefits of SFPP when abstinent smokers are released from prison. Some suggested the experience of health or financial benefits from not smoking in prison may increase people's motivations to give up smoking long-term, and strengthen beliefs that there is something to lose from smoking relapse (particularly for individuals on longer sentences) (Table 3; Q26). There were some suggestions that use of NRT or e-cigarettes may help some individuals to avoid smoking relapse after leaving prison. Conversely, the association of smoking with pleasure, comfort and relaxation, a history of co-use of tobacco and cannabis, and returning to environments where tobacco is available/smoked were cited as important potential barriers to remaining smokefree post-release (Table 3; Q27 and Q28).

3.2.3 Use of alternatives to tobacco

Both participant groups spoke about the use of alternatives to tobacco, as discussed below.

E-cigarettes, NRT and illicit tobacco

It was reported that most former smokers had switched to vaping following the SFPP. Levels of support for e-cigarettes in prisons remained stronger in PiC than staff, who voiced more diverse views about the advantages and disadvantages of e-cigarettes in prisons. In both samples, benefits of e-cigarettes for implementation of SFPP (Table 4; Q29, Q30 Q31, Q32) and supporting abstinent smokers in the prison population were discussed.

However, staff reported that e-cigarettes had also brought challenges relating to: uncertainties about any health risks of exposures to e-cigarette vapour; misuse of e-cigarettes for drug taking; and creation of extra problems for staff to manage, such as when PiC run out of e-liquids (Table 4; Q33, Q34). Other potential risks relating to e-cigarettes in prisons (raised by both staff and PiC) included concerns about continued nicotine addiction amongst PiC (Table 4; Q35), user safety and cost. Some staff voiced doubts about whether e-cigarettes would be of net benefit in the long-term, and worried that hard-won gains to health from SFPP may be undermined by widespread e-cigarette use.

Data from both staff and PiC suggested that use of illicit tobacco was not a significant problem within Scotland's (closed) prisons post-implementation (Table 4; Q36, Q37) (although there was reported to have been a period immediately post-implementation when stockpiled tobacco was in circulation).

The data suggested that the scarcity of illicit tobacco may reflect: general acceptance of SFPP among PiC; availability of e-cigarettes; risks that illicit

smoking will be detected; and a potentially lower risk-return ratio for smuggling contraband tobacco compared to other items (e.g. illegal drugs) (Table 4; Q38, Q39). The data also suggest that misuse of NRT products (patches) in smokefree prisons is not a major concern (Table 4; Q40).

Psychoactive substances/illegal drugs

SFPP was perceived by some staff and PiC to have contributed to changes in the use of 'new' psychoactive substances (NPS), which had already been identified as a problem within the prisons several years prior to the legislative change (13). These included changes to the method of ingesting NPS (using repurposed e-cigarettes) and suggestions that some PiC may have taken NPS for pleasure/escapism in the absence of tobacco; as a cheaper alternative to vaping; and/or as a replacement for previous consumption of smuggled cannabis (which had become increasingly difficult since the sale of tobacco, rolling papers and lighters stopped in prison) (Table 4; Q41-Q43).

Both PiC and prison staff spoke about the adverse impacts of use of these unpredictable substances by PiC (Table 4; Q44). Concerns about NPS use among PiC included risks for users of acute injury or death and impairment of cognitive functioning, with some participants describing people behaving like 'zombies' after continued use of NPS. For bystanders, particularly staff, concerns centred on risks from passive exposure to NPS or from assault or accidental injury by those under the influence.

By contrast, in some instances SFPP was said to have contributed to a decrease in other illegal drug use in prison, by reducing ease of access to materials such as lighters and rolling papers (Table 4; Q45).

4 Discussion

Our findings, collected as part of a comprehensive evaluation of smokefree prisons (3, 8, 10, 11, 14), suggest SFPP has been widely accepted by PiC and prison staff in Scotland, and the removal of tobacco had been less troublesome organisationally than either group expected. Benefits of the SFPP for the health, safety and comfort of staff following the wholesale reduction of SHS, verified in post-implementation measurements (14), and the health of PiC no longer smoking were acknowledged. However, participants also reported difficulties of enforced smoking abstinence for certain groups (e.g. new admissions) and use of alternatives to tobacco in prisons (e.g. e-cigarettes, change in use of illegal drugs). The findings support our earlier studies (8, 9) that showed that support for SFPP is higher overall among prison staff than PiC and that opinions and experiences of SFPP are complex; it is possible for individuals to be positive about some dimensions of smokefree rules, but negative about others, as similarly illustrated in our contemporaneous surveys of prison staff and PiC (15).

The findings contribute new knowledge about SFPP in several ways. First, they enhance understandings of SFPP, for example by highlighting ways in which some PiC may (re)frame smoking abstinence in prison as beneficial for themselves and others, while also confirming the need to be attendant to the physiological and psychological challenges of enforced smoking abstinence. Second, in contrast to other studies (6, 16), contraband tobacco and misuse of NRT were not reported to have been major problems in prisons in Scotland at the time data were collected. These findings may be explained by high levels of vaping among PiC in Scotland as an alternative to tobacco, in contrast to other jurisdictions which have reported problems with illicit tobacco markets (5, 7, 16, 17) or NRT misuse(6). Third, although there were a few suggestions from PiC

that smokefree rules were contributing to tensions or conflict in prisons, a striking finding from the study is that the introduction of SFPP had been less troublesome organisationally than many PiC and staff expected, reportedly causing no significant disorder in any prisons. This corroborates reports of SFPPs in Australia and the USA (6, 17), and contradicts common media portrayals(18). Finally, our study strengthens understanding of successful factors for creating smokefree prisons by being the first to comprehensively investigate the perspectives of prison staff *and* PiC across a prison system post-implementation. The findings provide deeper insight into the role of factors such as extensive planning work; comprehensive communication and engagement with stakeholders; and supporting PiC to abstain/quit smoking in successfully implementing SFPP (see also(6, 19)). Scotland's experience also highlights the importance of collaborative working between health and justice services, and, we believe, the benefits of access to findings from ongoing, independent research to inform strategies (e.g.(3)); all findings from TIPs were shared at the earliest opportunity with the multi-sector team responsible for smokefree implementation. The findings will be of interest to jurisdictions considering SFPP. Lessons from implementing SFPPs in Scotland can also support further public health achievements for PiC.

In relation to e-cigarettes in smokefree prisons, our novel findings are mixed and discussed in more detail elsewhere (11, 20). Perceived benefits for SFPPs were widely discussed by staff and PiC. However, many also voiced concerns about potential risks of e-cigarettes for users, staff (bystanders), and the prison system. These will be key issues for jurisdictions which allow the sale of e-cigarettes to weigh up when planning for SFPP. Strategies for minimising risks from e-cigarettes are likely to be beneficial if the decision to sell e-cigarettes in

prisons is taken in other countries, including learning from Scotland's novel guidance about ways to support PiC who wish to cut down or stop vaping (11, 21).

These data were collected in the final phase of the most in-depth evaluation to date of the implementation of a SFPP, conducted across an entire prison estate at three points in time: pre-announcement of plans to implement SFPP, in the lead up to implementation and post-implementation. In this paper, we have included the perspectives of staff in every (closed) prison in Scotland and perspectives of PiC from six prisons which collectively house diverse populations. The size and composition of the samples enabled a range of views and experiences to be captured, and so expand understandings of smokefree prisons considerably. Another strength is that data were collected using well-established and robust methods, 6-8 months post-implementation when staff and PiC had been able to adjust to the SFPP and possibly had a clearer sense of its benefits and drawbacks.

In relation to limitations, some perspectives (e.g. of people on remand) may be missing from this study, either because data were not collected from PiC in every prison in Scotland or due to self-selection bias. Future studies could investigate the views of PiC who are never-smokers. This part of the TIPs study was not designed to quantify potential impacts of the smokefree policy; ongoing work is analysing prison and health service data on outcomes of interest in an economic analysis of the SFPP

The findings highlight the need for ongoing investment to maximise the long-term gains of SFPP. In future work we intend to explore how best to support PiC to remain smokefree post-release.

In conclusion, the findings substantially strengthen international evidence that SFPP can be implemented, and maintained, without major organisational disruption. Factors promoting success include: careful system-wide planning, engagement and communication strategies, collaboration across relevant organisations and services, and supporting PiC to abstain or quit smoking, including through evidence-based interventions.

Key points

- Few previous studies have examined comprehensive (indoor and outdoor) smokefree prison policy (SFPP) from the perspective of people living and working in prisons.
- This paper makes important contributions to the literature in respect of understanding perceived benefits, challenges and success factors.
- Findings strengthen evidence that SFPPs can be implemented without causing major disruption in prisons (e.g. riots).
- Results can inform implementation of SFPPs in other jurisdictions in the future, and can support further public health achievements for PiC.

Author contributions

AB led on planning fieldwork, collecting, managing and analysing the data, and wrote the manuscript, with input from all authors. DM, supervised by AB, contributed to data management, aided interpretation of the results and commented on the manuscript. KH directed the overall TIPs study, contributed to design of fieldwork, collection of data, and interpretation of the results and commented on all drafts of the manuscript.

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Conflict of interest

The authors have no conflict of interest to declare.

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Extracts

Table 1: Acceptance and support for the smokefree policy		
i. <u>Acceptance of the smokefree policy</u>		
Q1	Staff	D3 (PO RES-ExS-ExV): And I think everyone, they [PiC] all seemed to just accept it, and get on with it. Which we all were grateful for.
Q2	PiC	I: What's your thoughts on the ban now it's been about six months or so since it's been in place...? B3 (M-ST-ExV): Part of life.it is what it is, it's there, it's not going away, get on with it now.
ii. <u>Positive/negative opinions of smokefree policy</u>		
Q3	Staff	N6 (PO RES-S-V): [Everybody's] working environment deserves to be smoke-free whether it is a jail or an office or whatever.
Q4	PiC	G2 (F-LT-ExV): I think people should be allowed to smoke, it's like your human right...Even if it was an outdoor thing...when you go out for exercise you can smoke or something...
Q5	PiC	C4 (F-ST-V): ...you've got a hundred lassies [women]...all with their own mental health problems. You're taking away the one thing that...that could be the difference.
Q6	PiC	L2 (M-ST-V): I really thought it [smokefree rules] was a great thing, not just for myself, health-wise, but, also, it's not fair on officers when they come into a smoky situation.

Table 2: Implementation success factors and challenges		
i. <u>Ease of transition to the smokefree policy</u>		
Q7	PiC	B1 (M-ST-ExV)people were anticipating a lot of the things they thought were going to happen... But [smokefree policy] came in then everything that people thought was going to happen never happened...it just went...quite peacefully. There was no major uproar...
Q8	Staff	K1 (MGR-ExS-V): I think that we were expecting a lot of issues, a lot of problems, and there's not been, there's genuinely, it's been really smooth.
ii. <u>Management of transition to the smokefree policy</u>		
Q9	Staff	H13 (MGR-ExS-NV): ...it was a well-planned move. It was. No doubt about it. And it was done really well.
Q10	PiC	L4 (M-LT-V): If you're talking about instituting the whole thing from scratch, I think they done it all right. Yes, I think they [SPS] done it all right. My judgment.
iii. <u>Communication and engagement</u>		
Q11	PiC	M1 (F-LT-V): Every month there was a new poster. Four months to go. Three months to go. And we were like, "We know, we know!".
Q12	Staff	P2 (MGR-NS-NV)...for me the communications were the key thing and that was local communications, national communications. There was a variety of different models....[publicising the smokefree policy on] the canteen sheets, so making people aware...[it was] coming. The posters, the focus groups. [A staff member from] HQ came...and did various groups with prisoners and, kind of, started explaining with the vapes and I think communications, you just can't get enough communication. But it came to a stage where a few prisoners were saying..."you're not banging on about this smoking thing again!" That's when you realise you've, kind of, reached a stage where they know what's happening.
Q13	Staff	M6 (PO-NS-NV): I would have like to have seen the vapes come in a wee bit faster.... M5 (PO-NS-NV): It's true there wasn't enough, there wasn't enough time [between the introduction of rechargeable e-cigarettes and the date of the ban]...I think that was just because of the...procurement side of things... It...would have been much, much, better for us to get the vapes in an awful lot earlier.
iv. <u>Collaborative working</u>		

Q14	Staff	<p>A5 (PO-NS-NV): ...Huge amounts of work done by the addictions teams, the gymnasium, the work party officers. Everybody's contributing...we're asking their [PiC] opinions. And I think that had a massive input.</p> <p>A8 (UNKNOWN): I think you're probably right...getting their [PiC] opinions, and involvement, and ideas, as well.</p> <p>A4 (PO-S-EXV): Yeah, it goes a long way, doesn't it.</p>
Q15	Staff	<p>R1 (MGR-NS-NV) ...it's been a massive change and I'm really proud of it. ...The team working was the best I've ever done with the NHS....real collaboration, real laughs, real shared concerns, real action plans. "Oh I'll pick that up", "oh actually I'm someone that can do that", rather than... Not that it's always that things tend to be forced, but you've got your remits, they've got their remits. Even though you've got the same goals, it doesn't mean that you're necessarily going to work in a way that synergises everyone. But this did.</p>
v. <u>Smoking abstinence/cessation support</u>		
Q16	Staff	<p>E4 (MGR-EXS-NV): I think the NHS...the smoking cessation team that was in here did a great job... So I think they contributed a big part. Massive.</p>
vi. <u>Prior implementation of smokefree policies in public places</u>		
Q17	Staff	<p>B1 (PO-S-V): I think also the smoking bans in pubs and things like that, people are probably are more aware of the fact that smoking is changing. Like over the last maybe five years, people have known that you can't smoke in public places and things like that. And there's more of a change happening. So, I think it's easier to accept [smokefree prison policy]..when something else is changing regarding smoking...I would say that maybe helped them basically.</p>

Table 3: Tobacco-related benefits/drawbacks		
<i>i. Elimination of SHS: health and comfort</i>		
Q18	Staff	<p>C1 (MGR-ExS-NV): I think it's [smokefree policy] fantastic.</p> <p>I: In what way?</p> <p>C1 (MGR-ExS-NV): Well, one, I don't have to smell the smoke. Two, I don't have to breathe in smoke. Three, the air is certainly a bit fresher, a bit cleaner. And generally, overall, it's to the benefit of everybody's health that we're not having to breath in smoke or smell it.</p> <p>I: What do others think about that?</p> <p>C4 (PO RES-NS-NV): Yes, I agree. A great improvement to our working life because the halls [residential areas] are quite enclosed, so, you know, you [would] smell it off your clothing when you went home.</p>
Q19	PiC	<p>C5 (F-ST-V): ...the room's so much cleaner because before you would have to, sort of, clean the walls and things like that when you went in. Like, you'd spray cleaning stuff on the walls and it would just run, like, yellow, see with the nicotine. And even, like, you'd go into a room, you wouldn't actually notice it but...until you clean it and you're like, oh...that's horrible...before it would...like, you go out the room, you come back in you're like...it...stinks of stale smoke. Whereas, like, it's a lot fresher. It's a lot nicer.</p>
<i>ii. Smoking abstinence/cessation: perceived health benefits</i>		
Q20	PiC	<p>M2 (M-ST-V): Well to start off with I thought it [smokefree policy] was a joke. But obviously after a couple of weeks you adjust to a life without cigarettes...you start to feel a bit better...with your breathing. Your lung capacity, your fitness, everything starts picking up.</p>
Q21	PiC	<p>I: what about in terms of how you feel in yourself health wise, are you seeing any differences?</p> <p>M3 (M-ST-ExV): Massive difference, massive. I can play football again, I can go to the gym and I'm not out of breath. I've noticed a difference in my skin complexion and my eyes. Aye, I just feel a lot better, aye. If you'd seen me when I came in you would know what I was talking about. I feel a lot better.</p>
Q22	Staff	<p>I5 (Other role-Ex-V,):although it [stopping smoking] wasn't their choice, they're actually feeling the benefits, better breathing health-wise, more energy, things like that. So overall so far the feedback we've got has actually been really positive. Even from the guys that are just like, oh I'm still going to smoke when I go out, but see at this moment in time, I feel great...So there's a lot that are really positive about it [smokefree rules].</p>

iii. <i>Smoking abstinence/cessation: unintended adverse consequences</i>		
Q23	PiC	C3 (M-ST-V): I did enjoy smoking when I was in prison, it's one of the small things that I had...was having a smoke, and a coffee... just to kind of, de-stress, kind of...relax. And now it's been taken away, I feel like my anxiety has increased a lot.
Q24	PiC	O1(M-LT-V): Because tobacco is not around...it's causing a lot of aggro, as well...a lot of more fights now, than what there used to be, and more arguments....more tension.
Q25	PiC	M4 (M-LT-V): I feel better. I've got angina and stuff, so I do, I feel better. The thing is, and this is the catch...because I have so much more money, I buy myself more treats [from the prison shop]. So, I've put on [weight] since [stopping smoking].
iv. <i>Facilitators/barriers to continued smoking abstinence/cessation post release</i>		
Q26	PiC	L3 (M-ST-V): What's the use of going back to it [smoking] if you've been off it that long. What's the use of picking it up when you get out after two year? That's a total waste.
Q27	PiC	C2 (M-ST-V): I miss it, yes. It doesn't get any easier...you're thinking, you're like, the day you get out [of prison] to get a cigarette...
Q28	PiC	G1: it's easier not having smoking in jail, because I wouldn't go to vaping, but outside, if you feel like that, you can just go to the shop, and you're not going to just buy a packet of fags for about a tenner, have one fag and chuck it away, so it does worry me that I'm going to go back to it...

Table 4: Use of alternative substances		
i. <i>E-cigarettes</i>		
Q29	PiC	B4 (M-ST-V) ...: if they didn't get put [e-cigarettes] in, there would've been riots, 100 per cent. That made it a little bit better.
Q30	PiC	B2 (M-LT-V): [E-cigarettes are] better for you anyway. At least there's something there...Rather than just cold turkey, man.
Q31	PiC	I: ...do you think it was the right thing for them to start selling vapes in prisons? M1 (F-LT-V): That's quite a hard...It's like yes and no. Because we don't know the long term effects, but I think it's stopped maybe people causing riots and things like that. I think it's cut down on a lot of things, a lot of negative things that could have happened if nothing was put in place...
Q32	Staff	G4 (PO-NS-NV): I think the transition's been better than we anticipated...the vaping...seems to have made it a lot easier. ... I think it would have been really difficult for someone who smoked 40 years and... I1: There's a few others nodding there. G5 (PO-NS-NV): Yeah. I'd agree with that. I think there was a lot of anxiety before it came in...And I think the vaping, the smoking cessation sessions certainly helped.
Q33	Staff	J5 (PO-ExS-NV): I've got to admit, it's gone better than I imagined it'd ever go, with the vapes coming in. Is it going to be the right decision? We'll probably not know that for 30 years, will we? ... Until we see in maybe 30 years what the outcome of the vapes are, we're not going to really know if it's been a good thing or a bad thing, because I feel it's still too early.
Q34	Staff	O1 [PO-NS-NV] ...there's still obviously concerns, regarding the vapes...It seems like an appeasement thing, from the SPS, in order to bring the smoking ban in easier for them. Also, I don't know how much health effects against staff that the e-cigarettes can have on us, as well. And obviously, they're [PiC] adapting them, as well, for the NPS ['new' psychoactive substances] ... too. So, basically in my opinion, we shouldn't have any vapes.
Q35	PiC	M5 (M-LT-V): For me personally, they're taking us off the smoking, so we can't get the smoke, but they're giving you something else. And to me, that doesn't make sense. If they want us to be smoke free, then make it smoke free. It's like, being [addicted to] heroin and saying, no, give us that, but here's methadone. It's the same sort of thing. It defeats the purpose, taking them off one thing and giving them...to me, that's madness.
Contraband tobacco and misuse of NRT		
Q36	Staff	Q1 (MGR-ExS-ExV) I'm sure there's probably some tobacco in here, but it's such a rare find for us. So either they've hid it so well that we don't see it, we don't smell it, or it isn't here. I would suggest that [tobacco's] not here because people have taken to the vapes.

Q37	PiC	C2 (M-ST-V).... there's obviously smells when you get tobacco in the halls, you know what I mean, obviously everything comes in, drugs, tobacco, you know what I mean, but not very often [for tobacco].
Q38	PiC	M2 (M-ST-V):...what's the point in bringing something in to the prison, especially if it's [tobacco] strong smelling. It's going to go out throughout the prison as people's noses are going to start picking up like dogs, like [makes sniffing noise]. And the prison guards are going to smell it as well. So it's quite a noticeable smell.
Q39	PiC	M4 (M-LT-V): The people who want to smuggle things in...don't want to smuggle in big lumpy bits of tobacco. They want to smuggle in drugs or wee tiny things or stuff like that. I: Easier to get in or worth more? M4 (M-LT-V): It's worth a lot more and far easier to get in.
Q40	PiC	C3 (M-ST-V): When the ban first came in...People were getting [NRT] patches, and smoking the patches. I don't know why, but apparently that's what people were doing. I: Is that still going on, do you think? C3 (M-ST-V): I don't see people with patches anymore...I don't think patches get used at all now, it's just vapes, that's the only sort of replacement that I hear about now, is vapes.
ii. <u>Psychoactive substances/illegal drugs</u>		
Q41	Staff	L3 (PO-S-NV): Are they transferring their nicotine habit and replacing it by using other substances as a coping strategy? We don't know but I have seen, over the last six months to a year, more and more people [under the influence of NPS]... [...] L1 (PO-ExS-NV):NPS would probably have come in anyway, but the methods of using it [using e-cigarettes], we've given them an easier... L3 (PO-S-NV): Opportunity.... [...] L1 (PO-ExS-NV)....Whereas beforehand, people were using their lighters [for drug taking]
Q42	PiC	L1 [M-LT-ExV]: They cut them [e-cigarettes] open and use the element out of them to smoke 'legal highs' [NPS], but you're going to get that anywhere you go. Any jail you go to. I: And [was] NPS...an issue before the smoking ban? L1 (M-LT-ExV): Aye. Well, you must have seen the news and all that. It's in every jail ... it's...horrible, man. Horrible, horrible thing, man. I don't understand how anybody can smoke that shit. Aye, you're going to always get somebody abusing something in the jail. If they can't get a lighter, they always find some mad way of getting a light.
Q43	PiC	M5 (M-LT-V) ...I think...there's quite a big thing about illegal highs [NPS], and things. And there's a few problems in the hall because of that...So if they cut out, even just cutting out that [e-cigarettes], in that hall alone, it would be totally different. Because then, when they're not being able to do that [because

		lighters are difficult to obtain], so they're not getting all uptight and angry. If it's not there, it's not there, know what I mean. There's guys getting into debt over it, there's guys getting hurt over it. There's officers getting hurt over it.
Q44	Staff	D2 (EXS/NV, MGR, 11-20 YEARS): [Because of NPS].You've got people [having hallucinations]...swimming up a section [residential area]. A guy lying on the floor, like the floor's electric.. And this all sounds make-believe, they've no idea what they're taking. [...] they are that close to dying. And then, two days later, they're back on it [NPS].
Q45	PIC	G3 (M-LT-ExV): See to be honest, it [smokefree policy] has kind of helped me a lot because it has kind of taken all my thing like drugs and everything away because I only ever smoke weed and I smoke it with tobacco, so no tobacco I don't smoke weed.

Chapter 7. E-cigarette use in prisons with recently established smokefree policies: a qualitative interview study with people in custody in Scotland (Publication 5)

7.1 Introduction

In preparation for the introduction of smokefree prison policies in Scotland, a number of measures were taken to support PiC to quit or abstain from smoking, including expansion of pre-existing smoking cessation services, and the introduction of a small number of e-cigarette products for purchase from the prison canteen (Brown et al. 2020c). While evidence from the general population on the use of e-cigarettes as a smoking cessation tool is promising (Hartmann-Boyce et al. 2020), e-cigarettes remain controversial within public health. For example, because of concerns that e-cigarettes may divert some people away from long-term smoking or nicotine abstinence, the effects of long-term e-cigarette use are unknown and the motives and actions of industry actors may not align with public health goals (Britton et al. 2016; Rooke et al. 2016; St. Helen and Eaton 2018; Weaver and Nolan 2015). Similar ideas about the benefits and risks of e-cigarettes in the general population are reflected in commentaries about e-cigarettes in prison, alongside discussion of issues which are more salient in or particular to prison settings (Curry et al. 2014; Young-Wolff et al. 2015).

To help inform evaluations of the net benefits and risks of e-cigarettes and support development of effective regulation and policy, a growing qualitative evidence base is emerging on experiences of e-cigarette use among UK adults (Farrimond 2017; Hartwell et al. 2020; Notley et al. 2018; Notley et al. 2021). However, few qualitative studies have explored e-cigarette use among seldom heard groups and in residential smokefree settings. The current study sought to contribute to the knowledge base available to stakeholders responsible for the care of PiC, and similar groups, by providing first-of-its kind empirical evidence on e-cigarette use by PiC living in prisons with smokefree policies. The study involved interviewing current or former e-cigarette users in Scottish prisons, 6-10 months after the implementation of smokefree policies. At the time of data collection, PiC had a very limited choice of e-cigarette products as compared to the general population. Two brands of closed tank

rechargeable e-cigarettes were sold on the canteen at the time; pre-filled e-liquids were sold in a relatively small number of combinations of nicotine strengths and flavours. PiC who purchased e-cigarettes from the canteen were permitted to vape in their rooms (cells) and in any designated outdoor areas.

Publication 5 aims to contribute evidence to the following RQ:

- **RQ4:** What are PiC's perceptions and experiences of using e-cigarettes in smokefree prisons, including the perceived risks and benefits?

Publication 5 is available at: <https://doi.org/10.1093/ntr/ntaa271>

Brief information about publication history can be found with the online publication.



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Original Investigation

E-cigarette Use in Prisons With Recently Established Smokefree Policies: A Qualitative Interview Study With People in Custody in Scotland

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Abstract

Introduction: E-cigarettes were one measure introduced to help people in custody (PiC) to prepare for and cope with implementation of comprehensive smokefree policies in Scottish prisons. Our earlier study explored experiences of vaping when e-cigarettes were first introduced and most participants were dual tobacco and e-cigarette users. Here we present findings of a subsequent study of vaping among a different sample of PiC when use of tobacco was prohibited in prison, and smokefree policy had become the norm.

Methods: Twenty-eight qualitative interviews were conducted with PiC who were current or former users of e-cigarettes in prison, 6–10 months after implementation of a smokefree policy. Data were managed and analyzed using the framework approach.

Results: PiC reported that vaping helped with mandated smoking abstinence. However, findings suggest that some PiC may be susceptible to heavy e-cigarette use potentially as a consequence of high nicotine dependence and situational factors such as e-cigarette product choice and availability in prisons; issues with nicotine delivery; prison regimes; and use of e-cigarettes for managing negative emotions. These factors may act as barriers to cutting down or stopping use of e-cigarettes by PiC who want to make changes due to dissatisfaction with vaping or lack of interest in continued use of nicotine, cost, and/or health concerns.

Conclusions: E-cigarettes helped PiC to cope with smokefree rules, although concerns about e-cigarette efficacy, cost, and safety were raised. PiC may desire or benefit both from conventional smoking cessation programs and from interventions to support reduction, or cessation, of vaping.

Implications: Findings highlight successes, challenges, and potential solutions in respect of use of e-cigarettes to cope with mandated smoking abstinence in populations with high smoking prevalence and heavy nicotine dependence. Experiences from prisons in Scotland may be of particular interest to health and/or justice services in other jurisdictions, with similar legislation on

e-cigarettes to the United Kingdom, who are planning for institutional smokefree policies in their prisons or inpatient mental health settings in the future.

Introduction

Smoking fulfills social, cultural, and psychological functions in prisons, such as maintaining personal or group identities, as a means of coping with boredom, environmental stressors, or poor mental health, and as a form of currency.¹⁻⁴ Given this, and beliefs that prohibition of smoking reduces the already limited choices of people in custody (PiC) and so may be seen as a “punishment” and is likely to cause hardship and other difficulties in prisons,⁵⁻⁷ it is unsurprising that there is lower support for smokefree policies among PiC than among staff.⁸ However, it is important to note a substantial minority of PiC are more supportive of smokefree rules⁴ because of desires to quit smoking or perceptions that changes in smoking policy are beneficial for themselves and others.^{7,8} The availability of e-cigarettes in smokefree prisons has the potential to ameliorate possible challenges of no smoking rules for PiC who are unwilling or unable to stop use of nicotine, and may improve the health of a disadvantaged group if e-cigarettes are used for harm reduction in the longer term.

Given the well-recognized embedding of smoking in prison culture, removing tobacco from prisons is seen to be challenging. Yet, implementation of smokefree policy in prisons in Scotland and other jurisdictions⁹⁻¹² is generally regarded as having been a success. There were no reported major incidents when the policy was implemented in Scotland.¹³ In addition, air quality measurements across Scottish prisons showed a drop of around 90% in secondhand smoke levels compared with measurements taken before the decision to implement the smokefree policy,¹⁴ confirming that it led to the virtual elimination of secondhand smoke,¹⁵ with expected health benefits for staff and PiC.

Prior to policy implementation on November 30, 2018, measures were introduced to support PiC to transition to smoking abstinence (starting from a 72% smoking prevalence¹⁶), including the expansion of existing smoking cessation services offering behavioral support and pharmacotherapy, extensive communication strategies, and strong health and justice partnership-working to support PiC to prepare for the change in smoking rules. In addition, rechargeable e-cigarettes became available in prisons for the first time (from September 2018). This was in line with contemporary expert consensus in the United Kingdom that e-cigarettes pose less risk to health than smoking tobacco, beliefs that use of e-cigarettes for harm reduction should *not* be discouraged by public policy or health professionals,¹⁷⁻¹⁹ and the fact that e-cigarettes are not covered by Scotland’s smokefree legislation. The policy on e-cigarette use among PiC in Scotland is consistent with those in place in prisons in some other jurisdictions (eg, England and Wales, Isle of Man, and some US states), and is (partially) aligned with rules in respect of e-cigarette use in other public places in Scotland and England, including those covering some National Health Service (NHS) premises.^{20,21}

However, little is known about use of e-cigarettes in prisons with smokefree policies, thus undermining evaluation of their net benefits and risks at individual and prison population levels. We previously reported on initial views and experiences of e-cigarette use (vaping) among PiC in Scotland²² when e-cigarettes were first allowed shortly *before* implementation of the smokefree policy. At

that time, e-cigarettes were novel (single-use e-cigarettes first became available for use by PiC in designated spaces in prisons from ~February 2018 and rechargeable e-cigarettes from September 2018), and PiC had very limited choice of e-cigarette products compared with the general population. Participants in our earlier study, most of whom were dual tobacco and e-cigarette users, expressed strong support for the introduction of rechargeable e-cigarettes (hereafter “e-cigarettes” unless otherwise stated) in prison, and voiced expectations that e-cigarettes would help PiC, a population with high nicotine dependence, to cope with future mandated smoking abstinence. At the time of that study, most participants’ vaping behaviors were not firmly established. Even so, some important issues with symptom relief were raised, and some expressed surprise or discomfort about the frequency/amount that they (or others) were vaping. Perceptions of benefits of switching from smoking to vaping in prison varied; however, it is notable that some participants were cautiously optimistic, especially in relation to cost, on the basis of initial experiences.

Here we present findings of a subsequent study. Our aim was to extend previous evidence by exploring views and experiences of e-cigarettes among PiC, in prisons in a jurisdiction with well-established smokefree policies (ie, when smokefree rules and vaping behaviors had had a chance to fully embed and PiC could no longer dual-use e-cigarettes and tobacco). Like our previous study, it was conducted in Scottish prisons, but with a *different* sample of PiC.

Methods

Qualitative interviews were conducted with PiC who were current or former users of e-cigarettes in prison, 6–10 months after legislative changes had prohibited smoking in Scottish prisons from November 30, 2018. Ethical approval was granted by the SPS Research Access and Ethics Committee and University of Stirling General University Ethics Panel (GUEP 497).

Sampling and Recruitment

Methods for this study were almost identical to those reported in detail for our earlier vaping study,²² conducted immediately *before* smokefree policy implementation. In both, interviews were conducted within six Scottish prisons selected to include diverse populations (by age, sex, and sentence length). The research team provided a designated staff contact (in a managerial role) in each prison with guidance on the desired sample size and characteristics. Potential participants were first approached about the study by these staff, who arranged a meeting with a research team member for those who expressed interest in participating. Taking account of the literacy and learning needs of PiC, researchers provided PiC with written and verbal information about the study and checked that participants felt informed about the study and willing to consent (those who agreed provided consent either verbally or in writing on a case by case basis) before the interview proceeded. Of the 28 participants (see Table 1) included in this analysis most were as follows: convicted ($n = 21$, 11 serving ≤ 4 years; nine serving over 4 years; one did not report sentence length); men ($n = 20$); and aged ≤ 40 ($n = 16$, two did not report their age).

Table 1. Participant Characteristics

Vaping habit	
Daily	23
Weekly or more	1
Not at all	3
Missing	1
Whether the participant had tried e-cigarettes prior to prison?	
Yes	18
No	7
Missing	3
Sex	
Male	20
Female	8
Age	
18–30	11
31–40	5
41–50	7
51–60	2
≥61	1
Missing	2
Remand/convicted status	
Remanded	7
Convicted	21
Sentence length	
3–12 mo	3
1–4 y	8
≥5 y	9
Missing	1
How long has the participant been in prison on this sentence (not asked of people on remand)	
Up to 90 d	3
3–12 mo	7
1–4 y	8
≥5 y	2
Missing	1

Data Collection

In-depth interviews (average ~43 minutes) were conducted in person in May–August 2019 (by AB, RO, KH, DE, and AF) using a topic guide covering: participant background; smoking and vaping history; experiences and perspectives of vaping in prison; and views on benefits/risks of e-cigarettes being available to PiC. Researchers could vary the question wording, topic order, and use of probes and prompts to gain additional detail or stimulate discussion. Participants were invited to raise any additional points they thought were important. In line with prison service research guidance in Scotland, no financial incentives were offered for participation.

For context, interviews were conducted prior to (Autumn 2019) media reports that discussed vaping and cases of lung injury in the United States,²³ and over a year before the first documented Covid-19 cases.

Analysis

With written/audio-recorded permission, interviews were recorded and transcribed. De-identified transcripts were thematically analyzed using the framework approach, in line with the principles and methodological underpinnings described by Spencer et al.²⁴ AB led on producing a thematic framework based on reading transcripts in light of the study questions, topic guide, and relevant literature. Transcripts were summarized into the framework grid (row = participant, column = theme) in NVivo 12 by AB, RO, DM, and AH, to synthesize content before detailed analysis. This involved writing

summaries of the data in the relevant cells in the framework grid and creating hyperlinks to transcripts to support data retrieval during the analysis process. AB reviewed all summaries to check consistency and interpretations. AB and RO identified high-level themes from the summaries and data excerpts. AB then conducted a more granular analysis of the data to understand the range of experiences and perspectives on vaping, examine patterns, and interpret meaning. Themes are presented below alongside selected excerpts from interviews, which indicate participant characteristics: prison/serial number (randomly selected for this paper to preserve anonymity), custodial (remand [R], short-term conviction [ST], long-term conviction [LT]), and vaping status (current vaper [CV], ex-vaper [ExV]).

Context

The study context is described in more detail elsewhere,²² but we summarize salient points here. Under the smokefree rules, PiC are prohibited from smoking tobacco in all areas of prison but can use a limited selection of e-cigarette products, stocked in the prison shop (“canteen”), in their room (cell) and selected outdoor areas; staff are not permitted to use e-cigarettes on prison property. The two brands of rechargeable e-cigarettes on the canteen list at the time of the interviews were closed tank systems taking prefilled e-liquids (highest strength = 18 mg/mL). The higher upfront costs for one brand are noteworthy given PiC’s restricted incomes (for some, their only income source is their prison wage which can range from ~£5 to £21²⁵ and limits on weekly expenditure are implemented). The strongest e-liquid (18 mg/mL) for the cheaper device was only available in tobacco flavor. An e-cigarette product list for prisons in Scotland is available elsewhere.²⁶

At the time of the interviews, Prison “Quit Your Way” services²⁷ were committed to providing free behavioral support to PiC opting to “withdraw[al] from nicotine using e-cigarettes.” Specific guidance²⁶ to support PiC to stop (or cut down) vaping has been published subsequently, informed by the preliminary results of this study.

Results

Background

Participants

All participants were tobacco smokers before either the smokefree policy implementation or their current imprisonment (if that commenced after November 30, 2018). Similarly to our earlier study,²² many found it challenging to imagine whether or not they would return to smoking on release from prison; however, very few expressed no or little interest in remaining abstinent. Twenty-five participants were currently using e-cigarettes (almost all daily) and the other three had tried e-cigarettes in prison but no longer vaped. In common with other vapers,²⁸ participants found it difficult to characterize their vaping habits in terms of number of vaping sessions per day or the number of puffs per session. Vaping behaviors varied between individuals and over time (see below).

Views on Making E-cigarettes Available in Smokefree Prisons

Consistent with expectations expressed by participants in our earlier study, PiC in this sample generally perceived e-cigarettes to have been an important part of the process of removing tobacco from Scottish prisons without major disruption, by providing an alternative to

smoking. They also suggested that e-cigarette availability contributed to the continuing successful implementation of smokefree rules now the policy had had at least 6 months to embed.

B2-LT-ExV: for the smoking ban, the smartest thing they did was put vapes in here.

Vaping Behaviors in Prison

Several notable features of vaping among PiC were identified. First, e-cigarettes no longer had the “novelty” status in prisons that was so salient in our earlier study. Second, vaping tended to be a habitual activity; almost all current vapers vaped daily, thus potentially developing entrenched behavior which might be difficult to change. Third, e-cigarettes were used, sometimes alongside nicotine replacement therapy, both for coping with mandated smoking abstinence, and in response to physical or psychological factors (eg, nicotine cravings, to mimic previous smoking rituals or behaviors, curiosity, seeking pleasure, feeling bored, stressed, or angry). An additional reason given by some participants for using e-cigarettes was to support a move to long-term smoking cessation, including possibly vaping postliberation as an alternative to smoking.

Fourth, some participants' accounts suggest several potentially context-specific practices of vaping had emerged among PiC by the time of the current study. There were striking descriptions of heavy or excess vaping by themselves and/or others. Some participants expressed surprise or concern about their own vaping, whereas others spoke about it as a matter of fact or as something they were resigned to. For example, there were descriptions of holding the device for extended periods while in their rooms (cells) (“if it's out of my hand people are surprised, and it is constant” C1-IT-CV); taking many and/or heavy draws during vaping sessions (“I'm just constantly pressing it and just keeping...inhaling, inhaling, inhaling” M1-R-CV); and consuming what participants perceived as a relatively high number of e-liquids per week and running out of supplies between deliveries from the “canteen.” Some participants' accounts of vaping might be described as a form of “binging” behavior, potentially indicating some challenges with self-regulation of nicotine intake when using e-cigarettes and possibly resulting in short-term effects from too much nicotine.

L2-LT-CV: When you're vaping, ...you don't even notice it [nicotine], until I've been sitting going at it constantly for 10, 15 minutes, and I start to feel a little bit sick, and then I think, that's probably nicotine overdose right there.

Other vaping practices were also described; these participants reported more moderate use of e-cigarettes in prison in terms of regulating e-liquid intake, and vaping behavior. Vaping practices in prison often varied over weekdays/weekends, and over the course of someone's imprisonment, with examples of moving from heavier to more moderate vaping and vice versa.

PiC's vaping practices (including frequency of vaping and number of e-liquids refills consumed) were potentially influenced by a combination of individual-level and situational factors. Individual-level factors included someone's level of nicotine dependence, the degree to which they found vaping pleasurable, and the extent to which they had become habituated to vaping. Flavored e-liquids continued to be part of vaping's appeal for many participants, as did aspects of vaping which replicated (eg, hand movements and inhaling/exhaling vapor) or improved (eg, smell and taste) elements of smoking.

In relation to situational factors, extended periods of time in their rooms with limited distractions or alternative activities, particularly over the weekend, provided significant opportunity and perceived reasons to vape, particularly since vaping was described as an easy and enjoyable habit and a strategy for managing negative emotions in prison, especially boredom.

L1-R-CV: you end up over [vaping]...you're in your cell, you're bored, you don't know what else to do, and you just start puffing. And you end up getting to the point like that, I'm going to end up with nothing [no e-liquids].

Heavy or “binging” vaping practices were also potentially facilitated by difficulties some were experiencing in managing nicotine dependence with the products available in prison. Some participants (eg, B5-ST-CV) expressed frustration that the e-cigarettes sold were not “strong enough.” Others were not using the more powerful of the two devices available for reasons of cost or personal preference, or were reluctant to use the strongest (18 mg/mL) e-liquid sold for the cheaper device because it was only sold in a flavor (tobacco) they did not like. Thus, the e-liquids used were partly determined by individual preference in respect of flavor and nicotine strength and partly by practical considerations in terms of what e-liquids could be purchased or borrowed in prison. For some PiC, e-liquid flavor was a greater driver of product choice than nicotine strength in a context in which a very limited range of products are available to purchase.

Experiences and Perspectives on Vaping in Prison

Experiences of Vaping

As in our earlier study, disposable e-cigarettes were unpopular except as an interim measure for new admissions, or when purchased occasionally to mimic certain aspects of smoking. With respect to rechargeable e-cigarettes, some participants had adapted relatively quickly to a different system of nicotine delivery and were finding vaping to be a reasonably functional (M3-ST-CV: “does the job”) or satisfying activity, in light of mandated smoking abstinence. However, some still “missed” certain aspects of smoking, for example, nicotine buzz or the act of rolling tobacco.

Others indicated negative experiences, and frustrations, with vaping in prison. This partly reflected significant ongoing difficulties relieving symptoms, even if e-cigarettes were regarded as “better than nothing” in the circumstances. For some it also resulted from limited motivation to ever quit smoking and perceptions that vaping was not something they were doing in prison by choice (“vaping) was...what's the word? It was forced on us” O3-ST-CV). In contrast, for others it reflected strong aspirations to end nicotine dependency and worries about whether they would manage to quit vaping in the future.

A more prominent issue in this study compared with our earlier study was that some e-cigarette products were reportedly faulty/lacked durability, leaked, or tasted burnt. These problems appeared to result from erroneous product use, incorrect handling of e-liquids, poor maintenance of devices, or repurposing of e-cigarettes for use of new psychoactive substances (which may have adverse consequences for safety in prisons²⁹):

C6-ST-CV: ...all of a sudden it [e-cigarette] stops working... you're not supposed to tamper with them, but people do try and mess about and find out what's going on...they've also been used for taking drugs...

Some voiced strong comments about the need for a greater range of e-cigarette products in the canteen, including more powerful devices, and greater variety of e-liquids strengths/flavors.

Health Benefits and Risks of Vaping

Our previous study noted uncertainty, and some concern, among participants about the safety of e-cigarettes, partly because of the absence of long-term studies. This was also clear in the current study, with some strong statements that this generation of vapers was like “guinea pigs” (L3-LT-CV). It was suggested that PiC were distinct from other vapers, as the only group in society who were mandated to abstain from smoking at all times.

C2-ST-CV: ...I've got...split minds about it [e-cigarettes in prison]...It's the long-term things that bother me, I don't want to be like one of those...people that ended up dying because of the asbestos...I don't want to be like mice being tested on...But there are hundreds of people doing it outside as well, so I don't know.

Perceptions of the balance of health risks and benefits of vaping also continued to vary. These ranged from participants stating that vaping is “like switching your cola for diet [cola]” (B1-ST-CV), to others suggesting that e-cigarettes may cause similar or greater harm than tobacco. Views on the absolute/relative safety of vaping were potentially (mis)informed by a range of factors, including some that were specific to prisons. Perceptions of perceived short-term health effects of switching to vaping potentially influenced views on the safety of e-cigarettes more generally. While some reported perceived improvements to their health (eg, improved sense of taste, reduced respiratory problems) after switching to vaping in prisons, a few attributed some more acute health problems (eg, bleeding gums, chest pains, lung problems) to vaping. General concerns were raised about the potential for vaping to contribute to lung damage/disease and about transmission of illness through sharing e-cigarettes:

M4-Missing-CV: People will go into other people's rooms to get a puff of their vape...everybody is [doing it]. I've got a viral infection; I think it might have been caught [from] one of the vapes.

Other factors potentially influencing perceptions of safety included media and word of mouth stories about vaping, including accounts of supposed links between vaping and “popcorn lung”: “...there's something about them [e-cigarettes] I don't trust...[...].there's a boy [PiC]...went away down south [to an English prison]...And he...says that down there, the other inmates are suffering from popcorn lung... (O2-LT-ExV).

Regarding prison-specific factors, prison policy on e-cigarettes was potentially informing perceptions of “safety.” There was a suggestion that the distribution/sale of e-cigarettes in prison (and indeed wider society) were indications of product “safety”: “...obviously, it's not [bad for you], or obviously they wouldn't be getting sold” (C4-R-CV). Hence, some participants questioned the logic of restricting vaping indoors in prisons on health grounds, or found the rules confusing:

M6-ST-CV: if they're [e-cigarettes] not harming anybody, I don't see why we can't smoke [vape] them out in the hall...?

Cost and Access

Participants' expenditure on e-cigarettes varied, reflecting use patterns, product choices, and individual financial resources. Some remarked on the potential positive financial implications of switching

from smoking to vaping in prison, such as being able to use cost savings to buy healthier items from the canteen or afford increased family phone contact:

G2-ST-CV: I don't run out of [phone] credit now...It's definitely a plus...giving up smoking, definitely...you're...saving a lot of money [by switching to vaping].

Nonetheless, a prominent theme was concern about the affordability/value for money of vaping in prison. These perceptions potentially stemmed from some believing that vaping was a less pleasurable alternative to smoking and was driven by circumstances rather than by choice; perceptions that closed-system devices were not good value for money; and concerns about the relatively high price of products, for example, for PiC with very low incomes (who previously had had the option of low-cost pipe tobacco prior to the smokefree policy):

L6-LT-CV: If you're living on a [basic] wage...You could buy one packet...[of e-liquids per week]. That leaves you, what, two pounds to get your coffee, teabags, sugar, phone calls... Toiletries...it would be better...if the refills were bigger or... you could buy the wee ... bottles you fill up yourself....

Specific challenges were discussed in relation to meeting the upfront costs of vaping in prison (eg, because of initial delays in accessing money for new admissions), the cost of replacing devices or chargers, and balancing spending on e-liquids and other canteen items/savings. These cost factors potentially contributed to difficulties which some were experiencing in managing nicotine dependence in prison after the smokefree policy.

Similar to tobacco products pre-smokefree rules, participants described practices of mutual support, which had developed in relation to accessing e-cigarette products. Examples included someone leaving their device for a friend when they were released, and letting others take a few draws from their vape or loaning them an e-liquid if they ran out. However, it was noted that these arrangements could lead to irritation or tensions (“You're constantly fighting over a vape” B3-ST-CV) among PiC, although the data suggest problems were not dissimilar to those previously caused by tobacco.

Additionally, it was reported that e-cigarettes, like tobacco pre-smokefree rules, had become part of the (unofficial) prison economy, creating another source of conflict and debt. As the quote below illustrates, prefilled e-liquids were not easily divisible into small quantities and so were less convenient than tobacco to share/trade:

B4-ST-CV: But people can get into a lot of debt and then they can come to the next canteen and you'll not have enough money to buy the...oils [e-liquids].

E: That used to happen with tobacco – people got themselves into tobacco debt?

B4-ST-CV: Tobacco was a bit easier though to deal with because you could just rip a bit off the tobacco and give somebody that and they'd be happy, but you can't give them half a [e-liquid].

Some expressed a strong desire for the prison service to explore options for easing the financial burden of vaping on PiC, and for improving prompt access to e-cigarettes (or alternative nicotine products, depending on individual preference) for new arrivals.

Future E-cigarette Use

Current vapers differed in their ideas about whether or not they might continue vaping, both within prison and after release, and many expressed ambivalence or uncertainty about what the future in general might hold. Key reasons for potentially continuing to vape

in future included finding vaping enjoyable or believing it had benefits as an alternative to smoking or as a smoking cessation aid while in prison and potentially after release:

O1-LT-CV: yeah [I'll continue to vape in prison], because there's no other alternative. Like, if you can't smoke tobacco then you'll use the vapes because it's the next best thing.

L5-R-CV: using it in the prison has made me think what it's like to use it...I've thought, well, maybe at first when I get out, I can mix the two, and then gradually go down to just using the vape.

However, reasons for potentially cutting down or quitting vaping in future, or for having already done so in prison, were also provided. These included negative experiences of vaping; worries about "safety" ("it's not as bad as smoking. But you've still got health issues that come with it" C5-R-CV) or cost ("if you save...£30 a week it's a lot of money." C3-LT-ExV); wanting to end any dependence on nicotine; not wanting to replace one "habit" with another; and changes in circumstances which reduced/eliminated the need to vape (eg, distractions or access to tobacco postrelease).

Some expressed concerns that making e-cigarettes available in prison might be detrimental to long-term smoking or nicotine cessation, and some voiced regret about their own uptake of vaping in prison. For instance, the quote below illustrates the role of situational and psychological factors in driving uptake of vaping by a participant who would like to move beyond, rather than feel "trapped" (C1-LT-CV) by, nicotine dependence.

C2-ST-CV: I would...rather...have stopped smoking [withdrawn from nicotine] when I came in...I wasn't bothered about that vape until about three weeks into my sentence...taking my medication away, putting my stress up [were reasons for vaping] definitely.

PiC who want to reduce or stop vaping may benefit from support to achieve their goals; e-cigarettes were viewed by some as habit-forming and potential situational and psychological barriers to making behavior change in prison were mentioned. Suggestions for measures included, incorporating e-cigarette users into existing "Quit Your Way Prison" services, including offering nicotine replacement therapy, and for options to purchase lower strength e-liquids to reduce nicotine intake.

C6-ST-CV: I don't think it's going to be easy [to quit vaping]... in here you know you've got to drop from 18mg (e-liquids) to 12mg and then from 12mg to nothing, at the moment. It's not feasible for people to gradually reduce nicotine intake with e-liquids...just now.

Discussion

To our knowledge, this study is the first to internationally explore e-cigarette use across several prisons in a prison system that has become smokefree. Using rigorous methods for data collection and analysis, it provides new insights on e-cigarette use, presenting novel qualitative data collected from PiC in Scotland 6–10 months after smokefree policy was successfully introduced. It extends and complements our previous study of vaping,²² which involved interviews with a different sample of PiC, conducted in a very specific context, that is, very soon after rechargeable e-cigarettes were introduced, when tobacco was still permitted and very few were using e-cigarettes exclusively. Findings from the current study suggest that vaping in Scottish prisons continued to be strongly influenced by

circumstances (ie, smokefree rules) and a desire to fulfill needs previously met by smoking. Consistent with expectations expressed by PiC in our earlier study, vaping was seen as an important tool to help them manage under smokefree rules and was replicating some of the psychological needs (eg, countering boredom) and cultural functions of smoking, as is the case for many ex-smokers in the general population who vape.²⁸ Many of the factors influencing vaping behavior in prisons mirror those for smoking, although participants' vaping habits did not necessarily replicate their previous smoking habits. For those PiC not wishing to stop nicotine use, e-cigarettes may potentially support long-term tobacco harm reduction, but further studies are required to test this hypothesis.

In contrast to our earlier study, there were more striking descriptions of heavy or excessive use of e-cigarettes amongst PiC. This type of use may be driven by "compensatory" behaviors in a population with high levels of nicotine dependence³⁰ and no access to tobacco, and by factors such as enjoyment, use of e-cigarettes for emotional regulation, and boredom. There is evidence of compensatory behavior (eg, puff numbers and duration) from general population studies of vaping under high/low nicotine conditions.³¹ It is worth noting that the products available in UK prisons complied with the EU limit of less than 20 mg/mL nicotine content.^{32,33} This may be insufficient for some heavy smokers and result in more frequent or intensive vaping (the "compensatory" behavior mentioned above) to avoid symptoms of nicotine withdrawal. However, it is unclear from evidence published to date whether heavy/"compensatory" vaping has been observed in other groups under institutional smokefree policies, for example, mental health service users, including in the United Kingdom, where nicotine limits for vaping products apply.

Heavy/"compensatory" use of e-cigarettes is likely to be of some concern in justice and health services, as it may place strain on the finances of people relying on very low incomes, lead to feelings of frustration, dissatisfaction, and discomfort if it does not provide adequate craving relief,³¹ or be contrary to an individual's goals for nicotine reduction or cessation. The implications for physical health are unclear. Questions remain about potential links between heavy vaping of (low) nicotine concentration e-liquids and higher exposures to formaldehyde,³¹ and the effects of continued vaping at any level are not yet fully known.

Consistent with other user groups,^{34–36} poor experiences with vaping, health concerns, cost, and not wanting to continue to use nicotine were reasons for wanting to reduce or stop vaping. It will be important in future studies to explore whether PiC go on to develop higher or lower tolerance levels for (dis)continuing vaping compared with other groups of vapers given some distinct push–pull factors in prisons, for example, absence of tobacco, limited e-cigarette product availability, and some specific vaping norms and practices among PiC. We are unable to compare our results to other studies of e-cigarette use in prisons in other jurisdictions, since none, to our knowledge, have been published.

Overall, the findings suggest that making e-cigarettes available in prisons in Scotland has supported individual smokers and the prison service to successfully undergo a potentially very challenging process of change. This enabled smokefree rules to become the new norm in prisons, protecting nonsmokers from secondhand smoke exposures. Yet the findings also signal a need for future studies of e-cigarette use in prisons. In particular to determine the balance of potential gains if e-cigarettes are adopted long-term for harm reduction against any negative effects if e-cigarette use principally becomes a new form of (potentially unwanted and costly) dependence in prison. Although

many PiC may find e-cigarettes more acceptable than conventional smoking cessation treatments in smokefree prisons, some feel strong dissatisfaction about not having greater control over their behavior and/or have concerns about use of a novel and habit-forming product in prison. It will also be important for ongoing monitoring to understand the needs and experiences of these groups. In the absence of evidence on the longer-term implications of e-cigarette use in prisons, other jurisdictions opting to permit vaping among PiC may wish to consider implementing measures to minimize any unintended negative consequences, as has been the case in Scotland (see below). Other jurisdictions could consider making e-cigarettes available in prisons on an interim basis only, to reduce potential problems. However, such a policy may seem to be at odds with understandings of smoking dependence as a chronic condition³⁷ and would erode the choices of PiC.

The study is novel and has utilized robust, well-established methods for sampling, collecting, analyzing, and reporting qualitative data for applied policy research. We believe that insights are transferable to prison systems in countries with similar regulations on e-cigarettes to the United Kingdom and potentially to other smokefree settings supporting heavy smoking groups. Ongoing work is exploring the views and experiences of prison staff about the use of e-cigarettes by PiC, including challenges that e-cigarettes present in this context, and analyzing “canteen” spend on nicotine-related (and other) products in the lead up to and following implementation of the smokefree policy to explore whether (and how) levels of spending on nicotine products among PiC has changed over time.

The study also has some limitations. Although our sample represents a diverse range of PiC (with respect to sex, age, and sentence length) from six prisons, it is possible that some vaping behaviors and experiences are not reflected because of (the essential) use of gatekeepers for recruitment or self-selection bias. Furthermore, constraints on interview length affected the amount of information that could be collected on participants’ smoking and e-cigarette use histories and it was not possible to triangulate interviews with other methods of characterizing vaping (eg, participant observation) to provide a fuller picture of vaping practices in prisons, and to aid comparison with other user groups.

The findings have several implications for prison policy and potentially for other smokefree settings, such as mental health inpatient settings. The introduction of e-cigarettes into Scottish prisons, which has been widely welcomed by PiC, may have discouraged some from using smokefree policy as an opportunity to become nicotine-free in the long term. It is thus essential that PiC have equitable access to conventional smoking abstinence/cessation aids such as nicotine replacement therapy, alongside e-cigarettes, particularly as they initially enter prison.

The study highlights several possible barriers to vaping reduction/cessation for PiC in smokefree prisons seeking to change behavior for personal preference, cost, or health reasons. In response to our findings, and feedback to the NHS from PiC and staff, Scotland has led the way in developing novel guidance²⁶ to support advisors to meet the needs of PiC who want to reduce or stop vaping. Similar guidance is likely to be helpful in other jurisdictions where e-cigarettes are sold in smokefree prisons. We plan to evaluate the implementation and potential effectiveness of this guidance in a future study, to inform delivery, and to identify transferrable insights for other settings.

To improve the chances of success in cutting down or quitting vaping and improve overall health, the data suggest that greater

access to activities that PiC find meaningful (eg, in-cell hobbies, prison gyms, education, or training) would be a useful adjunct to services supporting PiC in the management of nicotine dependence, particularly in reducing cultural and psychological drivers of vaping. In addition, PiC may benefit from information campaigns to discourage misuse of e-cigarettes, particularly in the light of concerns about use of psychoactive substances in prisons, and to support them to make more fully informed choices about e-cigarette use.²⁹ Such campaigns could be delivered through short videos, for example, shown at prison induction, and one-to-one or in small groups by peer mentors and healthcare professionals. Consideration could also be given to further review of the range of e-cigarette products available, including potentially piloting new device(s), and identifying the optimal combinations of strengths and flavors of e-liquids for this user group. It will be important to consider growing evidence on risks/benefits of using higher or lower strength e-liquids and on whether e-liquid flavors support or hinder harm reduction when selecting products. It is likely that some distinct policies on vaping in Scottish prisons will emerge, to balance imperatives to support PiC, as appropriate, to minimize continued use of nicotine in a smokefree environment, and to reduce rates of relapse to smoking postrelease.

In conclusion, PiC report that vaping helped them cope with mandated smoking abstinence, although concerns about e-cigarette efficacy, cost, and safety were raised. Findings suggest that PiC could be susceptible to heavy vaping, particularly with current products available in the United Kingdom. PiC may desire or benefit both from conventional smoking cessation programs and from interventions to support reduction or cessation of vaping, as appropriate.

Supplementary Material

A Contributorship Form detailing each author’s specific involvement with this content, as well as any supplementary data, are available online at <https://academic.oup.com/ntr>.

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Declaration of Interests

None declared.

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Chapter 8. Contextualisation of publications

This chapter starts with a summary of the findings of each publication and its contribution to the literature. Impact and reception of the work, study strengths and limitations, implications and areas for further research are also discussed.

8.1 Summary of findings and contribution to literature

Separately and together, the publications comprising this thesis strengthen understanding of smokefree prison policies from the perspectives of prison staff and PiC, building upon and extending a previously scant evidence base. The body of work provides novel insight into how perspectives among prison staff and PiC develop during the process of making a significant change to prison smoking rules.

Support for smokefree prison policies was higher among prison staff than PiC before any changes to prison smoking policy were formulated or announced. This has remained true post-implementation, although PiC were generally accepting of or resigned to smokefree prison policies despite some (strong) opposition to the new legislation. Prior to implementation, prison staff and PiC raised many shared anxieties about possible barriers to successful implementation of smokefree prison policies given a high prevalence of smoking among PiC and a strong smoking culture within prisons. Potential unintended adverse consequences of prohibiting smoking in prison were widely discussed. However, post-implementation qualitative data from prison staff and PiC indicated that the transition to smokefree prisons in Scotland had been largely successful overall for the prison service and that prior anxieties about substantial disorder in prisons did not materialise. Protection of people working and living in prison from SHS exposures, particularly prison staff, was perceived to be a significant benefit of smokefree prison policies. Benefits to the health of PiC who were abstaining from smoking were also discussed, although PiC varied in whether they had noticed improvements in their own health following stopping smoking in prison. Data highlighted potential opportunities and challenges for extending the benefits of smokefree rules when abstinent smokers leave prison. Smokefree rules have also created some challenges in prisons, particularly for PiC who do not wish to abstain or find it hard to abstain from smoking and for prison staff who are managing the replacement of tobacco with alternative substances in

prisons, particularly e-cigarettes, which can also be modified to take drugs. Thus, triangulation of qualitative evidence presented in this thesis with contemporaneous TIPs surveys of PiC and prison staff highlight that opinions and experiences of smokefree prison policies can be complex; it is possible for individuals to be positive about some dimensions of smokefree policies, but negative about others (Hunt et al. in press). Experiences in Scotland support and extend evidence from other jurisdictions that perceived success factors for implementation of smokefree prison policies relate to the following key areas: preparing for change; communication and engagement; partnership working; and the availability of support for (previous) smokers.

The work is the first to empirically explore e-cigarettes in prisons. In the Pre-announcement period of TIPs, staff opinions on the idea of introducing e-cigarettes for PiC were based on evaluations of anticipated benefits and risks across several areas. Staff considered potential positive/negative implications for health of staff, as bystanders, and PiC, as users, of substituting tobacco for e-cigarettes in prisons. Prison staff also considered ways in which e-cigarettes might either undermine or support maintenance of safety and discipline in prisons, citing concerns about misuse of e-cigarettes and/ or their potential positive role in supporting a successful transition to smokefree rules. Finally, prison staff considered the value of e-cigarettes as an aid to support PiC to quit or abstain from smoking in smokefree prisons, with some differences in opinion expressed about whether e-cigarettes were akin to other 'substitute' products for management of addictions (e.g. methadone) or necessary given that NRT could already be (freely) accessed by PiC. Differences in staff interpretations of anticipated benefits and risks of e-cigarettes in smokefree prisons may have reflected either a 'precautionary' or 'harm reduction' disposition among individual staff. In the Preparatory Phase of TIPs, PiC expected that enhanced support would be available to help them to manage without tobacco in smokefree prisons, including the option to use e-cigarettes. Post-implementation, levels of support for e-cigarettes remained strong among PiC and prison staff, although staff voiced more diverse views about whether allowing PiC to use e-cigarettes would be of net benefit long-term. In both groups, e-cigarettes were generally perceived to have been an important part of the relatively smooth transition to smokefree prison policies and ongoing management of smoking restrictions. Among PiC who were

current or former users of e-cigarettes in prisons, use of e-cigarettes was strongly influenced by the smokefree policy and a desire to fulfil needs previously met by smoking. PiC expressed varied satisfaction with e-cigarette use in prison, partly influenced by the degree to which e-cigarettes provided adequate symptom relief, replicated or improved certain aspects of smoking, and fulfilled psychological needs (e.g. for pleasure or distraction from boredom). Other factors included whether e-cigarettes were perceived to be beneficial for health, provided value for money and reflected someone's underlying attitudes to smoking cessation and continued use of nicotine products. Many of the psychological and environmental factors influencing vaping behaviours among PiC mirrored those for smoking in prison before smokefree rules; descriptions of heavy or excessive use of e-cigarettes within prisons was a recurrent theme in the data. Like with smoking, these factors may make it hard for those who wish to cut down or stop vaping in prisons given some concerns about continued nicotine addiction, cost and e-cigarette safety. Additional issues with e-cigarettes in prisons reported by prison staff mirrored some anxieties expressed pre-implementation about exposures to e-cigarette vapour at work; use of e-cigarettes to take illegal drugs by some PiC and organisational challenges arising from substitution of smoking with vaping in prisons.

A summary of the findings of each publication and its contribution to the literature are provided in turn, below:

8.1.1 Prison staff and prisoner views on a prison smoking ban: evidence from the Tobacco in Prisons study (Publication 1)

Publication 1 provides evidence to answer **RQ1**: What views on smokefree prison policies are held among prison staff? What are the reasons for support or opposition to smokefree prison policy among prison staff?

This publication is one of only very few studies internationally to have explored views on prison smoking policies among prison staff working in prisons permitting PiC to smoke (see also studies of prison staff in Vermont, US (Carpenter et al. 2001), Switzerland (Etter et al. 2012; Ritter and Elger 2014) and England (Woodall and Tattersfield 2017)). Such information can help inform decisions about whether and

how to move forward with smokefree prison policies in jurisdictions contemplating or planning change.

Findings build on and extend understandings of levels of support for smokefree prison policies among prison staff and factors underpinning their views. Consistent with previous studies in other prison systems (Carpenter et al. 2001; Etter et al. 2012; Ritter and Elger 2014), many staff in Scotland favoured smoking restrictions for PiC that were more restrictive than the (then) current smoking policy, with the highest levels of support for smoking restrictions expressed by non-smokers. The findings are broadly consistent with studies of opinions on smoking restrictions among staff working in secure hospitals (Hehir et al. 2013) and other mental health settings (Zabeen et al. 2015). A notable finding in this study was that nearly three quarters of prison staff surveyed in Scotland believed that '[comprehensive] prison smoking bans are a good idea'. In contrast, prison staff participants in the US (Carpenter et al. 2001), Switzerland (Ritter and Elger 2014) and England (Woodall and Tattersfield 2017) appeared more supportive of partial (as opposed to comprehensive) smokefree rules for PiC. Potential reasons for differences in findings might reflect differences in tobacco control policies in Scotland and other (non-UK) jurisdictions and awareness that partial smoking restrictions in prisons had had limited success elsewhere (Collier 2013). At the time the data were collected, prison staff in Scotland were not permitted to smoke anywhere on prison premises and some staff felt that policies allowing PiC, but not staff, to smoke in prison were unfair. In addition, the 2006 smokefree legislation had been in place in almost all indoor public spaces and workplaces in Scotland for over a decade when these data were collected, heightening perceptions among many prison staff that current prison smoking rules were unjust for them as a group of employees. Differences in findings between studies conducted in Scotland and England may partly reflect methodological differences (e.g. composition of qualitative staff samples) since tobacco control policy is similar in both UK nations. Another factor potentially influencing differences in prison staff opinions of smoking restrictions for PiC across jurisdictions, including between Scotland and England, may relate to the penal context such as the priority given by prison staff to addressing tobacco-related harms vs. other challenges such as overcrowding or violence in prison and the anticipated

ease/difficulty of undertaking major organisational change within a particular prison system.

A novel aspect of this study is the focus group research conducted with prison staff in all but one Scottish prison. Previous qualitative studies have achieved less extensive coverage of prison staff populations in their samples (Ritter and Elger 2014; Woodall and Tattersfield 2017). Another original aspect of the study is that results help to explain the factors underpinning prison staff views on smokefree prison policies, as expressed through contemporaneous surveys. Staff in Scotland not only considered the perceived acceptability of limiting the freedom of PiC to smoke, to protect prison staff (and PiC) from the harmful effects of SHS exposure, but also the degree to which it was believed that smokefree policy could be successfully implemented in prisons given, on one hand, prison smoking culture and, on the other, beliefs that PiC generally adapt to any changes in prison rules. This qualitative finding is reflected in further analysis of TIPs surveys, reported in a subsequent publication (Sweeting et al. 2019). This separate study found that views on smokefree prison policies were related to two underlying factors ('positive about bans' and 'bans will be difficult'), suggesting, importantly, that 'it is possible to be both generally positive about prison smoking bans, whilst also recognising (and potentially concerned about) the operational difficulties they may bring' (Sweeting et al. 2019, p.13).

Consistent with previous studies of prison staff in US (Carpenter et al. 2001), Switzerland (Ritter and Elger 2014) and England (Woodall and Tattersfield 2017) (and studies of staff employed in inpatient psychiatric settings (Lawn and Pols 2005)), anxieties were expressed among staff in Scotland about the potential for smoking restrictions to have negative impacts on individual staff, PiC and the prison service. However, staff also identified factors they anticipated might be critical to reducing any unintended negative consequences of potential smokefree prison policies. Staff spoke of the need for sufficient lead-in time and planning work; access to adequate resources; comprehensive engagement and communication with stakeholders; provision of stop smoking support for PiC. Staff also voiced anxieties that implementation might be hindered by factors such as poor coordination of policy

change at national level; insufficient risk mitigation strategies; and budgetary constraints.

Another novel aspect of this study is that it surveyed PiC from across the entire Scottish prison estate about their opinions of prison smoking policies prior to changes to prison smoking rules being announced. A previous study surveying PiC in three prisons in Switzerland about their views on prison smoking restrictions did not report views on comprehensive indoor/outdoor bans (Etter et al. 2012). Support for smokefree policies was lower among PiC in Scotland than among staff, which is to be expected given the very high rates of smoking among PiC at the time data were collected. Like prison staff, PiC worried that smokefree prison policies would lead to 'trouble' in prisons and be challenging to implement. Similar concerns were expressed about implementation of stricter smoking rules by PiC (and staff) in an interview study conducted in one prison in Switzerland (Ritter and Elger 2014). Evidence on PiC's views on smokefree prison policy are considered in greater detail in 8.1.3 and 8.1.4.

To my knowledge, this study is also the first to report survey items relating to PiC and prison staff views on e-cigarettes in prisons. Almost half of PiC who responded to the survey were amenable to smokefree prison policies 'if prisoners are allowed e-cigarettes or vapes'. The equivalent figure for staff was 35%, with the staff focus groups providing insight into the perceived concerns, risks and benefits of having e-cigarettes in prisons. The issues posed by e-cigarettes in prisons are explored in much greater detail in **Publications 2** and **Publication 5**.

8.1.2 Views of prison staff in Scotland on the potential benefits and risks of e-cigarettes in smokefree prisons: a qualitative focus group study (Publication 2)

Publication 2 provides evidence to answer **RQ2**: What are prison staff's perceptions and experiences of e-cigarettes for PiC in smokefree prisons, including the perceived risks and benefits?

To my knowledge, this study is the first to report in detail on prison staff views on the potential benefits and risks of allowing PiC to use e-cigarettes. Data were collected

before it was known that total restrictions on smoking would be introduced in Scottish prisons and when rules were in place prohibiting PiC (and staff) from vaping in prisons. Findings provide important insights that can help to inform policies on e-cigarette use in prisons internationally. Findings also provide insights to inform communications and training for prison staff that might help to modify risk perceptions and support prison staff to effectively identify and manage issues associated with e-cigarette use among PiC.

Prison staff who participated in this study, few of whom had personal experience of e-cigarettes, generally had limited, and sometimes inaccurate, knowledge of e-cigarettes and this is likely to have contributed to their perceptions of the potential benefits and risks of e-cigarettes in prisons. Identified potential benefits of allowing PiC to use e-cigarettes in smokefree prisons related to reducing possible adverse consequences of smokefree policies and ultimately reducing tobacco-related harms for prison staff and PiC. Strong support among prison staff for provision of good smoking cessation/abstinence support to PiC before and after any future implementation of smokefree prison policies reflected their understandings of the potentially substantial challenges that authorities might face in prohibiting smoking in a population known to have very high levels of tobacco use (Scottish Prison Service 2015; Spaulding et al. 2018), high nicotine dependence (Reddy et al. 2014), and who would likely associate restrictions with the loss of choice, pleasure, and a means for coping with negative emotions and the difficulties of imprisonment (Reddy et al. 2014; Richmond et al. 2009). In this context, some staff appeared to regard e-cigarettes as a practical harm reduction measure, particularly for PiC who do not want to stop smoking or have not had success with conventional stop smoking treatments. Similar arguments for supporting e-cigarettes in smokefree prisons (NHS Health Scotland 2016), and in other similar smokefree institutions such as mental health trusts (Public Health England 2020 ; Ratschen 2014), have been made by some in the UK.

In respect of the potential risks of allowing e-cigarettes in prisons, staff spoke of concerns about the safety of vaping for users, and bystanders exposed to e-cigarette vapour, continued nicotine dependence among PiC, and device misuse or product defects or accidents. Findings on the challenges associated with e-cigarette use in

prisons correspond with some concerns raised by commentators (Curry et al. 2014; Young-Wolff et al. 2015) writing about the potential difficulties that might arise from the introduction of e-cigarettes into some US prisons. Like the study participants, these commentators highlight some of the distinct potential risks of selling e-cigarettes in secure institutional settings, such as prisons. These include concerns about the potential for e-cigarettes to provide a discreet and convenient way of taking illegal drugs. This finding relates to wider and more recent evidence on the adverse impacts of illicit drug use, particularly novel psychoactive substances (NPS) on individual staff (and PiC) and operational stability in prisons (Corazza et al. 2020; Gooch and Treadwell 2020; Kolind and Duke 2016) and growing evidence on the potential for e-cigarettes to be used for illicit drug use generally (Breitbarth et al. 2018). As an example, a multi-method study of NPS use in prison carried out in an English adult male prison in 2015 (Ralphs et al. 2017) found evidence of the predominance of the NPS market in the prison (as compared to the market for 'traditional' prison drugs such as heroin and cannabis) and of its devastating effects on users in prison who remarked on its potency, addictive nature and negative impacts on mental health (anxiety, depression, paranoia, self-harm and suicidal thoughts). Prison staff who participated in the study reported incidents of violence towards staff by PiC while under the influence of NPS, with the study authors noting the 'traumatic impact' on staff and PiC who experienced or saw violent or psychotic incidents and how these incidents resulted in 'a climate of apprehension and fear within the prison workforce' (Ralphs et al. 2017, p.65).

Another concern expressed both by prison staff in Scotland and US commentators is that the sale of e-cigarettes in (smokefree) prisons may perpetuate use of nicotine products among PiC. These concerns might be influenced by several factors. First, prison staff are likely to be aware that some individuals may desire from abstinence-based recovery from tobacco and nicotine (Brown et al. 2020b), which may be much harder to achieve if e-cigarettes are widely available and become a more convenient option relative to other stop smoking treatments (e.g. for which there is likely to be a waiting list). Second, prison staff are likely to be aware that a multiplicity of individual, cultural and environmental factors can contribute to (re)initiation and maintenance of substance use in prison (Kolind and Duke 2016; Rousselet et al. 2019) and to risky consumption practices in some individuals e.g. sharing paraphernalia, and misuse

and diversion of medicines (Hearty et al. 2016; Morrissey et al. 2016), Third, prison staff may recognise uncertainties about the long-term health effects of e-cigarette use, particularly in a population with overall poor health, and about the extent to which continued e-cigarette use protects or increases risk of smoking relapse, both immediately after someone leaves prisons and longer-term. Fourth, prison staff are likely to recognise that PiC have (very) limited economic resources in prisons (Piacentini et al. 2018) and that living costs are usually incurred by family members who may be experiencing considerable financial strain following imprisonment of a relative (Weaver and Nolan 2015). Finally, misunderstandings about the health effects of nicotine (O'Brien et al. 2017) and beliefs that people who use e-cigarettes have not 'truly' stopped smoking may also be a factor (Hartwell et al. 2020). Many of these issues are echoed in wider debates about the overall balance of benefits and risks of promoting e-cigarettes for tobacco harm reduction (Abrams et al. 2018; Cox and Jakes 2017; Doan et al. 2020; Thomson et al. 2020; Wise 2020).

A particularly novel aspect of the data is evidence on prison staff opinions about prospective exposure to e-cigarette vapour in the workplace. As noted elsewhere (O'Donnell et al. 2021), this consideration is particularly understandable as prisons would be relatively unique among UK public sector organisations in permitting vaping *indoors* (Blackwell et al. 2019) and prison staff need to enter rooms (cells) where PiC are vaping/have recently been vaping to provide care or maintain security. Concerns among prison staff about the safety of e-cigarettes in general are held in common with other groups of workers, such as mental health professionals (Smith et al. 2019). Staff concerns are also reflected in general population studies on e-cigarettes. A UK online survey of smokers and recent ex-smokers found that the top concerns, expressed by at least one third of the sample, about e-cigarettes related to product safety and quality ('not enough research has been done to understand all the possible harms'; 'chemicals in the liquid might be harmful'; 'not enough quality control or regulation') (Wilson et al. 2019). With respect to perceptions of the safety of e-cigarette vapour specifically, a study of US adults found that most participants perceived e-cigarette vapour exposure to be 'moderately harmful' to health (Mello et al. 2016). Perceptions that e-cigarette vapour is harmful to bystanders appears to be an important factor in public support in some countries for restrictions on e-cigarette use in indoor public places. A 2018 online survey of US adults found that most were

in favour of prohibiting e-cigarette use in all indoor public places, restaurants and bars, with higher support for restrictions expressed among those who perceived exposure to e-cigarette vapour as harmful to bystanders (Czaplicki et al. 2020). In an earlier (2014) UK study of smokers and ex-smokers, less than 50% of participants expressed support for e-cigarette use in smokefree places (Brose et al. 2017).

The findings echo, to some degree, a study of smokefree policy in mental health trusts in England published after **Publication 2** (ASH 2019). For instance, interviews with staff involved in developing or implementing the smokefree policy within the mental health trusts spoke of patients' positive responses to e-cigarettes as an alternative to tobacco. Staff participants also noted some difficulties in respect to questions about the safety of e-cigarettes, fire risks, and potential for misuse of e-cigarettes as weapons. Concerns about staff exposures to e-cigarette vapour are not reported in the study, perhaps because indoor use of e-cigarettes is prohibited in most mental health trusts (Blackwell et al. 2019). Additionally, it is unclear whether staff who participated in the study were those who worked in frontline roles that would likely result (higher) exposure to e-cigarette vapour at work.

8.1.3 Perspectives on smokefree prison policy among people in custody in Scotland (Publication 3)

Publication 3 provides evidence to answer **RQ3**: What views on smokefree prison policies are held among PiC? What are the reasons for support or opposition to smokefree prison policy among PiC?

Understanding support or opposition for prison smokefree policies among PiC is crucial for successful introduction of rules which fully or partially prohibit smoking in prisons. Yet very few previous studies (see also studies of PiC in Switzerland (Etter et al. 2012; Ritter and Elger 2014) and England (Dugdale et al. 2019; Woodall and Tattersfield 2017)) have explored PiC's perspectives on smokefree rules prior to planned smoking rule changes. As with **Publications 1** and **2**, **Publication 3**, which reports qualitative data collected from PiC 5-12 months prior to the implementation of smokefree policy in Scottish prisons, is novel in being part of a wider comprehensive evaluation of the implementation of smokefree prisons. We were able to interview a

relatively large and diverse sample of PiC, including users of prison smoking cessation services, living in six Scottish prisons that were varied in size, population, and security level. The sample composition gives confidence that findings reflect the perspectives of a broad cross-section of the Scottish prison population. Previous pre-implementation studies have noted greater limitations in respect of reflecting the diversity of the prison estate in their research (Dugdale et al. 2019; Woodall and Tattersfield 2017)

Publication 3 extends understandings of PiC's perspectives on the fairness and anticipated positive/negative consequences of smokefree prison policy. This study found that overall attitudes towards smokefree prison policies were on a continuum ranging from highly negative to positive. Consistent with previous studies in prisons (Dugdale et al. 2019; Ritter and Elger 2014; Woodall and Tattersfield 2017), a key argument made against comprehensive smokefree prison policies by PiC was that they erode the personal freedom or 'rights' of smokers and are therefore unjust. Similar objections were expressed among the Scottish general public prior to implementation of legislation prohibiting smoking in indoor public places and (most) workplaces in Scotland (Heim et al. 2009). However, it is important to acknowledge important differences in context: comprehensive smokefree prison policies apply in all areas of prisons, including rooms (cells) which are PiC's 'homes' while they are in prison whereas members of the public are 'free' to smoke at home if they wish. Furthermore, the personal freedoms and rights of PiC are already significantly restricted compared to the public, leading to valid concerns about harms of further curtailing the agency of PiC (Woodall et al. 2013). It is perhaps unsurprising that PiC and members of the public in Scotland invoked discourses of individual 'rights' and freedoms of smokers when expressing opposition to smokefree policy. There is evidence that the tobacco industry has used individual 'rights' and general public anxieties about the incursion of government into private life to garner opposition to tobacco control, 'neutralise tobacco control advocates' and so maintain (high) smoking prevalence (Katz 2005 p.33). Reported industry activities in support of these goals have included placing newspaper adverts 'attributing smoking restrictions to power hungry bureaucrats who would target other freedoms next' and concealing payments to scientists for endorsement of the industry's viewpoint (Katz 2005 p.33). As noted by Katz (2005), the effect has been to distort public narratives

about tobacco control so that comparatively little attention is paid to the personal freedoms of non-smokers, and to the tobacco industry's efforts to undermine the wealth of evidence of the deleterious effects of smoking and SHS exposures.

Despite long-standing tobacco industry efforts to undermine public support for tobacco control, findings from **Publication 3** suggest that discourses of individual 'rights' in relation to smokefree prison policy were often nuanced or complex among PiC. For instance, PiC generally acknowledged the need for smoking restrictions for the comfort and safety of non-smokers and many recognised that partial smokefree rules provided incomplete protection. Given this, it was common in interviews for participants to deliberate on the overall harms vs. benefits of smokefree prisons, with some participants expressing different attitudes at different points in the interview. That PiC were generally attentive, to varying degrees, to both the freedoms and needs of smokers and non-smokers in prisons might have been due in part to the public health community's efforts to promote the rationale for and benefits of Scotland's national smokefree policy which was successfully implemented in 2006 (Hyland et al. 2009; Semple et al. 2007) and efforts in Scottish prisons to engage with PiC about changes in smoking rules.

Another key concern voiced by PiC in Scotland against smokefree prisons was that adverse consequences were anticipated. The types of potential adverse consequences identified by PiC related to negative effects on well-being and mental health of abstinent smokers; PiC switching to contraband tobacco; and risk of conflict or violence in prisons. Importantly, views on the likely severity of any problems varied: ranging from beliefs that PiC would be more irritable, argumentative or stressed without tobacco to, more worrying, predictions of moderate or serious incidents of indiscipline in prisons. Findings are in line with concerns about potential negative effects of smokefree prison policies voiced by PiC in other jurisdictions (Dugdale et al. 2019; Woodall and Tattersfield 2017). As an example, in a 2014 Swiss study in one prison planning to tighten smoking restrictions for PiC, fears were expressed by PiC (and prison staff) about potential future problems such as the 'rise of violence and suicide rates, withdrawal symptoms, absence of compliance with regulation' and 'increased strain on staff to apply the new regulation' (Ritter and Elger 2014 p.106) Threats to individual and organisational safety and active

resistance (e.g. illicit tobacco use) to prohibitions on smoking were also identified by PiC in England as potential negative outcomes of the planned introduction of smokefree prison rules (Dugdale et al. 2019; Woodall and Tattersfield 2017).

PiC's beliefs about anticipated risks and challenges of smokefree prison policies potentially reflect how such policies are represented in the media. As an example, thematic analysis of 106 newspaper articles/broadcasts published during 2015-2016 found that half of the articles/broadcasts suggested that 'unrest or instability' would result from making prisons smokefree and media coverage generally overlooked the health benefits of smoking restrictions for PiC and prison staff (Robinson et al. 2018 p.622). As the authors note, media coverage associating smokefree prison policies with serious adverse consequences is at odds with their generally smooth implementation in several jurisdictions (Robinson et al. 2018). PiC's attitudes about anticipated risks and challenges of smokefree prison policies also likely reflect the social and cultural dynamics of prisons. A strong pro-smoking culture coupled with high rates of heavy tobacco use and high dependence on nicotine (and other substances) persisted in Scottish prisons (Scottish Prison Service 2015) (as in many other prison systems internationally (Spaulding et al. 2018)) even after substantial declines in smoking prevalence in the general population. Other relevant factors likely to have fuelled anxieties about smokefree policies among PiC are high rates of poor mental health and wellbeing in the prison population (Graham 2007), perceived associations of smoking with stress relief (Richmond et al. 2009), and established informal economies which could potentially support the sale of contraband tobacco (Lankenau 2001). In addition, concerns may have been influenced by recurrent problems of conflict and violence in prisons, which have been linked to poor living conditions, insufficient activities that provide meaning, personal characteristics of some PiC, perceived lack of fair treatment by some prison staff and the malignant influence of organised crime (McGuire 2018).

While not losing sight of the fact that overall support for smokefree prison policy is much higher among prison staff than PiC in Scotland (Sweeting et al. 2020), the present study highlights that underlying attitudes towards smokefree rules can be complex. PiC we interviewed were often negative about some aspects of smokefree prison rules while being more positive about other dimensions. While some strong

opposition to smokefree rules was expressed, we also interviewed PiC who emphasised benefits of enforced smoking abstinence for them and for others. Contemporaneous surveys of PiC from TIPs found that ~25% PiC who responded agreed that 'prison smoking bans are a good idea' (Sweeting et al. 2020). Reports of two previous studies (Dugdale et al. 2019; Woodall and Tattersfield 2017) of attitudes towards the (then) forthcoming introduction of comprehensive smokefree policies in English prisons focus largely on PiC's opposition to and concerns about the policies, albeit alongside some acknowledgement of health benefits. Differences between studies in Scottish and English prisons might be explained by the choice of data collection method (interviews or focus groups) or to differences in the ways in which smokefree policies were implemented in the different jurisdictions. In Scotland, smokefree policy came into force in all prisons on the same date sixteen months after the policy was first, and very publicly, announced, enabling communications with PiC about planned smoking rule changes prior to implementation. In contrast, the large size of the English prison estate perhaps explains the phased approach to implementation of smokefree prisons for practical reasons (resources, logistics) which likely contributed to reports in one of the English studies (Dugdale et al. 2019) that PiC felt insufficiently well informed about the smokefree rules (see (Brown et al. 2020a) for further discussion). This may have reduced understandings of the rationale or benefits of smoking restrictions among PiC or caused them to particularly question whether their needs were being considered in the transition to smokefree prisons.

The present study also extends the very limited evidence previously on PiC's views and experiences of potential facilitators and barriers for successful implementation of smokefree prison policy. Identified issues that might either create opportunities or challenges for prohibiting smoking in prisons related to three themes: the role of smoking in prisons, prison smoking cessation services, and motivations for quitting smoking among PiC. PiC made several suggestions for aiding policy implementation. Like in previous studies (Dugdale et al. 2019; Ritter and Elger 2014) conducted prior to introduction of stricter smoking rules for PiC in England and Wales, and Switzerland, PiC in Scotland stressed the importance of good support to help smokers to quit or abstain from smoking. Specifically, they suggested that access to existing smoking cessation provision in prisons was improved, problems with the

prescribing of NRT were resolved and e-cigarettes were made available for PiC to use. PiC expressed the need for smoking abstinence/cessation support in prisons to continue post-implementation for the benefit of groups such as new admissions. As in previous studies (Dugdale et al. 2019; Ritter and Elger 2014), PiC also spoke of the potential value of increasing activities (e.g. sport, hobbies) in prisons that PiC could use to replace or act as a distraction from smoking. PiC also asked that communication and dialogue with them be expanded in the lead up to implementation of smokefree rules.

8.1.4 Post-implementation perspectives on smokefree prison policy: a qualitative study with staff and people in custody (Publication 4)

Publication 4 provides evidence to answer several of the RQs. **RQ1:** What views on smokefree prison policies are held among prison staff? What are the reasons for support or opposition to smokefree prison policy among prison staff? **RQ2:** What are prison staff's perceptions and experiences of e-cigarettes for PiC in smokefree prisons, including the perceived risks and benefits? **RQ5:** What are the perceived positive/negative impacts of smokefree prison policy for prison staff, PiC and prison systems? **RQ6:** What are the perceived facilitators, barriers and success factors for implementation of smokefree prison policy?

Publication 4 is one of very few studies internationally to have qualitatively explored views and experiences of recently implemented comprehensive smokefree prison policies from the perspectives of PiC and prison staff. Data were collected on opinions of smokefree policies, implementation process and success factors and positive/negative consequences of smokefree rules through focus groups with prison staff in 14 'closed' prisons and interviews with PiC in 6 'closed' prisons, 6-8 months post-implementation, after smokefree rules had had a chance to fully embed. Previous qualitative post-implementation research from the US (Lankenau 2001; Thibodeau et al. 2012) and Taiwan (Chang et al. 2010) has focused on exploring the smoking behaviour of PiC living in smokefree prisons or the development of black markets for tobacco within smokefree prisons. Another small US study (n=6 prisons prohibiting smoking indoors and outdoors) has explored implementation success/failure factors for comprehensive smokefree policies (Foley et al. 2010) and

results of a larger (n=87) 'process evaluation' of the implementation of smokefree prisons in the Northern Territory, Australia has also been published (Hefler et al. 2016).

The present study extends understandings of attitudes towards smokefree policies among prison staff and PiC after the introduction of stricter smoking rules for PiC. Consistent with TIPs surveys carried out in the Pre-announcement, Preparatory and Post-implementation Phases of TIPs (Brown et al. 2018; Hunt et al. in press; Sweeting et al. 2020), support for smokefree policy continued to be higher among prison staff than PiC post-implementation of smokefree rules. Strong support for smokefree prisons among staff was partly explained by the immediate marked improvement in air quality in prisons (Demou et al. 2020). However, it is interesting to note that support for smokefree prisons, as measured by TIPs repeat cross sectional surveys, *increased* in anticipation of and following policy implementation among both PiC and prison staff (Sweeting et al. 2020). By the Post-Implementation Phase, 35% of PiC agreed that 'prison smoking bans are a good idea', compared with 22% of PiC who responded in the Pre-announcement Phase. For prison staff, 86% agreed with the same opinion statement post-implementation, compared with 74% pre-announcement. In the present study, similar arguments against smokefree prison policies were made by some PiC, and to a lesser degree some staff, as had been voiced in earlier studies reported in **Publications 1** and **3**. These arguments centred on concerns about the fairness and legitimacy of prohibiting use of a substance that was legal to purchase in wider society and worries about actual or possible future adverse consequences of mandating smoking abstinence in prisons. In contrast, among PiC who expressed support for smokefree prison policies, similar arguments were cited to those mentioned by PiC in interviews in the Preparatory Phase of TIPs (**Publication 3**) i.e. positive consequences of smoking abstinence/cessation and protection from SHS exposures in prison.

While prison staff tended to be more positive about smokefree prison policies and PiC tended to be more negative or mixed in their views, data show that attitudes and experiences of smokefree prisons among prison staff and PiC were varied, complex and multidimensional (see also (Hunt et al. in press)). For instance, participants who believed that smokefree prison policies had delivered significant gains for the health

and comfort of staff and PiC often acknowledged that smokefree rules had some negative consequences, while participants who disagreed with smokefree prisons often conceded some benefits. This finding highlights the value of exploring attitudes towards smokefree prison policies across a number of different dimensions that go beyond statements of support or opposition to the policy.

Both prison staff and PiC indicated that new smokefree rules had been quickly and widely accepted by (most) PiC, even if PiC did not always agree with the change to smoking rules. In both groups, non-compliance with smokefree policies was reported not to be a big issue in (closed) prisons in Scotland, although some degree of illicit activity in prison was taken as a given. Findings are in contrast with a US study of smokefree prisons which found limited 'buy in' for smokefree rules among prison staff and PiC and, in turn, poor compliance with smoking restrictions (Foley et al. 2010). More substantial problems with compliance with smokefree policies are also indicated by another US study (Thibodeau et al. 2012) and a study of smokefree prisons in Taiwan (Chang et al. 2010), but appear to have been less of a problem in New Zealand (Collinson et al. 2012) and Northern Territory, Australia (Hefler et al. 2016). Beyond issues to do with lack of acceptance of the policy among PiC and prison staff, other factors suggested to affect tobacco black market activities in prisons with smokefree policies include boredom among PiC and lack of motivation to quit smoking, limited access to tobacco substitutes, poor enforcement of smoking restrictions by prison staff, and, in lower security settings, PiC having access to tobacco while spending time out of grounds (e.g. at work) (Foley et al. 2010; Lankenau 2001; Thibodeau et al. 2012). In contrast, data from the present study suggest that greater success with compliance with smokefree policies in Scottish prisons (as confirmed by air quality monitoring (Demou et al. 2020)) was potentially influenced by factors such as PiC accepting or feeling resigned to smokefree rules, ready availability of nicotine substitutes in prisons (particularly e-cigarettes), higher returns for other contraband items (such as illegal drugs) and beliefs among PiC that illicit smoking would likely be detected by prison staff. In contrast to other jurisdictions (Hefler et al. 2016; Puljević et al. 2018), misuse of NRT was not reported to be a big issue under smokefree prison policies in Scotland.

Another indication of the relative success of the transition process in Scottish prisons was broad consensus among participants in our qualitative samples that smokefree policies has been less troublesome organisationally than many PiC and prison staff had expected, with no major disturbances being reported. This experience is at odds with common media portrayals of smokefree prison policies (Robinson et al. 2018). However, findings are consistent with experiences in several (Collinson et al. 2012; Hefler et al. 2016; Kauffman et al. 2008), but not all (Butler and Yap 2015), other jurisdictions. Qualitative findings are broadly reflected in TIPs surveys of prison staff and PiC which found that agreement with the statements that smokefree prisons 'cause a lot of trouble' and 'are hard to enforce' substantially decreased post-implementation (Sweeting et al. 2020). In addition, over 70% of prison staff and over 1/3 PiC agreed that the introduction of smokefree rules 'has been largely trouble-free for the prison service' (Hunt et al. in press). Lower levels of agreement among PiC than prison staff that implementation had been 'trouble-free' for the prison service may reflect a few suggestions in the interviews that new smoking restrictions were contributing to tensions or conflict in prisons. In the TIPs surveys, around half of PiC who responded agreed that smokefree policies 'led to more verbal assaults/aggression by prisoners' and 'led to more physical assaults/physical aggression by prisoners' (equivalent responses for prison staff were 33% and 23%, respectively) (Hunt et al. in press).

Several factors which were perceived to have aided the implementation of smokefree prisons in Scotland were identified, particularly by prison staff who perhaps had greater insight into preparation strategies. These included careful planning and management of the transition process by staff at local and national levels; ongoing communication with PiC (and prison staff) to ensure widespread awareness of the impending smokefree rules, collaboration within and across prison and health services and availability of alternatives (especially e-cigarettes) and support for smokers. In the TIPs surveys, 88% of staff and 61% of PiC agreed that 'staff and prisoners were well informed about the smoking ban', and 79% of prison staff and 59% of PiC agreed that the 'introduction of e-cigs/vapes made the smoking ban easier for prisoners and staff' (Hunt et al. in press). TIPs findings strengthen evidence on implementation success factors for smokefree prison policies from the Northern Territory Australia, and New Zealand. These included: a long lead in time,

comprehensive planning for implementation of smokefree rules, extensive communication with PiC and prison staff using multiple channels and offering a range of smoking cessation/abstinence treatments/support to PiC in advance of implementation (Collinson et al. 2012; Hefler et al. 2016).

To my knowledge the present study is the first to comprehensively report views on the perceived positive and negative *consequences* of smokefree prison policies among PiC and prison staff. A major reported benefit of smokefree rules for staff (and also PiC) was protection against the health risks and discomfort of SHS exposures in prisons, with staff typically commenting on immediate sensory improvements, such as no longer smelling smoke in the air and their clothes no longer smelling of stale smoke. Some staff continued to express disappointment that it had taken until 2018 for prisons to become completely smokefree environments. Findings are reflected in TIPs surveys which found that both PiC and staff reported a marked drop in exposure to SHS following the introduction of smokefree prison policy (Hunt et al. in press), confirmed by TIPs SHS measurements (Demou et al. 2020). In addition, a substantial majority of staff indicated in TIPs surveys that smokefree rules had 'led to improved working conditions for staff' (74%), and 'improved staff health' (68%), while over 2/5 of PiC similarly agreed with these statements (Hunt et al. in press). TIPs findings are consistent with evidence from other settings (such as bars) that have found that smokefree policies can lead to substantial reductions in SHS exposures in indoor environments (Ayres et al. 2009). Evidence from other settings is also promising in respect of the likely health gains to people through reduced exposures to SHS and, for PiC, abstaining from active smoking due to smokefree prison policies (Frazer et al. 2016; Rando-Matos et al. 2017). This is reflected in *long-term* health economic modelling carried out as part of TIPs which found that, for both staff and PiC, quality of life increased with the smokefree prison policy as compared to without it (Hunt et al. in press). In scenario analyses which tested the impact of varying assumptions used in the base-case health economic model, one of the scenarios that led to the greatest increase in quality of life for PiC compared to base-case results, was one where greater proportions of PiC were assumed to manage to maintain smoking abstinence after release (Hunt et al. in press), highlighting the need for ongoing work in prisons and communities to maximise the potential benefits of smokefree prison policies.

Mandated smoking abstinence in prisons was reported to have had a mix of positive and negative consequences for PiC. PiC generally acknowledged that stopping smoking was good for health and some spoke about perceived improvements in their own health following the introduction of smokefree prison rules. Additionally, there were PiC who viewed entirely smokefree rules as a positive development which might help them to quit smoking long-term, although several triggers for resumption of smoking post-release were mentioned in interviews and focus groups. In TIPs surveys over half of PiC agreed with statements that smokefree prison policies 'helped improve prisoner health' and that smokefree prisons are 'a good opportunity to stop smoking', while 43% of PiC agreed they felt 'healthier' because they were not allowed to smoke in prison (Hunt et al. in press). However, at the same time, PiC and prison staff discussed the physiological and psychological challenges which some people faced in being smoking abstinent in prison. Perhaps unsurprisingly, the first few weeks or months in prison were highlighted as a particularly challenging time for previous smokers because of withdrawal symptoms and, typically, needing to adjust to the switch from smoking to vaping. While some PiC found that symptoms and difficulties reduced over time, others continued to struggle with not being permitted to smoke in prison, reporting problems managing nicotine dependence, or with finding alternative coping strategies for common problems in prisons such as boredom, poor mental health or low mood. In the TIPs surveys, 64% of PiC and 33% of prison staff agreed that smokefree rules had 'made prisoners more anxious' (Hunt et al. in press). Findings from TIPs are broadly reflected in a US study (Thibodeau et al. 2012) of smokefree prison policies which found that PiC varied in the ease/difficulty with which they had been able to adjust to mandated smoking abstinence. Among PiC who were opting not to smoke illicitly in prison, their reasons included feeling positive about being 'free' of nicotine dependence, experiencing health improvement, developing a holistic view of health in prison that they felt was antithetical to smoking, and learning new coping strategies to replace smoking. In contrast, PiC who chose to smoke contraband tobacco cited reasons such as boredom, lack of motivation to quit smoking long-term and rebellion (Thibodeau et al. 2012).

Prison staff and PiC discussed the impact of smokefree prison policies on the use of alternatives to tobacco in prison. A key area of concern among some prison staff was the use of NPS in prisons and resulting harms to users and bystanders (see also 8.1.2). Concerns were also discussed by some PiC. While NPS had been a problem within prisons for several years prior to smokefree rules, it was pointed out that the introduction of e-cigarettes (and the removal of lighters and rolling papers) provided some PiC with a new method of ingesting NPS and perhaps introduced some additional drivers for NPS use. In TIPs surveys, issues with illegal drugs were identified by prison staff, and to a lesser extent PiC, as a problem post-implementation (Hunt et al. in press). The challenges of NPS use in prisons described by PiC and prison staff in this study and our related work (O'Donnell et al. 2021) correspond with other research on NPS use in prisons in England and Wales (Corazza et al. 2020; Ralphs et al. 2017).

A final consequence of new smokefree prison policies discussed by prison staff and PiC was that most previous smokers had now switched to vaping in prison. While e-cigarettes were generally identified as instrumental in the move to smokefree prisons in Scotland, prison staff and PiC also described the challenges which e-cigarettes were causing in prisons. A particular worry among some staff were gaps in evidence on the effects of (continued) exposure to e-cigarette vapour, particularly in an environment in which the vast majority of PiC were using e-cigarettes. Staff also expressed concerns about the fact that e-cigarettes were being repurposed by some PiC for drug taking and were causing organisational challenges. In both groups, some concerns were raised about long-term safety of use of e-cigarettes, affordability of vaping in prisons and continued use of nicotine products. These issues are examined in greater detail in 8.1.5 (see also Hunt et al. (in press); O'Donnell et al. (2021)). In TIPs surveys, staff support for e-cigarettes being available 'to help prisoners stop smoking/manage without tobacco' remained high post-implementation (73%), following an increase in support between the Pre-announcement and Preparatory Phases (Sweeting et al. 2020). However, other opinions about e-cigarettes became more negative among prison staff between the Preparatory and Smokefree Phases. For instance, there was increased agreement that e-cigarettes 'are addictive' and 'raise safety issues' (Hunt et al. in press). In addition, 75% of prison staff agreed that PiC using e-cigarettes to take drugs was a

'moderate/serious problem' among PiC (Hunt et al. in press). Among PiC support for e-cigarettes being available in prisons was very high across all the phases of TIPs (Sweeting et al. 2020). However, similar to staff, PiC's views about some opinion items related to e-cigarettes became more negative post-implementation and 41% agreed that misuse of e-cigarettes for drug taking was a moderate/serious issue in prison (Hunt et al. in press).

8.1.5 E-cigarette use in prisons with recently established smokefree policies: a qualitative interview study with people in custody in Scotland (Publication 5)

Publication 5 provides evidence to answer RQ4: What are PiC's perceptions and experiences of using e-cigarettes in smokefree prisons, including the perceived risks and benefits?

In Scotland, as noted earlier, (rechargeable) e-cigarettes were made available for PiC to purchase shortly before the implementation of smokefree prison policies, to support new smoking restrictions and provide PiC with an alternative to smoking in prison or another novel method of quitting. Rules on e-cigarettes vary in other smokefree prison systems. E-cigarette use is permitted in designated spaces in prisons in England and Wales, and in some US prisons, while their use is *prohibited* in smokefree prisons in New Zealand and Australia (reflecting wider regulation of e-cigarettes in the community in these countries). Despite substantial interest in e-cigarette use in residential smokefree settings and by seldom heard groups (given social inequalities in smoking), qualitative evidence on these issues is limited.

Publication 5 is part of first-of-its-kind research to specifically explore e-cigarette use in PiC *before* and *after* implementation of smokefree prison policy. Our first publication (Brown et al. 2020c) from this wider study explored experiences of e-cigarettes use among PiC just after rechargeable e-cigarette products had gone on sale in Scottish prisons from September 2018 and just before new smokefree rules were implemented. **Publication 5** is novel in reporting experiences of e-cigarette use in PiC in Scotland when the smokefree policy had become established (6-10 months post-implementation) and is based on 28 qualitative interviews with PiC who were current or former e-cigarette users in prison.

PiC's reasons for using e-cigarettes in prison were strongly related to coping with prison smoking restrictions and desires to fulfil previous physical or psychological needs met by smoking, leading some PiC to associate e-cigarettes with lack of choice or personal freedom. Smokefree settings have similarly been identified as a facilitator to e-cigarette use in other populations (temporarily) residing in residential settings such as mental health hospitals (Gentry et al. 2019). Other reasons given by PiC for using e-cigarettes in prisons included curiosity; appealing product features such as flavoured e-liquids; or safety or cost benefits relative to smoking; and, for a sub-group, aspirations to quit smoking long-term. PiC's more general reasons for using e-cigarettes are similar to those reported by e-cigarettes users in the general population (Pepper et al. 2014; Simonavicius et al. 2017). Thus, whether or not people continue to use e-cigarettes after leaving prison is likely to partly depend on whether they have specific goals (Pepper et al. 2014) for continued use of e-cigarettes that go beyond coping with enforced abstinence from smoking while living in a smokefree setting.

Broadly similar to e-cigarette users in the general population (Farrimond 2017; Hartwell et al. 2020; Notley et al. 2018), and in other seldom heard groups (Gentry et al. 2019), PiC's levels of satisfaction with e-cigarette use in prison were influenced by several factors. These included the degree to which e-cigarettes provided adequate symptom relief, replicated or improved certain aspects of smoking (taste, smell, physical sensations), fulfilled psychological needs (e.g. for pleasure or distraction from boredom), and reflected someone's underlying attitudes to smoking cessation and maintenance of nicotine addiction.

Other important considerations when PiC were evaluating e-cigarette use were health effects. In respect of harm perceptions of e-cigarettes, PiC were influenced by absence of long-term studies, experiences of health improvements/side effects after switching to vaping, word-of-mouth and news reports on the harms/benefits of e-cigarette use, and regulations on e-cigarettes in prisons and wider society. A study of harm perceptions of e-cigarettes among smokers and ex-smokers in UK adults, similarly found that gaps in evidence on possible harms of e-cigarette use was a common concern among participants, including among those who used e-cigarettes on a daily basis (Wilson et al. 2019). In the current study, however, there were some

suggestions that PiC were distinct from others in this generation of vapers in that some PiC felt they had less choice in being exposed to potential unknown risks of e-cigarettes given prohibitions on smoking in prisons. While it is significant that some PiC felt 'forced' to switch from smoking to vaping in prisons, it is also important to acknowledge that expert consensus in the UK is that e-cigarettes pose less risk to health than smoking tobacco (NHS Health Scotland 2017; Public Health England 2016) (see also National Academies of Sciences Engineering and Medicine (2018)). However, it has been suggested that conventional harm reduction arguments in support of e-cigarettes in prisons are more compelling if e-cigarettes reduce risks of people returning to smoking *following* release from smokefree prisons (Brown et al. 2020c). (Mis)perceptions of the harms of e-cigarettes among PiC may undermine the potential long-term health benefits of smokefree prison policies. On one hand, PiC who are uncertain about or who overestimate the harms of e-cigarettes relative to smoking tobacco might be deterred from continuing with e-cigarettes following release from prison and therefore switch back to smoking. On the other hand, PiC who underestimate the absolute risks of using e-cigarettes might be diverted away from attempting to quit vaping when they might otherwise have done so. Designing public health campaigns for PiC which strike a balance between communicating messages about (i) known harms of smoking and benefits of switching to e-cigarettes, (ii) potential risks of continued use of e-cigarettes and (iii) scientific uncertainties in evidence is likely to be challenging but would likely benefit from co-design with PiC.

A final consideration among PiC when evaluating e-cigarettes was cost. PiC who found e-cigarettes less expensive relative to smoking in prison appreciated the financial gain. However, a recurring theme in the interviews was concern about e-cigarette affordability, given rules around earning and spending money in prison. Some doubts were expressed about whether products represented value for money compared to those sold on the high street and relative to the degree of satisfaction derived from vaping. These cost factors may have contributed to the difficulties which some PiC were experiencing in using e-cigarettes effectively to manage without tobacco in prison. (A future paper, based on analysis of purchasing data from prison canteens, will provide evidence on whether or not the average PiC is

financially better off using e-cigarettes in prisons as compared to purchasing tobacco pre-smokefree rules).

Findings from the current study corresponded with wider evidence showing that smokers in low-income groups are particularly sensitive to the price of tobacco and substitute nicotine products (Thirlway 2019). For instance, evidence suggests that smokers living on lower incomes are more likely to cite cost as a trigger for making a quit attempt than those on higher incomes (Vangeli and West 2008). Thus, how much money someone might save by switching from smoking to e-cigarettes (or NRT) is likely to be particularly important for smokers on lower incomes. Given this, it has been noted that the relatively high upfront costs of vaping might be a barrier to uptake of e-cigarettes among low-income groups in the general population (Langley 2018). In contrast, emerging evidence that the average smoker will experience financial savings longer-term by switching to e-cigarettes or NRT (Jackson et al. 2019) might facilitate use of e-cigarettes among lower income smokers. Evidence that many smokers are likely to be financially better off vaping compared to smoking may provide some PiC with good reason to continue vaping following release from prison or to quit nicotine products completely.

This study provides novel insights into e-cigarette use behaviour among PiC living smokefree environments. While individual usage patterns varied, descriptions of heavy or excess use of e-cigarettes by participants or other PiC was a recurrent theme in the data. This was characterised by someone holding and using their e-cigarette for extended periods of time, intensive use of e-cigarettes and consuming a reportedly high number of e-liquids per week. There were also some accounts of what might be described as a form of 'binging' behaviour. Data suggest that individual usage patterns were potentially influenced by a combination of individual and situational factors, which overlapped with some of the factors influencing smoking behaviour in prison pre-smokefree rules. These factors include nicotine dependence and habituation to vaping; prison regimes; use of e-cigarettes by PiC to manage negative emotions, including those exacerbated by imprisonment (particularly boredom); limitations on what e-cigarette products could be purchased or borrowed in prisons; and issues with nicotine delivery/symptom relief. Evidence from the general population suggests that frequent or intensive e-cigarette use may

be partly explained by vapers, like smokers, self-titrating in response to issues with nicotine strength or nicotine delivery (Dawkins et al. 2018). This is consistent with complaints in the current study from some PiC that the e-cigarettes they had been using in prisons were not 'strong enough' and not providing adequate symptom relief. Similar issues may be experienced by other, potentially intersecting, seldom heard groups (e.g. people residing in smokefree mental health settings or smokefree supported housing) (Brown et al. 2020c) who are also likely to experience high nicotine dependence and shared barriers to tobacco cessation (Twyman et al. 2014). However, e-cigarette use behaviours in other residential smokefree settings may be tempered by differences in institutional rules, culture and environment, and this will be important to explore as qualitative evidence emerges from other relevant smokefree settings.

Participant views varied about the long-term use of e-cigarettes, with many PiC expressing ambivalence about the future generally. Among those who expressed some interest in continuing to use e-cigarettes longer-term, their reasons were that vaping was something they found pleasurable and/ or was helpful in coping with temporary smoking abstinence in prison or as a smoking cessation aid. There are some similarities here with the reasons given by other adult e-cigarette users who are planning on continuing to use e-cigarettes in the future. However, it is interesting to note that, unlike in other studies (Farrimond 2017; Notley et al. 2018), no PiC we interviewed indicated that vaping was something they intended to continue with because it had become part of their identity or a hobby. In the current study, PiC's reasons for potentially cutting down or quitting e-cigarette use in the future were linked to one or more factors: dissatisfaction, safety, cost, wanting to move away from nicotine addiction and situational factors (such as regaining access to tobacco post-release). The motivations mentioned by PiC broadly correspond to the wider evidence base (Notley et al. 2018; Notley et al. 2021; Yong et al. 2019).

Recent studies have quantified levels of interest in quitting e-cigarettes among e-cigarette users in the general population (Rosen and Steinberg 2019). A 2021 study of established US adult e-cigarette users found that a majority were interested in eventually quitting e-cigarettes, and 15% reported making a quit attempt in the past year (Palmer et al. 2021). The authors concluded from the findings that there is an

'urgent need' to develop interventions to support people who wish to succeed in quitting e-cigarettes (Palmer et al. 2021). This conclusion is supported by evidence from an earlier European survey of adult long-term e-cigarette users which found that less than half believed they would succeed if they decided to stop vaping (Etter 2019). However, progress and investment in the development and implementation of interventions for 'e-cigarette cessation' is likely to be impacted by ongoing debates about the most effective policy and regulatory framework that 'minimizes net harm and maximizes net benefits' in respect of tobacco and e-cigarette use (Abrams et al. 2018, p.199). Such debates reflect differences in opinions about the relative priorities, and positive/negative consequences, of supporting populations to switch from tobacco to e-cigarette use vs. ceasing use of all nicotine products in the long term (Abrams et al. 2018; Thomson et al. 2020). Relevant issues influencing debates include attitudes to nicotine use and dependence, concerns about health and financial burdens from continued use of e-cigarettes and views on the production and marketing of e-cigarette products by commercial companies, including tobacco industry actors (Abrams et al. 2018; Cox and Jakes 2017; Thomson et al. 2020). In the short to medium term, interventions at an individual level will likely maximise success by adopting a person-centred approach which works with individuals according to their own needs and aspirations in respect of nicotine use. In the UK, this is likely to require re-design, piloting and evaluation of services. This is starting to happen within prison healthcare in Scotland. Novel guidance has now been produced to support PiC who wish to cut down or quit vaping, partly informed by evidence from TIPs and 'E-cigarettes in Prisons' study (NHS Health Scotland 2020). Future planned evaluation of the guidance, delayed by the covid-19 pandemic, may provide transferable insights into how to effectively help adults in the UK, and elsewhere, who wish to discontinue vaping, although it is likely that, as with smoking, support measures will need to be adapted for particular populations and settings. Staff training and leadership are also likely to be crucial, based on experiences of developing 'e-cigarette friendly smoking cessation services' in England (Farrimond and Abraham 2018).

8.2 Impact and reception of the work

The publications in this thesis addressed several gaps in the literature on smokefree prison policies and on e-cigarettes in prisons. To reach as wide an audience as possible, publications were featured in reputable, open access scientific peer review journals in the fields of tobacco control, prisoner health, and public health. Findings were also presented at relevant international conferences such as Society for Research on Nicotine and Tobacco – Europe, Law Enforcement and Public Health, and Society for Social Medicine & Population Health and at relevant national conferences/workshops such as Scottish Smoking Cessation Conference, Faculty of Public Health Annual Conference and ASH STA Research Working Group.

Stakeholder engagement was a key priority for TIPs and ‘E-cigarettes in Prisons’ study. Shortly after I joined the research team, SPS convened the SPS Stakeholder Advisory Group (SAG) to support successful implementation of smokefree prisons and to facilitate multi-agency partnership working. I and the PI, and occasionally colleagues from TIPs, attended the monthly meeting of the SAG and I took the lead on providing updates and feeding back qualitative findings from TIPs work-packages 3 and 4 and, later on, from the ‘E-cigarettes in Prisons’ study interviews. Post-implementation, the research team continued to meet with key personnel in SPS and NHS on an ad-hoc basis to feed back findings, including contributing insights on e-cigarette use in prison to inform the development of new NHS guidance on how to support PiC who wish to cut down or quit vaping (NHS Health Scotland 2020).

The University of Stirling has selected TIPs as an impact case study for their submission to subpanel 3 for the UK Research Excellence Framework 2021. The underpinning research for the impact case study for the University of Stirling includes three of the publications included in this thesis (**Publications 1-3**). (In addition, I co-first authored the fourth publication underpinning the impact case study and I was a co-author on the fifth publication). Supporting evidence included in the impact case study comes from additional work that the PI and I undertook, interviewing key stakeholders to understand whether and if so, how partnership working with the TIPs research team had been helpful in the development and implementation of smokefree prison policy. In the interviews, stakeholders spoke of the importance of

TIPs evidence on SHS levels in prisons, led by Sean Semple, in facilitating the decision to implement a comprehensive smokefree policy in Scottish prisons within 16 months (Hunt et al. in press). Stakeholders also spoke about the value of having access to qualitative and quantitative evidence from PiC and prison staff, to support work in the Preparatory Phase and having evidence of impacts post-implementation. They also highlighted that the cross organisational collaboration (between SPS, employee representatives, NHS and our research team) had contributed to the success of a major organisational change, which had brought benefits for prison staff and PiC (Hunt et al. in press).

8.3 Strengths and limitations of the work

Since the publications included in this thesis are based on a series of linked studies that use similar approaches to qualitative research, the strengths and limitations of the combined work are discussed in this section. Further information about the strengths and limitations of the overall TIPs programme of research can be found elsewhere (Hunt et al. in press).

8.3.1 Study design

The overall TIPs programme is novel in being the first study to comprehensively explore implementation of smokefree prison policy across a prison system using a combination of qualitative, quantitative, air quality monitoring and health economic modelling techniques. In combination **Publications 1-5** build on and significantly extend the previously limited evidence from other jurisdictions on perspectives of smokefree prisons among prison staff and PiC, and evidence from these publications have made an important contribution to the successful introduction of smokefree prisons in Scotland (Hunt et al. in press) (see 8.2). A key strength of the programme of work is that TIPs collected data at three points in time: (i) Phase 1 (September 2016 to July 2017), prior to a decision on whether and if so how smoking rules for PiC in Scotland should be changed ('Pre-announcement Phase'); (ii) Phase 2 (August 2017 to November 2018), while the prison system was preparing for policy implementation ('Preparatory Phase') and (iii) Phase 3 (December 2018 to May 2020), after prisons had become smokefree ('Post-implementation Phase'). Benefits of interviewing PiC and carrying out focus groups with prison staff at multiple

timepoints include researchers being able to collect and feed back evidence in 'real time' to the prison and health services, potentially improving participant recall by reducing the time lapse between key events and data collection and enabling exploration of whether and how perspectives and experiences of the research topics changed over time.

The 'E-cigarettes in Prisons' study is also novel in being the first internationally to explore e-cigarette use among PiC from the perspectives of PiC and prison staff. Like TIPs, data were gathered at significant points in policy implementation: (i) September to November 2018, shortly after rechargeable e-cigarettes had gone on sale in prisons but prior to the introduction of comprehensive restrictions on smoking tobacco in prisons and (ii) May to August 2019, when smokefree prison policies and use of e-cigarettes in prisons had become well established. Novel evidence collected post-implementation of smokefree prison policy are reported in **Publication 5**. Findings from the study based on interviews conducted prior to the implementation of smokefree prison policy can be found in Brown et al. (2020c).

Data were collected from different samples of PiC and prison staff over time. The research team chose not to implement a longitudinal qualitative design for several reasons. We were mindful of the challenges of retaining samples in longitudinal research involving seldom heard groups and recognised particular risks of high rates of attrition among PiC, given that large numbers of people enter, leave or move around the prison system each year (Scottish Government 2020c). Retaining samples of prison staff might also have been challenging due to changes in people's roles and place of work and competing demands on staff time, especially at a time of major organisational change. We were also conscious of the burden that a longitudinal study, involving PiC and prison staff from multiple prisons, potentially over several years, would place on the prison staff who would need to help the researchers to trace participants over time (alongside the demands of facilitating other strands of the research programme).

However, had a longitudinal design been implemented, there are a number of practical steps that the research team could have taken to bolster retention rates, drawing on lessons from previous studies (Farrall et al. 2016). For example, in

respect of retaining samples of people post-release from prison the following measures may be beneficial: keeping sample sizes small to ensure sufficient time and resources can be dedicated to follow-up, using multiple re-contact strategies (for example, telephoning, writing and emailing individuals directly or contacting participants via family members/close friends with consent), keeping follow up interviews relatively short, offering to collect data by telephone to reduce burden to participants (for prison staff and people released from prison) and offering a financial incentive (if permitted).

Another strength of the overall TIPs programme is that the study design was developed and agreed in collaboration with key stakeholders through the PI's participation in the Scottish Prison Service's Tobacco Strategy Group and in meetings with other stakeholders, including staff trade unions. Once funding for the study was awarded, we continued to work closely with stakeholders on the design and conduct of the study through the TIPs Research Advisory Group and the Smokefree Prisons Stakeholder Advisory Group, both hosted by the Scottish Prison Service (Hunt et al. in press). Frontline prison staff were able to input into the research through union representatives and points of contact in each prison; involvement in the collection of SHS measurements and meeting researchers when they visited prisons prior to the study starting in September 2016 and when the PI and AB returned to six of the prison to discuss plans for qualitative research in TIPs Phases 2 and 3 (Hunt et al. in press). Plans for the complementary study of 'E-cigarettes in Prisons' were discussed with stakeholders during meetings of the Smokefree Prison Stakeholder Advisory Group, informed by policy makers' and practitioners' needs for evidence on e-cigarettes in prisons.

While the inclusion of lay people in research is recognised as important on ethical grounds and can enhance the relevance and quality of research, it is not without challenge or risk (Russell et al. 2020), particularly in a prison setting (Woodall 2021). This is somewhat reflected in our experiences of TIPs and the 'E-cigarettes in Prisons' study. While the research programmes have collected a wealth of data on PiC's perspectives and experiences of smokefree prisons and fed these back to stakeholders on an ongoing basis, institutional restrictions on accessing PiC, limitations on researcher time and capacity and the need to work at pace at times

have meant that PiC have had a limited role in the research process itself. Building on our experiences of TIPs we believe we are now better placed to involve PiC (and their families) in future research studies we are planning.

8.3.2 Access and sampling gatekeepers

By necessity, participants (both staff and PiC) were recruited through 'gatekeepers' (points of contact) within the prisons, which will undoubtedly have had some bearing on who took part in the research. When writing up the findings of studies we have noted when people with particular characteristics were missing or were inadequately represented in samples of prison staff or PiC. However, the impacts of other forms of sampling bias are much harder to gauge. For example, consistent with our study safety procedures, points of contact would not have approached PiC who were deemed to pose a threat to visitors and may have been less likely to approach PiC they judged to be particularly vulnerable (for example, people with more severe mental health problems, or some people who are separated from the mainstream prison population for their own protection). Despite the researchers asking to speak to people with a breadth of perspectives, points of contact may have preferentially approached PiC and prison staff who were known to hold strong (positive or negative) views on smokefree prison policies, or who they imagined would be 'good' participants (for example, people who are acquiescent, agreeable, articulate or vocal). Sample bias may also have been introduced because those who were invited and agreed to participate in focus groups and interviews might have differed in important ways to those who declined to participate.

Despite limitations in respect of sampling, some confidence in the representativeness (in terms of themes) of findings to the wider population of people living and working in Scottish prisons is given by the fact that samples of prison staff and PiC are broadly inclusive of key sample criteria and reflect a diverse range of positive and negative perspectives on research topics. Confidence is also given by validation, and acceptance, of findings by key personnel in SPS, and correspondence with findings of studies of smokefree prisons in other jurisdictions (Lewis et al. 2014). The extent to which findings are transferable to prison systems elsewhere will likely depend on factors such as the degree of similarity or difference

in the size and structure of the prison estate, resources, levels of commitment to health promotion in prisons and relevant expertise, and the nature and availability of healthcare provision for PiC (and for staff if relevant). The introduction of e-cigarettes into Scottish prisons was generally identified, by both staff and PiC, as one of the key success factors for the relatively smooth implementation of smokefree prison policies. This learning is of course only transferable to jurisdictions which permit use of e-cigarettes in the general population. However, other success factors (such as the need for ongoing communication and engagement with stakeholders when introducing change and motivating, encouraging and supporting PiC to become tobacco abstinent) are likely to be relevant to a broader range of jurisdictions. It is important to note that these kinds of measures have been sufficient for the successful introduction of smokefree prisons in other jurisdictions that do not permit PiC to use e-cigarettes (for example, New Zealand (Collinson et al. 2012) and Northern Territory, Australia (Hefler et al. 2016)).

8.3.3 Data collection

Key strengths in respect of data collection were that methods were, I believe, well suited to the research objectives and took account of ethical and practical issues involved in conducting research with PiC and prison staff, and qualitative data were collected by experienced researchers using recommended techniques for eliciting rich and trustworthy evidence.

In respect of limitations in how focus group data were collected, while we briefed points of contact in prisons about the ideal composition of staff focus groups, we ultimately had no direct control over who was recruited. SPS staff made up the majority of participants, and a sense of a shared professional identity may have helped to facilitate discussion. However, in some focus groups staff were invited from partner organisations, such as NHS and community organisations working in prisons. On one hand, this diversity may have helped to encourage debate and produce richer data (Wilkinson 1998). On the other hand, it may have had a negative effect on group dynamics, making some people feel less confident or willing to fully share their perspectives. Another factor which may have affected group dynamics in some focus groups was the recruitment of staff in different job grades. While I can

recall a number of occasions when staff in managerial roles actively encouraged contributions from less senior colleagues, and appeared conscious of their own 'authority', their presence may have meant that some other participants did not speak as frankly as they might otherwise have done. On the whole, however, participants generally appeared comfortable to exchange, question or challenge viewpoints, as shown in the data excerpts in **Publications 1, 2 and 4**. The focus groups confirmed that the issues of smoking and e-cigarette use in prisons can be emotive for prison staff and our questions and prompts sometimes generated 'lively' and heated debates among participants. Tensions or 'awkward' moments were often diffused by participants themselves (for example, through the use of humour), although researchers also intervened when required, to manage dynamics and check for dissenting or alternative perspectives (Wilkinson 1998).

We were conscious when designing topic guides for interviews with PiC of the need to minimise burden on participants and the prison service and to ensure interview lengths would fit with prison regimes. This meant that we had to prioritise some topics over others in interviews. For example, it might have been valuable to capture people's smoking and e-cigarette use histories inside and outside of prison in far greater detail and to assess smoking and vaping dependence (Bold et al. 2018; Heatherton et al. 1991) using standardised measures. If it had been possible to conduct focus groups as an adjunct to one-to-one interviews with PiC, then the group setting could have been a valuable space to test ideas for measures to support implementation of smokefree prison policies (for example, mock-ups of communication materials for smokefree prisons or information leaflets for PiC on e-cigarette use) and some PiC might have found it easier to suggest their own ideas for implementation measures in a group setting.

As noted, this qualitative research was conducted with prison staff in (nearly) all prisons and PiC in six prisons in Scotland. Due to the relatively small numbers of PiC and prison staff included from each prison per phase and to protect the anonymity of prisons, data were *not* analysed as organisational case studies (Hunt et al. in press). In future studies of smokefree prisons a case study approach (for example, incorporating interviews, focus groups, observations and document analysis) could be valuable in exploring similarities and differences in how a major policy change is

planned and implemented across a prison estate, depending on factors such as size of institution and profile of PiC, for instance.

In both studies, we were fortunate to have finished data collection before the onset of the Covid-19 pandemic, given that safety considerations would, understandably, have taken precedence over completion of the research.

8.3.4 Analysis

The study has used robust, well established methods for analysing qualitative data for applied policy research. The framework approach supports systematic analysis of data through the process of researchers writing summaries for every topic for every interview or focus group and displaying summaries in a grid format. I then used the populated framework grids to interpret data, move to a higher level of abstraction and write up findings. Features of the framework approach which arguably enhance the trustworthiness of analysis include that researchers are required to pay careful attention to every transcript in turn when writing summaries, are able to easily examine data in the wider context of a case and compare themes across cases, and can move back and forth between summaries and raw data using hyperlinks (Gale et al. 2013). In addition, it is easy for researchers to retrieve data extracts on a particular topic to refine or verify interpretations or to include in outputs (Gale et al. 2013).

In line with the research objectives and journal word limits, analysis of focus group data primarily focused on the substantive meanings of what participants said. However, as Kristiansen and Grønkjær (2018, p.10) point out 'secondary interaction analysis of (focus group) data' can lead to new insights on topics and is something that would be valuable in respect of understanding more about how norms around smoking and smoking restrictions in prisons are negotiated among prison staff. Another potentially valuable analysis of the focus group data would be to compare the perspectives on smokefree prison policies between never, ex and former smokers among prison staff. This analysis was not something that we felt able to do robustly in this programme of research because participants in focus groups were heterogenous in terms of smoking status. Future studies of smokefree prisons in other jurisdictions could address this evidence gap by aiming to conduct separate

focus groups with smoking and non-smoking prison staff, and if relevant, between vaping and non-vaping staff.

With respect to analysing interviews with PiC, it would potentially be valuable for future studies to measure and take account of the degree to which (abstinent) smokers are dependent on nicotine (for example, The Fagerstrom Test for Nicotine Dependence (Heatherton et al. 1991)), to enable robust exploration of relationships between levels of nicotine dependence and attitudes and experiences of smokefree prison rules.

8.4 Implications and areas for future research

Several measures that might promote success and minimise harms of smokefree prison policies are suggested by findings of this thesis. First, strong management and leadership of smokefree prison policies at both national and local level is likely to be valuable in driving and successfully bringing about change. Second, achieving widespread awareness of plans to implement smokefree prison policies among PiC and prison staff is important in the Preparatory Phase. Displaying countdown posters in key areas in prisons to achieve this is likely to be relatively low cost and effective but using multiple communication channels may help to extend reach and impact. Stakeholders are likely to appreciate early communication about the rationale for smokefree policy, detailed implementation plans, support measures and strategies to mitigate potential adverse consequences. Engaging in dialogue with prison staff and PiC about smokefree policies is important to ensure that their opinions, needs, concerns and suggestions are considered when developing implementation strategies. Third, given the scale and complexity of the task of removing tobacco from prisons, partnership working (e.g. across prison and health services) is likely to be necessary. Fourth, provision of evidenced-based smoking cessation/abstinence support is likely to be important for successful implementation of smokefree prison policies. Several individual-level and environmental barriers to quitting or abstaining from smoking in prison were identified in the studies included in this thesis and taking steps to reduce these barriers is likely to be helpful. Targeted campaigns could for example cover the benefits of stopping smoking and of protecting people from SHS exposures, tackle common misperceptions about smoking and smoking cessation (e.g. associations of smoking with stress relief and beliefs that willpower

alone is key to successful quitting), connect with PiC's values and aspirations in relation to autonomy, health and wellbeing, personal finances and family life, and inform people about support and treatments for smoking cessation/abstinence. The involvement of peer mentors and respected staff, such as Physical Education Instructors, in delivering messages may improve their resonance. Practical measures to address social barriers to stopping smoking in prisons could include smokefree wings and developing family-based smoking cessation interventions. Addressing environmental barriers may be challenging within operational constraints, but it is important to ask PiC for their ideas for measures that would make a difference to them and provide meaningful diversion from smoking. Trying to address limitations in existing interventions to support PiC to stop smoking (e.g. capacity and prescribing processes) prior to implementation, as happened in Scotland, may help to improve outcomes. When developing support pathways, it is important to consider that ongoing provision is likely to be needed for new admissions, people who are struggling to manage without tobacco and people who are using nicotine products but would like to stop. To fully maximise the benefits of smokefree prison policies, it is also important to consider how people will be supported to maintain smoking abstinence when they are released from prisons should they wish to do so.

Finally, in jurisdictions that permit e-cigarette use in the general population, consideration will need to be given to whether to give PiC the choice to use e-cigarettes in lieu of tobacco. On one hand, e-cigarettes have helped individual (former) smokers and prison staff in Scotland to undergo a challenging period of change and are continuing to help with the ongoing operation of smoking restrictions. However, on the other hand, the availability of e-cigarettes in prisons has brought challenges, including some concerns about safety, cost, e-cigarettes being repurposed by some PiC (e.g. for drug taking), continued use of nicotine products, and organisational problems linked to e-cigarettes replacing tobacco as a sought after commodity in prisons (see also O'Donnell et al. (2021)). If other jurisdictions take the decision to make e-cigarettes available in smokefree prisons, then it may be beneficial to introduce and enforce rules on e-cigarette use indoors, carefully consider product choices (considering security risks and whether e-cigarettes are likely to provide adequate satisfaction), and ensure stakeholders have reliable, up-to-date and accessible information on e-cigarettes. It is also important that health

services are able to support those using e-cigarettes in line with their long-term goals in respect of using nicotine. Learning from Scotland may also usefully inform implementation of smokefree policies in other residential settings, such as mental health hospitals, and support further public health achievements for PiC.

Further research in several areas would be beneficial. First, in-depth case study research on the implementation of smokefree prison policies could usefully explore whether facilitators, barriers and success factors for smokefree prison policies vary depending on prison type (e.g. size, security level, population characteristics). Where feasible, future studies could incorporate a qualitative longitudinal approach to further explore whether and if so how, opinions and experiences of prison smoking restrictions change over time and could explore smokefree prison policies from the perspectives of never smokers/ ex-smokers who had quit several years prior to entering a smokefree prison. Second, further studies are needed to understand experiences and impacts of smokefree prison policies from the perspectives of families of PiC. Topics to explore include impacts on family members' tobacco/e-cigarettes attitudes and behaviours, financial implications for families of having a relative living in a smokefree prison and any pressures family members may feel to engage in smuggling of tobacco. Third, research is required to inform the development and piloting of interventions to reduce the likelihood of people relapsing back to smoking following release from prison. This requires greater understanding of people's experiences as they transition out of smokefree prisons, including facilitators and barriers for smoking relapse, ideas on what might help people to avoid relapse and views on the acceptability and feasibility of candidate interventions. Fourth, ongoing monitoring of e-cigarette use in prisons is required to help inform evaluations of their net benefits and risks. Specifically, evaluation of new guidance on supporting PiC who wish to cut down or quit vaping would be beneficial to understand levels of success, mechanisms of change and areas for improvement. Longitudinal qualitative studies would be beneficial in understanding e-cigarette use trajectories among PiC, including the role of e-cigarettes in preventing (or not) relapse to smoking post-release. Finally, ongoing monitoring and research is required to understand the effect that management of the covid-19 pandemic in prison is having on experiences of smoking abstinence and use of e-cigarettes among PiC, particularly among those entering prisons. Research is also required to

understand the broader effects that covid-19 restrictions and related changes in operational practices are having on the broader health and well-being of PiC and prison staff. While the covid-19 pandemic will undoubtedly have caused considerable challenges for those living and working in prison, some changes might be welcomed, e.g. mobile phone use for PiC in Scottish prisons (Scottish Government 2020a), and could provide impetus for continued innovation. We have applied for funding for further research to address several of the evidence gaps outlined here.

8.5 Conclusion

The studies included in this thesis have explored the implementation of smokefree prison policies from the perspectives of prison staff and PiC, using qualitative data collected before and after the transition to smokefree prisons in Scotland. Key findings are summarised below, grouped together by RQ(s):

RQ1: What views on smokefree prison policies are held among prison staff? What are the reasons for support or opposition to smokefree prison policy among prison staff?

RQ3: What views on smokefree prison policies are held among PiC? What are the reasons for support or opposition to smokefree prison policy among PiC?

Publications 1, 3 and 4 have provided novel evidence on views on smokefree prison policies among prison staff and PiC. These studies found that support for smokefree prison policy was greater among prison staff than PiC before and after policy implementation, although PiC were generally accepting of or resigned to the new rules. Whether prison staff and PiC expressed support or opposition to smokefree prison policy was influenced by (i) beliefs on legitimacy and fairness of smokefree rules in prisons, (ii) views on the ease or difficulty of implementing smokefree policies and (iii) perceptions of positive/negative consequences of restricting smoking in prisons. Findings highlight that opinions and experiences of smokefree prison policies among PiC and prison staff can be complex; it is possible for individuals to be positive about some dimensions of smokefree policies, but negative about others.

***RQ2:** What are prison staff's perceptions and experiences of e-cigarettes for PiC in smokefree prisons, including the perceived risks and benefits?*

***RQ4:** What are PiC's perceptions and experiences of using e-cigarettes in smokefree prisons, including the perceived risks and benefits?*

Publications 2, 4 and 5 have contributed novel evidence on e-cigarettes in prisons from the perspectives of prison staff and PiC. Crucial benefits of e-cigarettes for the successful implementation of smokefree prison policies and supporting abstinent smokers among PiC were reported by both groups. Conversely, perceived risks of e-cigarettes in smokefree prisons mentioned by prison staff mirrored some anxieties expressed pre-implementation about exposures to e-cigarette vapour at work, use of e-cigarettes to take illegal drugs and organisational challenges arising from substitution of smoking with vaping in prisons. Other concerns raised among some prison staff and PiC related to issues such as uncertainties about the long-term effects on users of e-cigarette use, cost, and some concerns about continued use of nicotine products.

Publication 5 also provides novel insights into e-cigarette use behaviour among PiC living in smokefree environments. While individual usage patterns varied, descriptions of heavy or excess use of e-cigarettes by participants or other PiC was a recurrent theme in the data. Factors identified as influencing usage patterns included: nicotine dependence and habituation to vaping, prison regimes, use of e-cigarettes to manage negative emotions, restrictions on e-cigarette products in prisons, and issues with nicotine delivery/symptom relief. These factors may make it hard for PiC who wish to cut down or stop vaping in prisons and findings support the need for interventions to support people making changes in e-cigarette use behaviour.

***RQ5:** What are the perceived positive/negative impacts of smokefree prison policy for prison staff, PiC and prison systems?*

Findings from **Publication 4** suggest that implementation of smokefree prison policy has been largely successful for the prison service in Scotland. Non-compliance with the smokefree policy has reportedly not been a major issue. Despite widespread prior anxieties, substantial disorder in prisons did not materialise, although there were a few suggestions from PiC that smokefree rules were nonetheless contributing to some tensions or conflict in prisons. Protection of people working and living in prison from SHS exposures, particularly prison staff, was perceived to be a significant benefit of smokefree prison policies. Benefits to the health of PiC who were abstaining from smoking were discussed, but these important gains may be eroded if many PiC relapse to smoking post-release, suggesting the need for relapse-prevention interventions. Issues with smokefree prison policies were also reported, including physiological and psychological challenges of enforced smoking abstinence for some PiC and difficulties for prison staff managing the replacement of tobacco with alternative substances in prisons, particularly e-cigarettes.

***RQ6:** What are the perceived facilitators, barriers and success factors for implementation of smokefree prison policy?*

All publications included in this thesis, but particularly **Publication 4**, have contributed to strengthening understanding of the perceived facilitators/barriers, and success factors for smokefree prison policy. Identified issues perceived to either create opportunities or challenges for restricting smoking in prisons related to three themes: the role of smoking in prisons, strengths and limitations of prison smoking cessation services, and varied levels of interest and motivation in stopping smoking among PiC. Practical measures perceived to reduce implementation barriers and increase success related to four key areas: preparing for change, communication and engagement, partnership working, and the availability of support for (previous) smokers.

In conclusion, evidence from Scotland provides some confidence that major organisational change can be successfully undertaken in prisons, to help improve the health of prison staff and PiC, providing that it is underpinned by adequate planning, communication, and support.

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Appendix 1. Related Publications

Phase	Description of study	Reference
Pre-announcement	A survey study of predictors of opinions on smokefree prison policies.	Sweeting H, Semple S, Demou E, Brown A , and Hunt K. (2019) Predictors of opinions on prison smoking bans: analyses of survey data from Scottish staff and prisoners. <i>Tobacco Induced Diseases</i> , 17(June):47, pp.1-16, Available: https://doi.org/10.18332/tid/109559
Preparatory	A qualitative interview study of views and experiences of e-cigarette use in prisons preparing to go smokefree.	Brown A , O'Donnell R, Eadie D, Purves R, Sweeting H, Ford A, Bauld L and Hunt K (2020) Initial views and experiences of vaping in prison: a qualitative study with people in custody preparing for the imminent implementation of Scotland's prison smokefree policy. <i>Nicotine and Tobacco Research</i> , 23(3), pp. 543-549. Available: https://doi.org/10.1093/ntr/ntaa088
Post-implementation	A study measuring objective levels of SHS immediately before and after implementation of smokefree prison policies.	Semple S, Dobson R, Sweeting H, Brown A , and Hunt K on behalf of the Tobacco in Prisons (TIPs) research team. (2020) The impact of implementation of a national smoke-free prisons policy on indoor air quality: results from the Tobacco in Prisons study. <i>Tobacco Control</i> , 29, pp. 234-236. Available: http://dx.doi.org/10.1136/tobaccocontrol-2018-054895
	A study comparing objective levels of SHS after smokefree policy implementation with measures taken during and before policy development.	Demou E, Dobson R, Sweeting H, Brown A , Sidwell S, O'Donnell R, Hunt K & Semple S (2020) From smoking-permitted to smokefree prisons: a 3-year evaluation of the changes in occupational exposure to second-hand smoke across a national prison system. <i>Annals of Work Exposures and Health</i> , 64(9), pp. 959-969. Available: https://doi.org/10.1093/annweh/wxaa073
	A survey study exploring changes in opinions on smokefree prison policies over time.	Sweeting H, Demou E, Brown A & Hunt K (2020) Prisoners and prison staff express increased support for prison smoking bans following implementation across Scotland: results from the Tobacco In Prisons study. <i>Tobacco Control</i> . Online first: 25th June 2020. Available: https://doi.org/10.1136/tobaccocontrol-2020-055683
	Final report for TIPs for NIHR	Hunt K, Brown A , Eadie D, McMeekin N, Boyd K, Bauld L, Conaglen P, Craig P, Demou E, Leyland A, Pell J, Purves R, Tweed E, Byrne B, Dobson R, Graham L, Mitchell D, O'Donnell R, Sweeting H &

	<p>Semple S (in press) Evaluating progress towards, and impacts of, implementation of smoke-free prisons in Scotland: the mixed methods Tobacco in Prisons Study (TIPs). <i>Public Health Research</i></p>
<p>A qualitative study of staff perspectives on e-cigarette use by PiC in Scottish prisons</p>	<p>O'Donnell R/Brown A, Eadie D, Mitchell D, Bauld L, Demou E, Purves R, Sweeting H & Hunt K. The challenges associated with e-cigarette use by people in custody in Scottish prisons: a qualitative interview study with prison staff (under review)</p>

Appendix 2. Author contribution statements

Publication 1

Ashley Brown led on managing and analysing the focus group data using the framework approach, and wrote the manuscript, with input from all authors. Helen Sweeting was involved in funding acquisition, contributed to the overall design of the study, managed the surveys, led analysis of the survey data and input into interpretation of the staff focus group data. Greig Logan input into data collection and interpretation of the staff focus group data. Evangelia Demou was involved in funding acquisition, contributed to the overall design of the study and input into data collection and interpretation of the staff focus group data. Kate Hunt (PI) conceived and directed the overall study, led on funding acquisition, carried out a substantial number of the staff focus groups and contributed to interpretation of the focus group data and reviewed all drafts of the manuscript. All authors contributed to interpretation of the data and reviewing the final manuscript.

Publication 2

Ashley Brown led on managing and analysing the focus group data using the framework approach, and wrote the manuscript, with input from all authors. Helen Sweeting and Evangelia Demou were involved in funding acquisition, contributed to the overall design of the study, and input into data collection and interpretation of the staff focus groups. Sean Semple and Linda Bauld were involved in funding acquisition, contributed to the overall design of the study and contributed to interpretation of the staff focus groups. Greig Logan input into data collection and interpretation of the staff focus groups. Kate Hunt (PI) conceived and directed the overall study, led on funding acquisition, carried out a substantial number of the staff focus groups, conducted independent analysis of the focus group data and reviewed all drafts of the manuscript. All authors contributed to interpretation of the data and reviewing the final manuscript.

Publication 3

Ashley Brown led on study governance, planning fieldwork, drafting study materials, collecting, managing and analysing the data for TIPs work-package 4. Ashley also led on analysis for the combined work-package 4 and work-package 5 dataset and wrote the manuscript, with input from all authors, particularly Douglas Eadie. Douglas Eadie was involved in funding acquisition, contributed to the overall design of the study, and planned fieldwork, collected data and led data management and analysis of TIPs work-package 5 interviews. Richard Purves planned fieldwork, collected data and contributed to data management and analysis of TIPs work-package 5 interviews. Andrea Mohan contributed to data management and analysis of TIPs work-package 5 interviews and to verification of data analysis of the combined TIPs work-package 4 and work-package 5 dataset. Kate Hunt (PI) conceived and directed the overall study, led on funding acquisition, contributed to the design of fieldwork and reviewed all drafts of the manuscript. All authors contributed to interpretation of the data and reviewing the final manuscript.

Publication 4

Ashley Brown led on study governance, planning fieldwork, drafting study materials, collecting, managing and analysing the data, and wrote the manuscript with input from all authors. Danielle Mitchell, supervised by Ashley Brown, contributed to data summarisation. Kate Hunt (PI), led on funding acquisition, directed the study overall, contributed to the design of fieldwork, study materials and collection of data and reviewed all drafts of the manuscript. All authors contributed to interpretation of the data and reviewing the final manuscript.

Publication 5

Ashley Brown was involved in funding acquisition, contributed to the overall design of the study, led on study governance, planning fieldwork, coordination and supervision of data collection, data management and analysis, and wrote the manuscript, with input from all authors. Rachel O'Donnell contributed to planning fieldwork, carried out a substantial number of interviews, was involved in data summarisation, and independently identified high-level themes from the interviews. Douglas Eadie was involved in funding acquisition, and contributed to the overall design of the study, and data collection. Allison Ford contributed to data collection. Danielle Mitchell and Alison Hackett were involved in data summarisation, supervised by Ashley Brown, with input from Rachel O'Donnell. Helen Sweeting and Linda Bauld were involved in funding acquisition and contributed to the overall design of the study. Kate Hunt (PI) conceived and directed the overall study, led on funding acquisition, contributed to the design of fieldwork, and interpretation of the data and reviewed all drafts of the manuscript. All authors contributed to interpretations of the data and reviewing the final manuscript.

Table 4. Contribution to data collection, management and analysis of included studies

	Data collection	Data management/analysis
Publication 1	<ul style="list-style-type: none"> • AB contributed to 1/19 focus groups 	<ul style="list-style-type: none"> • AB led on management and analysis of staff focus group data using the framework approach and carried out summarisation of focus groups.
Publication 2	<ul style="list-style-type: none"> • AB contributed to 1/19 focus groups 	<ul style="list-style-type: none"> • AB led on management and analysis of staff focus group data using the framework approach and carried out summarisation of focus groups.
Publication 3	<ul style="list-style-type: none"> • AB carried out ~50% of PiC interviews for TIPs Phase 2 work-package 4. 	<ul style="list-style-type: none"> • AB led on data management and analysis for work-package 4 and carried out summarisation of all work-package 4 PiC interviews. AB also led on analysing the dataset combining interviews carried out as part of work-packages 4 and 5.
Publication 4	<ul style="list-style-type: none"> • AB led 100% staff focus groups (a co-moderator was present for most groups). • AB carried out ~75% of PiC interviews. 	<ul style="list-style-type: none"> • AB led on data management and analysis and carried out summarisation of ~75% of staff focus groups and PiC interviews and checked a further sample of data summaries for accuracy/consistency.
Publication 5	<ul style="list-style-type: none"> • AB carried out ~40% of the PiC interviews. 	<ul style="list-style-type: none"> • AB led on data management and analysis, carried out summarisation of ~35% of PiC Interviews and, alongside a co-author, checked a further sub-sample of data summaries for accuracy /consistency.

Appendix 3. Example Participant Information Sheet: People in Custody

E-cigarettes In Prisons Study, 2019 (unformatted version)

Another chance to have your say on e-cigs in Scottish prisons

The E-cigarettes In Prisons Study is being carried out by some of the same Stirling and Glasgow researchers who are involved in the Tobacco in Prisons (TIPs) study. It has collected the views of people in custody once before.

Now all Scottish prisons have a smoke-free policy, we would like to give people in custody another chance to tell us what they think about e-cigs/vapes by taking part in an interview. We hope that the results of the E-cigs In Prisons Study will help the Scottish Government, Scottish Prison Service and NHS to support people in custody to cope without tobacco. If you are interested in taking part, please speak to the member of staff who gave you this leaflet.

We may not manage to speak to everyone who would like to take part.

Why have I been given this leaflet?

The E-cigs In Prisons Study is looking at what people in custody and prison staff think about the use of e-cigs/vapes in Scottish prisons. It is also looking at how canteen spending on items such as tobacco, e-cigarettes/vapes and food and drink changes over time. It is being carried out by researchers from the Universities of Stirling and Glasgow. The study is independent of the Scottish Government, Scottish Prison Service and NHS.

As part of the E-cigs In Prisons Study, we are inviting people in custody (aged 18+) to take part in an interview with university researchers. We are really keen to hear the views of people who are currently using e-cigs/vapes and people who have tried and then stopped using e-cigs/vapes in prison.

What will happen in the interviews?

We will ask you:

- What it is like to use an e-cig/vape in prison.
- What you think have been the benefits of allowing people in custody to use e-cigs/vapes.
- What issues have arisen since people in custody have been able to use e-cigs/vapes and how you think problems could be fixed?
- Your smoking history and thoughts about the support available in this prison to help people to cope without tobacco.

The interviews should take about 45 minutes. We will ask if it is ok to sound record what you say so we don't miss any of the points you want to make. Audio recordings of interviews will be typed out by external companies who will have signed agreements with the university to keep answers confidential.

Do I have to take part?

No. You don't have to take part. Your decision about whether or not to take part in the research will not affect the treatment and care you get in prison in any way.

If you do take part, you do not have to answer all the questions and you can stop the interview at any time without giving a reason.

Is the interview confidential?

Strong measures are in place to keep your answers confidential. The only time we might have to tell someone else what you say is if:

- We believe that someone could be seriously hurt or there is a serious risk to security
- We have specific information about serious crimes or serious violations of prison rules.
- We are required by law to share information.

What happens to my interview answers?

The researchers will publish and give talks about the results of the E-cigs In Prisons Study. No names will be included in outputs, but there is a very small chance that someone could be identifiable to people they know.

We will ask if a copy of the whole typed up interview can be shared with other researchers with University of Stirling's approval and strict confidentiality rules. Strong measures are in place to make it difficult for anyone to be identified from whole typed up interviews. We will not share your answers with other researchers unless you agree by signing 'Section 7' of the consent form. It is your choice.

Cancer Research UK is paying for the study.

This study has been approved by the University of Stirling General University Ethics panel and the SPS.

You can find out more about how your answers will be handled by the researchers by reading the separate 'Privacy Notice'.

To find out more about E-cigs In Prisons Study or to withdraw your answers within one month of the interview please contact: Kate Hunt, Ashley Brown or Rachel O'Donnell, University of Stirling (ISM, Pathfoot Building), Stirling, FK9 4LA

If you would like to speak to someone else not involved with this research or pursue any complaint, you can contact: Professor Jayne Donaldson, Dean of Faculty Health Sciences & Sport, Health Sciences Stirling, Pathfoot Building, University of Stirling, Stirling, FK9 4LA

If you wish to use any of the rights listed in the Privacy Notice or complain about how we have handled your personal data, please contact: Joanna Morrow, Data Protection Officer and Deputy Secretary of University of Stirling, data.protection@stir.ac.uk, University of Stirling, Stirling, FK9 4LA.

Appendix 4. Example Privacy Notice

Privacy Notice for E-cigarettes (e-cigs) In Prisons Study: people in custody and staff interviews 2019

As you may know, a new Data Protection law (known as the General Data Protection Regulation) was introduced in the UK in May 2018. This says we need to provide you with the small print ('Privacy Notice') on how your interview answers will be handled.

Who will be in charge of any Personal Data about me?

The University of Stirling will be in charge of the information, including any personal information (data), you give the research team as part of the E-cigs In Prisons interviews. (Under the new Data Protection law, the University will be what is known as the 'Controller' of the data you give us.)

Why do the research team need any personal data?

The new Data Protection law means that we have to remind you that we are collecting some identifiable information (such as your name and age, the name of the prison where you are living or working and job title (for prison staff)). This is known as personal data. We are also collecting what is known as 'special category' information about smoking and e-cigarette use. All the interview questions are optional, so you can choose not to answer a question. We are doing the interviews to help us understand the views and experiences of people in custody and staff about e-cigarettes and prison stop smoking support, now that Scottish prisons have gone smoke-free. We are only collecting the information (data) we need to help us do this.

What is the legal basis for processing any data you choose to give us?

Your answers will be collected, used and stored (processed) in line with the new Data Protection law. The legal reason for processing your answers (personal data and special category of personal data) is known as 'public interest'.

What do we do with the answers that you give?

The E-cigs In Prisons research team at the Universities of Stirling and Glasgow (U.K.) will have access to all information, including any personal information (data), you give as part of the interview. Strong measures are in place in the universities to protect the confidentiality of the information that you give to us. The only time we might tell someone else what you say is if:

- we believe that someone could be seriously hurt or there is a serious risk to security
- we have specific information about serious crimes or serious violations of prison rules
- we are required by the law to share information.

Audio recordings of interviews will be typed out (transcribed) by external companies who will have signed agreements with the university to keep all answers completely confidential. The University of Stirling remains responsible for the information you provide.

Will my answers be used for future research studies?

If you agree, a copy of the typed-up interview may be shared with other researchers with the University of Stirling's approval and strict confidentiality rules. Strong measures are in place to make it difficult for anyone to be identified from copies of typed up interviews, but it is entirely your choice. **We will not share your answers with other researchers unless you agree to 'Section 7' of the consent form.**

How long do we keep your answers?

We will keep the information you give the research team for 10 years after the study finishes. After this time, all paper and electronic data and permission (consent) forms will be securely deleted.

Are the research results published?

The research team will make sure they take account of everyone's answers to write reports and research articles and give talks as part of the E-cigs In Prisons Study. The researchers might use some of your words when they write and speak about the research results. No names will be included in articles, papers or talks, but there is a very small chance that someone could be identifiable to people they know.

What are your rights?

Please remember that you can stop at any time in the interview and you can withdraw your data within one month of the interview without giving a reason by writing to Kate Hunt, Pathfoot Building, ISM, University of Stirling, Stirling, FK9 4LA.

You also have the right to object to us processing your answers however, please note that once the data are being analysed and/or results published it may not be possible to remove your data from the study.

If at any point you think the personal data which we are holding about you might be incorrect, you can ask to see it and have it restricted, corrected or deleted.

If you wish to use any of these rights or to complain about how you think we have handled your personal data, please contact:

Joanna Morrow, Data Protection Officer and Deputy Secretary of University of Stirling, data.protection@stir.ac.uk, University of Stirling, Stirling, FK9 4LA.

If you would like to speak to someone else not involved with this research or pursue any complaint, you can contact:

Professor Jayne Donaldson, Dean of Faculty Health Sciences & Sport, Health Sciences Stirling, Pathfoot Building, University of Stirling, Stirling, FK9 4LA

If you are not happy with our response or believe we are not processing your personal data in accordance with the law, you can complain to the Information Commissioner's Office (ICO) <https://ico.org.uk/> or 0303 123 1113.

Appendix 5. Example Consent Form

E-cigarettes In Prisons Study, 2019: interview consent form

Part A: Please tick ONE BOX (either Yes or No) for every statement

	Yes	No
<p>1</p> <p>I understand about the E-cigs In Prisons Study from reading the information sheet, or talking to a researcher.</p> <p>I have had the chance to think about whether I want to take part and to ask questions about the study.</p>		
<p>2</p> <p>I understand that taking part is my choice. I know that I can stop at any time during the interview.</p> <p>I know that I can withdraw my data within one month of the interview without giving a reason.</p> <p>I understand that when analysis has started I may not be able to remove my data from the study.</p>		
<p>3</p> <p>I agree to a sound recording being made of what I say.</p> <p>I understand that the information I give will be stored safely at the Universities.</p> <p>I understand that no one in the prison service will hear the interview recording.</p>		
<p>4</p> <p>I understand I will not be named in any research talks, reports or articles, but there is a very small chance I could be identifiable to people who know me.</p>		
<p>5</p> <p>I agree that quotes of what I say may be used in future reports, research articles or talks.</p>		
<p>6</p> <p>I agree to take part in this study.</p>		

Please turn over to complete the consent form.

Part B: Please read together with the researcher and complete at the end of the interview.

	Yes	No
7 I agree that an edited copy of my <u>whole</u> typed up interview could be shared with other researchers. I understand that this could only happen with the University of Stirling's approval and if strict confidentiality rules were followed. I am aware that strong measures are in place to make it difficult for anyone to identify me from the copy of my typed up interview. I understand that it is my choice.		

Participant signature:

Researcher signature:

Date:

Appendix 6. Abbreviated Topic Guides

i. TIPs Phase 1 Staff Focus Groups (Publications 1 &2)

Background

How long (each participant) has worked in this prison; whether he/she has worked in other prisons; general atmosphere and relationship in the prison.

Smoking

Smoking status/history of participants; whether smoking patterns changed since starting work at this prison; what is it like being a smoker/non-smoker working in this prison.

Prison context and smoking: how common/'normal' smoking is in this prison; how smoking fits into day-to-day life of this prison; whether smoking is more common in this prison than others; extent of 'trade' in tobacco between PiC in this prison; when/ where PiC usually smoke; exactly where and when are they allowed to smoke; what PiC and staff colleagues think about the current rules around smoking in this prison; when/where do smoking staff smoke usually; how well are smoking rules adhered by staff & PiC; in what ways, if any, are the rules broken; how colleagues view smoking and PiC who smoke in the prison.

Smoking cessation: what might make PiC want to stop smoking whilst in prison; what might make them not want to stop smoking; what sort of help/ support do they (and smoking staff) need to stop smoking; who is best placed to give this support; are different kinds of support needed to give up smoking compared to outside of prison; any past experience of smoking cessation services; what do you think of the support that is available for PiC (and prison staff) who want to stop smoking whilst in prison.

E-cigarettes

Have you/other people you know used e-cigs; what do you think about e-cigs; should PiC/staff be allowed to use e-cigs in prisons (in what ways would it be a good/bad thing); what issues could be raised by allowing use of e-cigs in prisons.

Experience or threats of violence

Since coming to this prison, has he/she experienced any threats of violence/violence or bullying that were so serious that he/she became afraid; were any of these related to tobacco or smoking?

Smoking Bans

What did you think when the smoking ban was introduced in Scotland in 2006 (in what ways was a good/bad thing) and the decision to exempt prisons from the legislation; have you heard about some prisons in Wales and in England going smoke-free (what do you think about what has happened); do people talk about increased smoking restrictions (in prisons) in other countries; what do you/ PiC /other prison staff think about introducing smoking bans in prisons; what should Scotland do; how might introducing more smoke-free areas in prisons in Scotland be a good/bad thing and change prison life (for PiC / staff who smoke/don't smoke); what would make it easier/harder to extend smoke-free areas in prisons; what would make it easier/harder to ban smoking altogether.

ii. TIPs Phase 2 work-package 4 People in Custody Interviews (Publication 3)

Background

What it is like in the prison on a typical week/weekend day: how they spend their time; what, if anything, is good/bad about the prison; how well prisoners and staff get along; what the atmosphere is like. How long they have been in prison and when they expect to get out; whether they have been in prison before - roughly how many times and for how long.

Smoking History

For smokers: whether they smoked before they came to prison and whether and how their smoking habits have changed since coming to prison; whether they are interested in giving up smoking while in prison.

For ex-smokers: when did they quit smoking and what it was like; what it is like to be an ex-smoker in a prison.

For never smokers: what it is like being a non-smoker in a prison.

Awareness of and opinions on prison smoke-free policies

Explore opinions about the introduction of smoke-free policies in Scottish prisons from late November 2018: whether they have heard that Scottish prisons will become smoke-free. Whether or not they agree with plans to make prisons smoke-free; what might be good and bad about prisons being smoke-free; have their views on smoke-free prisons changed over time and reasons for this.

Explore views on smoke-free prison policies in England and Wales: what they think about prisons in Wales and England going smoke-free; what, if anything, they have heard about what life is like in these prisons since they became smoke-free.

Life in prison in anticipation of going smoke-free

Explore what it is like to live in the prison in the lead up to the introduction of a smoke-free policy: how does smoking fit into the day-to-day life of the prison; whether there have been any changes in smoking within prisons in the last few months.

For current smokers: whether they expect to be in the prison when it becomes smoke-free in November 2018; whether and how plans to make prisons smoke-free are influencing their own smoking habits.

Stop-smoking support: how easy or difficult is it for prisoners to give up smoking while in prison; what they think about the help that is currently available to prisoners who want to stop smoking; what works well and less well; whether stop-smoking support is good enough for the prison to become smoke-free; whether/how there have been any changes in stop-smoking support in the last few months (e.g. since July/August 2017); what, if anything, could be done to make prisoner stop-smoking support better.

E-cigarettes (vapes): whether they have used e-cigs outside or inside of prison; whether they think that prisoners should be allowed to use e-cigs in prisons in lead up to and/or after prisons become smoke-free.

Communication and engagement with staff and prisoners: whether, when and how plans to make the prison smoke-free were communicated to prisoners and their families – what worked well and less well and lessons learned; whether prisoners have been involved in getting the prison ready to become smoke-free – what worked well and less well and lessons learned. Whether they have noticed any other changes in the prison in the lead up to the ban.

Implementing a smoke-free prison policy

[If not already covered] **What, if anything, would make it easier for prisoners to live in a smoke-free environment from November 2018:** how easy or difficult will prisoners find it

when the prison becomes smoke-free from November 2018; which groups of staff/prisoners might find smoke-free living easier and which groups might find it harder. What, if anything, they have heard about actions being taken to implement a smoke-free policy in this prison: what is working well and less well about implementation of a smoke-free policy and reasons for this; what could be better about how this prison is implementing a smoke-free policy.

Concluding comments

What the one or two most important issues relating to prison smoke-free policies are; whether there is anything else the participant would like to discuss.

iii. TIPs Phase 3 People in Custody Interviews (Publication 4)

Background

Age; when (month/year) s/he entered prison; sentence type; sentence length; whether this is the first time s/he has been in prison.

Smoking and vaping status and history pre ban or arrival in custody

Did s/he smoke pre-ban or pre-arrival in prison (from 1st December 2020)?

For previous smokers. When did s/he start smoking? How did s/he feel about smoking at that time? Did s/he try to cut down or stop smoking (before entering prison/before smokefree rules came in)? Why? What support did s/he use? Did s/he manage to cut down or stop? For how long? How easy or difficult did s/he find it to try to stop smoking?

For non-smokers before the introduction of smokefree rules/before entering prison: has s/he ever smoked? When? Why s/he decided to quit? How she/he did it?

Did s/he ever use e-cigarettes (before entering prison/before introduction of the smokefree policy)? When did s/he start using e-cigarettes? Why? Did s/he use e-cigarettes regularly at that time? What did s/he like or dislike about using e-cigarettes? Did s/he use e-cigarettes only or did s/he also smoke tobacco?

Overall experiences, benefits, and challenges of living in a smoke-free prison

Overall, what it is like living in a smoke-free prison? What is good/bad about living in a smoke-free prison? Has the introduction of smoke-free rules been like s/he imagined?

Explore views on positive/negative consequences of smokefree prison policy (e.g. 'trouble' in prisons; working conditions for staff/living conditions for PiC; physical and/or mental health and wellbeing of PiC, families and staff; smoking behaviour; impacts on prison service/life in prison). **To what extent was preparation good in this prison for the smokefree policy?** What helped/did not help and why?

Communication of smoke-free prison rules

How did s/he hear about the introduction of smoke-free rules in Scottish prisons?

What was s/he told and by who? When? Were there any issues/challenges in respect of the information s/he was given about smoke-free prison rules?

Smoking abstinence/cessation in smoke-free prison

Overall, how easy or difficult is s/he finding it not to smoke? What kinds of things s/he does instead of smoking? How/in what way has the ease/difficulty of not smoking in prison changed over time? Why? **Has s/he used smoking abstinence/cessation support in the prison, since the smokefree rules were introduced?** How easy did s/he find it to access support? What worked well and less well about the support? How does s/he think the smoking abstinence/cessation support in prisons could be improved?

Compliance and enforcement of smoke-free prison rules

How well do PiC in this prison stick to no-smoking rule? How common is smoking in this prison? How likely it is that smoking will be detected by staff?

E-cigarettes in smoke-free prisons

What is it like to live in a prison environment in which others are using e-cigarettes?

What, if anything, has been good/bad about having e-cigarettes in smoke-free prison? **How common is it for PiC to use e-cigarettes in this prison? Has s/he used e-cigarettes while in smoke-free prison? IF YES: Why? What plans, if any, did s/he have initially in respect of using e-cigarettes in prison? Has s/he ended up using e-cigarettes in this way? How often does s/he use e-cigarettes? What products has s/he tried and what is his/her opinions of them? Has s/he considered reducing/stopping vaping in prison? IF YES: Why? What stage is s/he in the process? What support, if any, did s/he get to reduce/stop vaping and who from? What worked well and less about the support? What made it easier/more difficult to reduce/stop using e-cigarettes in prison? Does s/he intend to continue using e-cigarettes in the future?**

Smoking and vaping behaviour during work placement/home leave or after liberation

What plans, if any, does s/he have regarding smoking after s/he leaves prison (or during work placement/home leave)? How does s/he feel about the idea of not smoking after s/he leaves prison/during work placement/home leave? How easy or difficult does s/he think it will be to not to smoke after s/he leave prison/during work placement/home leave? **What, if anything, s/he thinks could be done to help people avoid returning to smoking after liberation/during work placement/home leave?**

Lessons learned and concluding remarks

What lessons do s/he think could be learned from Scotland in relation to how to have a smoke-free prison?

iv. TIPs Phase 3 Prison Staff Focus Groups (Publication 4)

Background

Work-role and responsibilities and grade; how long s/he has worked in this prison and for the prison service.

Smoking and vaping status outside of work

Does s/he smoke now or has s/he smoked in the past? IF YES: When did s/he start smoking? Has s/he stopped and when? Is it any easier/harder not to smoke at work since smoke free rules for PiC are now in place? Does s/he use e-cigarettes now or has s/he used e-cigarettes in the past? IF YES: when did s/he start vaping? Has s/he stopped and when? How do restrictions on staff (but not prisoner) vaping affect them/other staff who use e-cigarettes?

Overall experiences, benefits and challenges of working in a smoke-free prison

Overall, what is it like working in a smoke-free prison? What is good/bad about working in a smoke-free prison. Has the introduction of smoke-free rules been like s/he imagined? Explore views on positive/negative consequences of smokefree prison policy (e.g. 'trouble' in prisons; working conditions for staff/living conditions for PiC; physical and/or mental health and wellbeing of PiC, families and staff; smoking behaviour; impacts on

prison service/life in prison). **What things have influenced the level of success of smoke-free rules in this prison?** To what extent was preparation good in this prison for the smokefree policy? What helped/did not help and why?

Communication of smokefree prison rules

What does s/he think about the communication of smoke-free rules to staff in this prison?

How, if anything, do s/he think that communication of smoke-free rules in this prison could be improved?

Smoking abstinence/cessation in PiC in smokefree prisons

How easy or difficult are PiC finding it not to smoke? What kinds of things do people do instead of smoking? To what extent, if any, are people using the ban as an opportunity to quit smoking long term? **How does s/he think the smoking cessation/abstinence support in prison could be improved?**

Compliance and enforcement of smokefree prison rules

How well do PiC in this prison stick to the no-smoking rule? In what ways, if any, are smoke-free rules broken?

E-cigarettes in smokefree prisons

What is it like to work in an environment in which prisoners are using e-cigarettes?

What does s/he think about e-cigarettes being sold in smoke-free prison? What, if anything, has been good/bad about the availability of e-cigarettes in smoke-free prisons? How common is it for PiC to use e-cigarettes in this prison? **What are his/her views on e-cigarettes generally?**

Smoking and vaping behaviour during work placement/home leave or after liberation

How interested are PiC (who identify as smokers) in quitting smoking long-term?

What are the main things that might make it easier/harder for someone to remain smoking abstinent during work placement/home leave/after liberation? How could the support available to help people not to relapse to smoking post-release be improved?

Lessons learned

What lessons do s/he think could be learned from Scotland in relation to implementation of smokefree prison policies?

v. 'E-cigarettes in Prisons' Interviews with People in Custody (Publication 5)

Background

Age; when (month/year) s/he entered prison, this time (did s/he enter prison on their current sentence before or after 30th November 2018?); whether s/he is on remand or convicted; sentence length; whether this is the first time s/he has been in prison.

Smoking history [Cover briefly]

Have they ever smoked tobacco? IF YES, explore: when did s/he start smoking tobacco? Did s/he smoke daily? How many cigarettes/how much tobacco did s/he smoke per day? Was s/he a smoker when s/he came into prison? How does s/he feel about not being allowed tobacco in prison? How much, if at all, does s/he crave cigarettes now? How easy or difficult is not being allowed to smoke in prison? To what extent was s/he interested in

stopping smoking before coming into a smoke-free prison/before the introduction of smoke-free prison rules.

[Cover briefly] Was s/he in a Scottish prison in the year before the smoking ban was implemented? Clarify whether s/he was a smoker at that time? IF YES: did s/he try to reduce or stop smoking before the ban? What happened? Did s/he try using any cessation aids such as e-cigs/vapes? Did s/he succeed in reducing or stopping smoking prior to the ban and reasons for this.

Opinions on availability of e-cigarettes in prisons

What is his/her opinion of e-cigs being available for prisoners to buy on the canteen?

How common is it in this prison for people in custody to use e-cigs/vapes? How well do prisoners stick to the rules on vaping in this prison?

Experiences of using e-cigarettes

Has s/he ever tried an e-cig/vape? IF YES: did s/he use e-cig/vapes before coming to prison? What was his/her reasons for trying e-cigs/vapes? How often s/he was using e-cigs/vapes at that time? Was s/he dual using e-cigs/vapes and tobacco, or not? What was his/her overall opinions of e-cigs/vapes at that time?

Has s/he used e-cigs/vapes since living in a smoke-free prison? Is s/he still using e-cigs/vapes now? What was his/her initial reasons for trying e-cigs/vapes in prison? Did s/he consider or try any other strategies to manage without tobacco in prison? What plans, if any, does s/he have for using e-cigs/vapes in prisons? What e-cig/vape products has s/he tried in prison? Are e-cigs being used in conjunction with other nicotine products (patches, lozenges)? How often s/he uses e-cigs/vapes in prison? How many refills s/he uses per week? How much s/he spends on e-cigs per week? Are other prisoners/staff around when s/he uses e-cigs/vapes?

Explore satisfaction with e-cigs/vapes in prison. Explore opinions about addictiveness of e-cigs/vapes. Explore opinions and experiences about practical issues in respect of e-cigs/vapes (e.g. reliability, affordability, getting hold of devices and e-liquids from canteen)

Explore whether the way in which s/he uses e-cigs/vapes in prison has changed over time and the reasons for this?

Does s/he want/intend to use e-cigs/vapes long-term in prison? To what extent, if at all, does s/he feel confident s/he could reduce or stop vaping if s/he wanted to? Has s/he ever tried to reduce or stop using e-cigs/vapes in prison? Did s/he try to get any help or support to reduce or stop using e-cigs/vapes? What happened?

Does s/he think s/he will use e-cigs/vapes post-release? If s/he intends to use e-cigs/vapes after release, how does s/he think friends/family will react. Does s/he think s/he will smoke cigarettes (instead of vaping/alongside vaping) when they are liberated? Reasons for this.

Appendix 7. Thematic Frameworks

i. TIPs Phase 1 staff focus groups: thematic framework ('smokefree policies') (Publication 1)

- 1 Overall views on smokefree prison policy
- 2 Views on the principle of smokefree prison policy
- 3 Views on the feasibility of smokefree prison policy
- 4 Views on anticipated negative consequences of smokefree prison policy
- 5 Views on impacts on different 'prisoner' groups
- 6 Views on the balance of benefits and risks of smokefree prison policy
- 7 Views on total vs partial smokefree prison policy
- 8 Views on simultaneous vs phased introduction of smokefree prison policy
- 9 Views on timescales for introduction of smokefree prison policy
- 10 Views on preparing for introduction of smokefree prison policy
- 11 Views on current rules on smoking in prisons
- 12 Views on e-cigarettes (for people in custody)

ii. TIPs Phase 1 staff focus groups: thematic framework ('e-cigarettes') (Publication 2)

- 1 Knowledge about e-cigarettes
- 2 Sources of information about e-cigarettes
- 3 Perceived harm to users and bystanders
- 4 Perceived effectiveness as smoking cessation aid
- 5 Perceived potential security risks
- 6 Perceived safety of e-cigarettes
- 7 Perceived costs of e-cigarettes
- 8 Understandings e-cigarette regulation
- 9 Views on the role of e-cigarettes in the implementation of smokefree prison
- 10 Language (terminology)
- 11 Other

iii. TIPs Phase 2 work-package 4 people in custody interviews: thematic framework (Publication 3)

1. Background
 - 1.1 Background information on the prison
 - 1.2 Background information on the participant
 - 1.3 Other
2. Opinions on smoke-free policy
 - 2.1 Opinions on the introduction of smoke-free policy in Scottish prisons
 - 2.2. Awareness and opinions on the implementation of smoke-free policy in prisons in England and Wales
 - 2.3 Other
3. Views and experiences of smoking related issues leading up to implementation of smoke-free policy
 - 3.1 Experiences of living in a prison as a smoker or non-smoker
 - 3.2 Prisoner smoking culture and habits (including own smoking habits/history)
 - 3.3. Compliance and enforcement of prisoner smoking rules
 - 3.4 Staff smoking habits (while at work)
 - 3.5 Smoking cessation in prison

- 3.6 Understanding and use of e-cigs
- 3.7 Perceived changes in smoking related issues leading up to implementation of smoke-free policy
- 3.8 Other
- 4. Views and experiences of early preparations for implementation of smoke-free policy
 - 4.1. Awareness and understanding of smoke-free policy
 - 4.2 Local and national governance of smoke-free policy
 - 4.3 Planning for the implementation of smoke-free policy
 - 4.4 Other
- 5. Views on how to implement smoke-free policy
 - 5.1. Project management and leadership
 - 5.2 Resources and training
 - 5.3 Communication and engagement with prisoners and staff
 - 5.4 Smoking cessation support
 - 5.5. E-cigarettes
 - 5.6 Staff, peer and family support to quit smoking
 - 5.7 Activities to substitute for smoking or prevent relapse
 - 5.8. Health and wellbeing initiatives
 - 5.9 Different measures for different prisoner groups or prison categories
 - 5.10 Enforcement of smoke-free policy
 - 5.11 Other measures

iv. TIPs Phase 3 Staff focus groups: thematic framework (Publication 4)

- 1. Background
 - 1.1. Participant characteristics
 - 1.2. Background information about the prison
 - 1.3 Other
- 2. The Scottish prison smoking ban (from 30th November 2018)
 - 2.1 Smoking history and attitudes, interest in smoking abstinence or cessation (for PiC only)
 - 2.2. Levels of acceptance/support for the prison smoking ban
 - 2.3 Compliance, enforcement of the smoking ban in prison
 - 2.4 Successes/challenges in relation to the ongoing operation management of the ban
 - 2.5 Perspectives on implementation of the smoking ban in prisons in England and Wales
 - 2.6 Other
- 3. E-cigarettes in prison
 - 3.1 Levels of support for current rules on e-cigarette use in Scottish prisons
 - 3.2 Compliance/enforcement of rules on e-cigarette use in prisons
 - 3.3. Prevalence of e-cigarette use in prison and among different 'prisoner' groups
 - 3.4 Uptake and use of e-cigarettes in prisons
 - 3.5 Choice of e-cigarette products on sale in prison
 - 3.6. Purchasing and managing supplies of e-cigarette products in prison
 - 3.7. Potential risks of addiction to e-cigarettes and long-term use of e-cigarettes
 - 3.8 E-cigarette safety
 - 3.9 Misuse of e-cigarettes in prison
 - 3.10 Other
- 4. Factors supporting or hindering implementation of the prison smoking ban and lessons learned
 - 4.1 Perceptions of the ease or difficulty of the implementation of smoke-free policy
 - 4.2. Lead-in time, countdown, communication and engagement
 - 4.3 E-cigarettes

- 4.4 NHS smoking cessation/'nicotine management' services and partnership working between NHS and SPS
- 4.5 Distraction and alternative activities
- 4.6 Management of implementation of the ban at national or local level
- 4.7 Strategies in relation to the removal of tobacco from prisons
- 4.8 Factors related to frontline staff and people in custody
- 4.9 Wider trends in smoking vaping and health behaviours
- 4.10 Factors related to implementation of the smoking ban in the open prison
- 4.11 Other
- 5. Perceived (positive or negative) consequences of the prison smoking ban and availability of e-cigarettes in prisons
 - 5.1 Working environment in prison and health of staff and visitors
 - 5.2 Smoking or vaping behaviour of staff and visitors
 - 5.3 'Trouble in prisons'
 - 5.4 Living environment in prison/health and wellbeing of people in custody
 - 5.5 Financial benefits or problems for people in custody
 - 5.6 Contraband tobacco and lighters in prison
 - 5.7 Drug use or displacement use of substances
 - 5.8 Fires in prisons
 - 5.9 Other organisational impacts
 - 5.10 Use of nicotine and tobacco products after liberation from smokefree prison
 - 5.11 Recommendations/suggestions/areas for improvement in relation to the smoking ban or availability of e-cigarettes in prisons
 - 5.12 Other

v. TIPs Phase 3 People in custody interviews: thematic framework

See thematic framework above for 'TIPs Phase 3 staff focus groups' (under point 4 above).

vi. 'E-cigarettes in Prisons' Interviews with People in Custody (Publication 5)

A modified version of the thematic framework above (for 'TIPs Phase 3 staff focus groups') was used to support analysis of the 'E-cigarettes in Prisons' interviews with people in custody.