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Smoking and smoke-free policy in prisons in England

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ABSTRACT

Background

Awareness of the harmful effects of second-hand smoke (SHS) has led governments in the United Kingdom (UK) and many other countries to introduce smoke-free legislation in almost all enclosed work and public places. Her Majesty's (HM) Prison Service, which currently holds over 85,000 offenders among whom the prevalence of smoking is high, was granted one of few exemptions from the 2007 smoke-free legislation in England, which allowed prisoners to smoke in their cells. This continued smoking impacts not only on the health of the individual smoker but also, through SHS exposure, on other smokers and non-smokers who live or work in the prison. However there is limited research evidence on levels of SHS in prison; how the current Prison Service Instruction (PSI) 09/2007 relating to smoking restrictions in prisons in England operates in practice and protects staff members and prisoners from SHS; or how feasible, acceptable or successful the extension of smoke-free policies to all areas of the prison are likely to be in preventing further exposure.

Methods

This thesis employs both quantitative and qualitative methods in a pragmatic mixed-methods design to investigate smoking and smoke-free policy in prisons in England. Initially, the concentrations of airborne particulate matter <2.5 microns in diameter ($PM_{2.5}$) were measured, as a proxy measure for SHS, in four English prisons. Samples were taken on wing landings and in smoking and non-smoking cells; and by ambient monitoring as a measure of personal exposure of staff working in these settings. Staff members who participated in this air quality monitoring study were then followed up to complete a one-

to-one semi-structured qualitative interview exploring their views on smoking in prison and exposure to SHS, considering how the current PSI worked in practice, and the potential move to a smoke-free prison estate. A proposal to pilot test smoke-free policy in four prisons in England was announced shortly after, and in large part as a result of the findings of these first studies. A mixed methods evaluation of the new smoke-free policy was then conducted at all four sites, involving prisoner and staff questionnaires and focus groups, and air quality monitoring (sampling concentration of $PM_{2.5}$ on wing landings) three months before and three months after the policy implementation date. Questionnaires and focus groups pre-policy were used to establish current smoking prevalence, investigate smoking practices and identify perceived problems and concerns regarding the move towards a smoke-free policy. Post-policy these methods were used to explore the impact of the smoke-free policy, views on its implementation alongside consideration of how it could be improved in the future. Concentrations of $PM_{2.5}$ were used to determine whether going smoke-free reduced levels of SHS exposure.

Results

Initial air quality monitoring measured $PM_{2.5}$ concentrations from 48 static locations and personal monitoring of 22 staff members. Arithmetic mean $PM_{2.5}$ concentrations were significantly higher on landings where smoking was permitted in cells compared to completely non-smoking wings. Concentrations of $PM_{2.5}$ on landings where smoking was permitted in cells often exceeding the World Health Organisation (WHO) upper air quality guidance limit for a 24 hour period. During personal monitoring of staff members, some of the highest concentrations of $PM_{2.5}$ were recorded during duties such as locking or unlocking cells, handing out mail and cell searching. Qualitative interviews with prison officers who took part in air quality monitoring reinforced these air quality monitoring

findings, confirming the times of the day and duties undertaken where they felt most at risk from SHS. Prison officers outlined how the current PSI was often unworkable day-to-day, conceding that prisoners would often ignore the smoking restrictions in place.

In the evaluation of the first four pilot sites to go smoke-free in England, findings prior to the implementation reported 65% smoking prevalence amongst prisoners, and highlighted widespread concerns among staff members and prisoners that going smoke-free would lead to an increase in disorder, self-harm, drug use and trading of tobacco. After the introduction of the policy, prisoners reported an increase in disorder and drug use, but staff reports suggested that concerns were predominantly unfounded. Post-policy, 60% of smoking prisoners reported using some form of Nicotine Replacement Therapy (NRT) in an attempt to cut down or quit in advance of policy implementation, but many reported difficulty accessing cessation support, and found the electronic cigarettes purchased as a substitute for smoking unsatisfactory. Support for the future introduction of the smoke-free policy throughout the rest of the English prison estate was much higher among staff members (70%) than prisoners (23%). Only a quarter of former smoking prisoners stated that they would remain smoke-free once released or transferred to a smoking establishment. Prisoners and staff reported positive outcomes from the smoke-free policy, both reporting a cleaner and healthier environment to life and work. There was a 69% median and a 66% mean reduction in $PM_{2.5}$ concentrations three months after smoke-free policy was introduced, compared to the same samples taken three months pre-policy, and these reductions were highly statistically significant in all four prisons ($p<0.001$). Unintended consequences of the smoke-free policy included smoking alternative substances (such as the contents of NRT patches, tea leaves and lawn grass), the creation of a tobacco black market and related bullying and debt, and the smuggling of tobacco.

Conclusions

Smoking in prisons in England is a source of high SHS exposure for both staff and prisoners, and the current PSI allowing prisoners to smoke in their cells does not protect other prisoners or staff from SHS exposure. Introducing a comprehensive smoke-free policy in four prisons in England proved successful, achieving marked reductions in tobacco use, improved indoor air quality, and healthier living and working conditions. There are however lessons for wider implementation, particularly in relation to setting clear timelines, ensuring that prisoners can access cessation services in advance of policy implementation, consideration of electronic cigarette available, and other unintended factors. Where possible, these factors need to be addressed to safeguard the future successful implementation throughout the rest of the English prison estate.

OUTLINE OF THESIS CHAPTERS

This thesis consists of six Chapters. Chapter 1 summarises the general background of the research topic, including a description of the burden caused by tobacco with a focus on health inequalities and smoke-free legislation as an effective tobacco control policy. Tobacco use in prisons is discussed, along with evidence on SHS levels in prison and smoke-free prison polices. At the end of Chapter 1 the justification of the thesis, aims and objectives of the research are presented.

Chapter 2 presents a study of concentrations of SHS in four English prisons, measured by collecting $PM_{2.5}$ samples from wing landings, cells and personal monitoring of prison officers during part of a working shift.

Chapter 3 presents data on staff perceptions of SHS in prison and their thoughts on smoke-free prisons in the future, explored through qualitative interviews following the air quality sampling described in Chapter 2. The announcement that four early adopter prisons would go smoke-free in England from March 2016 was made after the completion of this work.

Chapters 4 and 5 provide an overarching evaluation of the implementation of smoke-free policy in these four early adopter prisons, with data collected three months before and three months after smoke-free implementation. The beginning of Chapter 4 provides an overview of how the smoke-free policy was implemented, including announcement of the smoke-free date, removal of tobacco, and smoking cessation service provision. Chapter 4 goes on to consider the results from questionnaires and focus group discussions carried out with prisoners and staff members pre- and post- policy; compliance to the smoke-free

policy, improved health and fears around the policy (outlined pre-policy) are examined. Chapter 5 compares SHS concentrations sampled on a number of wing landing locations pre- and policy smoke-free policy.

Chapter 6, the final chapter, summarises and discusses the research findings, their policy implications, and identifies directions for further research.

PUBLICATIONS, PRESENTATIONS AND AWARDS ARISING FROM THIS THESIS

JOURNAL PUBLICATIONS

Jayes LR, Ratschen E, Murray RL, Dymond-White S, Britton J. Second-hand smoke in four English prisons: an air quality monitoring study. BMC Public Health. 2016;16(1):119.

OTHER RELATED PUBLICATIONS

Jayes L, Ratschen E, Murray R, Dymond-White S, Britton J. Nottingham AQM Report: Second-hand smoke in four English prisons: an air quality monitoring study. Available from: https://www.gov.uk/government/publications/air-quality-reports. The University of Nottingham 2015.

CONFERENCE PRESENTATIONS

- Jayes LR, Ratschen E, Murray RL, Britton J. The introduction of smoke-free prisons in England: questionnaire and focus group data collected from four early adopter establishments prior to a comprehensive smoke-free policy. 17th Society for Research on Nicotine and Tobacco (SRNT) Europe, Prague, Czech Republic, 8th-10th September 2016 (Oral presentation).

- Jayes LR, Ratschen E, Murray RL, Britton J. Second-hand smoke in four English prisons: An air quality monitoring and qualitative interview study. UKCRC16, the Public Health Research Centres of Excellence Conference, 14th-15th July 2016, UEA, Norwich, UK. (Poster presentation).

AWARDS

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LIST OF ABBREVIATIONS

95% CI: 95% Confidence Interval

ASH: Action on Smoking and Health

CJS: Criminal Justice System

CO: Carbon monoxide

COPD: Chronic Obstructive Pulmonary Disease

CSU: Care and Separation Unit

DoH: Department of Health

FCTC: Framework Convention on Tobacco Control

HMP: Her Majesty's Prison

HMPPS: Her Majesty's Prison and Probation Service

HMYOI: Her Majesty's Young Offender Institution

IARC: International Agency for Research on Cancer

IDTS: Integrated Drug Treatment System

IEP: Incentive and Earned Privileges

IQR: Interquartile range

MI: Myocardial infarction

MOJ: Ministry of Justice

NCSCT: National Centre for Smoking Cessation and Training

NHS: National Health Service

NICE: National Institute for Health and Care Excellence

NOMS: National Offender Management Service

NPS: New Psychoactive Substance

NRC: National Research Committee

NRT: Nicotine Replacement Therapy

OBP: Offender Behaviour Programme

PCT: Primary Care Trust

PHE: Public Health England

$PM_{2.5}$: Particulate matter less than 2.5 μg/m³

PM_{10}: Particulate matter less than 10 μg/m³

POA: Prison Officers' Association

SD: Standard Deviation

SPOC: Single Point of Contact

SPS: Scottish Prison Service

SHS: Second-hand smoke

SIR: Security Information Report

μg/m³: Microns per metre squared

UK: United Kingdom

UKCTAS: UK Centre for Tobacco and Alcohol Studies

US: United States

VATP: Violence against the person

VP: Vulnerable Prisoner

WHO: World Health Organisation

1 INTRODUCTION

1.1 THE BURDEN OF SMOKING

Smoking cigarettes is a leading cause of premature death worldwide, tobacco use accounts for 12% of adult deaths globally (1). Cigarette smokers die 10 years younger than non-smokers with smoking being related to an increase in all-cause mortality, cancer mortality (especially lung cancer), and mortality from chronic obstructive pulmonary disease (COPD) and cardiovascular disease (2-4). It is well established that nicotine is the drug in tobacco that is predominantly responsible for the strength and course of addiction in tobacco smokers (5). However alongside nicotine, which is relatively harmless, tobacco smoke also contains poisons such as carbon monoxide (CO), ammonia, arsenic, mercury and formaldehyde, and a range of established carcinogens (5).

In the UK, 96,000 deaths were attributed to tobacco smoking in 2016 (6), and the cost of smoking to the National Health Service (NHS) in England in 2006 was estimated to be £2.7 billion; this cost does not account for the harms associated with SHS (7). In the UK population, 19% of adults smoke, with slightly more males (20%) than females (17%) smoking (8). Young adults are more likely to use tobacco, in 2015 23% of those aged 25 to 34 years in the UK smoked, prevalence being lower amongst those aged 65 and over (8.8% in the UK) (9). The 2011 General Lifestyle Survey found that 60% of smokers felt that it would be either very or fairly difficult to go without smoking for a whole day, however 63% reported wanting to stop smoking altogether (10).

SHS, also known as environmental tobacco smoke, is a mixture of the smoke given off by the burning end of tobacco products (side stream smoke) and the mainstream smoke exhaled by smokers. This smoke can be breathed in by a non-smoker and contains the same range of toxic substances as that inhaled by active smokers; exposure to cigarette smoke from SHS is equivalent to about 1% of that associated with active smoking (11). Because of this, SHS can cause a range of harmful health effects similar to active smoking, but at a lower levels; these include lung cancer, lower respiratory tract infections, cardiovascular disease and asthma exacerbation (11-13).

1.2 SMOKING AND HEALTH INEQUALITIES IN THE UK

Smoking prevalence in the UK population has been declining over recent decades (from 46% in 1974 to 19% in 2014 (9)). However smoking prevalence amongst marginalised or otherwise disadvantaged groups, such as the poor, unemployed, homeless, substance misusers, and mentally ill, remains high (14). The proportion of male smokers on the lowest income brackets is 36%-40%, double the proportion for those in the highest (15), and it is 29% in the unemployed population (16). Survey data suggest that around 46% of alcohol dependent and 69% of other drug-dependent adults smoke tobacco (17). An audit conducted in 2014 reported that 77% of homeless people in England smoke (18). Around 40% of those with a mental health condition smoke (19), research in this population suggests these smokers do not lack the motivation to quit but are more likely to be highly addicted and heavily dependent on tobacco and therefore need more help to quit (20). There are high levels of comorbidity within these disadvantaged groups in society. For example, homeless people have higher diagnosed mental illness (45% v. 25% in the general population) and are more likely to have recently taken illegal drugs (36% v. 5% in the general population) (18).

The difference in smoking rates between these disadvantaged groups and the general population has resulted in smoking being the single biggest cause of health inequality (21). An independent review exploring health inequalities in England in 2010 (22) stated that smoking-related death rates are two to three times higher in low-income compared to high-income social groups. A report by the National Cancer Intelligence Network in partnership with Cancer Research UK (23), which examined incidence and mortality rates for a range of cancers in England, concluded that the vast proportion of the excess deaths occur in cancers caused by smoking and there was a strong association between these cancers and levels of deprivation (23). Both of these reports stressed the importance of implementing comprehensive tobacco control polices to tackle the profound health inequalities currently experienced amongst disadvantaged groups (22, 23). Successful tobacco control strategies to date include taxation of tobacco products (24), restrictions on the marketing and promotion of cigarettes, including plain packaging laws (25), smoking cessation interventions (26), enforcement of both text and pictorial warning labels on tobacco products (27, 28) and smoke-free legislation in public and work places (29, 30).

1.3 SMOKE-FREE LEGISLATION

Making public places and work places smoke-free is an important component of tobacco control. Smoke-free legislation aims to protect the general public and workers from the harmful effects of SHS, especially protecting vulnerable groups such as children or people with respiratory conditions. Alongside this, policies can help to reduce smokers' cigarette consumption (31), offer the potential to influence smoking behaviours, and help to shift social norms around smoking (32, 33). The prevention of SHS exposure is a central component of the WHO Framework Convention on Tobacco Control (FCTC) (34). The WHO FCTC is a global public health treaty, established in 2003, and now endorsed by 180 parties.

It is a key driver in developing national tobacco control and reducing tobacco consumption and prevalence around the world. Article 8 of the WHO FCTC encourages countries to 'protect citizens from exposure to tobacco smoke in the workplaces, public transport and indoor public places'. Ireland was the first country to take on this guidance and in 2004 implemented a complete smoking ban in workplaces and public places. Many countries throughout the world have since implemented similar legislation, or else have heavily restricted where tobacco can be used (29).

1.3.1 UK smoke-free legislation

Within the UK, Scotland implemented smoke-free legislation in March 2006, followed by Wales and Northern Ireland in April 2007 and finally England in July 2007. The Crown Dependencies of Guernsey and Jersey became smoke-free in 2006 and 2007 respectively, and the Isle of Man in March 2008. The smoke-free legislation in England is contained in the Health Act 2006 (35) and the principles of this legislation are the same throughout the rest of the UK: making all public places and work places that are fully or substantially enclosed (a premises with a roof or ceiling and permanent openings in walls which cannot be opened or shut, these constitutes less than 50% of the total wall area) smoke-free, along with all forms of public transport and any work vehicle (if used by more than one person at a time). It is also the manager/owner's responsibility to clearly display appropriate no-smoking signage in all smoke-free premises and vehicles. In England, local councils are responsible for enforcing smoke-free legislation, and fixed penalties and court prosecutions can be actioned against managers or owners if they fail to display non-smoking signage and prevent someone smoking in a public place, work place or vehicle. Compliance with the English smoke-free legislation among the general public and business owners was reportedly high in a report published by the Department of Health (DoH) one

year after the legislation was introduced; 98% of all premises and vehicles inspected between July 2007 and March 2008 were smoke-free (36).

1.3.2 The evidence on smoke-free legislation: reduced second-hand smoke and improved health

A 2010 Cochrane Review on the effectiveness of smoke-free legislation reported that such polices are successful in reducing SHS exposure in a range of settings including workplaces, restaurants, pubs, and other public places (37). Hospitality workers experienced the greatest reduction in SHS after the smoke-free legislation. A global review of the effectiveness of smoke-free polices conducted by the International Agency for Research on Cancer (IARC), a specialised cancer agency of the WHO (29), also reported reductions in SHS with the introduction of smoke-free legislation. The IARC reported that smoke-free workplaces reduced insurance, cleaning, maintenance and potential litigation costs.

The reviews outlined above (29, 37), assessing international literature on smoke-free legislation, also report a positive impact on cardiovascular health. There was a significant drop in hospital admissions for myocardial infarction (MI) following smoke-free legislation, and this has led to cost-savings by health services (37). Research conducted in England examining emergency hospital admissions 15 months pre- and post- smoke-free legislation observed a statistically significant reduction in the number of admissions for MI since the implementation of smoke-free legislation (38). This study suggests that exposure to SHS increases both the long and short term risk of heart attacks. Similar work in Scotland, looking at data collected 10 months pre- and post- legislation, found a 17% reduction in the number of hospital admissions for acute coronary syndrome after smoke-free legislation came in (39). Studies have also shown a marked reduction in admissions for childhood

asthma as a result of UK smoke-free legislation (40, 41). Qualitative interviews and observational studies carried out in England pre- and post- legislation suggest smoke-free policies can also reduce individual tobacco consumption and influence smoking behaviours (12), and attitudes to smoking (32, 33). In Scotland, there was an increase in sales of over the counter NRT in the months leading up to and shortly after the legislation, it then returned to the underlying trend (42). The authors of this study suggest this increase in sales may reflect an increase in quitting behaviour in preparation for the smoke-free legislation.

1.3.3 Exemptions to smoke-free legislation in England

It is clear that smoke-free legislation protects workers and the general public from exposure to the harmful effects of SHS (29, 37) and this primary aim of the legislation has been largely achieved in England since 2007 (30, 36). There were however a few exemptions to the 2007 English smoke-free legislation, which included private dwellings and vehicles, designated rooms within hotels, hospices, hostels, care homes, mental health units, offshore installations (such as oil rigs) and prisons. Performing artists in England are also allowed to smoke if doing so is justified by the artistic integrity of the performance. Since 2007, further legislation passed in England alongside local voluntary agreements has led to even more spaces (indoor and out) becoming smoke-free.

1.3.3.1 Mental Health Services

Mental health services in England were given an additional year, to July 2008, in which to prepare to comply with the smoke-free legislation (35). A survey conducted in early 2007 found that the majority of English mental health trusts had already introduced smoke-free polices indoors, but that enforcement of this legislation was perceived as challenging (43).

Many English trusts attempted to extend the ban to outdoor premises however practices such as regularly facilitated “smoking breaks” or exemptions (such as courtyards) to allow smoking in the grounds became the norm (44). In 2013, National Institute for Health and Care Excellence (NICE) Public Health guidelines (PH48) on smoking in secondary care services recommended that all mental health units make their buildings and grounds completely smoke-free, without exception (45). One study suggests, the successful implementation of NICE guidance PH48 is likely to depend on the consistent collection of suitable smoking-related information, and the provision of training and resources to enable staff to support smokers adequately and to promote change (46). Local mental health trusts are now beginning to implement comprehensive smoke-free sites throughout England (47, 48). Two reviews, examining international literature on smoking bans in mental health settings, indicate that implementation of a smoke-free policy in mental health settings is attainable and has potentially beneficial effects (49, 50). These reviews also report on how concerns raised pre-implementation (for example, an increase in aggression), were generally not observed once the policy was introduced.

1.3.3.2 Hospitals

Along with guidance relating to mental health settings, NICE PH48 also recommends that all NHS hospitals and clinics should become completely smoke-free (45), with the removal of smoking shelters and prohibition of tobacco use by all staff, patients, and visitors on hospital grounds. Smoking in hospitals grounds is already banned in Northern Ireland and Scotland. An audit conducted in May 2016 found that only a small minority of NHS hospitals in England completely enforced smoke-free grounds (51). More recently, a number of NHS trusts have decided to go smoke-free locally, falling in line with NICE guidance (52, 53).

1.3.3.3 Vehicles

In order to protect children from high levels of SHS exposure whilst in cars (54), in 2015 England and Wales made it illegal to smoke in a vehicle with anyone under the age of 18 years (55), with both driver and smoker being fined £50. Similar laws banning smoking in cars carrying children have been introduced a number of other countries, to include Canada, US, Australia, South Africa and Bahrain (56).

1.3.3.4 Other smoke-free spaces

Smoke-free initiatives also extend to open air spaces and include voluntary bans on smoking in parks, on beaches and outside of school gates (57, 58).

1.4 HM PRISON SERVICE IN ENGLAND AND WALES

1.4.1 An overview of HM Prison Service

Within England and Wales, Her Majesty's Prison and Probation Service (HMPPS) is the agency made up of HM Prison Service and the National Probation Service (59). HMPSS replaced what was formerly known as the National Offender Management Service (NOMS) on the 1st April 2017 (60). The purpose of HM Prison Service is to keep those sentenced to prison in custody and help them lead law-abiding and useful lives, both while they are in prison and after they are released (61). There are currently 121 prisons in England and Wales, of which 107 are public sector prisons run by HM Prison Service, and 14 are contracted out to privately run companies, such as Sodexo Justice Services, Serco, and G4S Justice Services (See Appendix 7.1, Prison map of England and Wales 2017). England and Wales has 146 prisoners per 100,000 head of population, higher than Scotland and

Northern Ireland and ranked the 11th highest in Europe (62). The prison population in England and Wales has been relatively stable for the past five years (62) and is predicted to increase by 3% by 2021 (63). The average cost of keeping a male offender incarcerated (in a local prison) for one year in 2016 was thirty thousand pounds (64). The most recent weekly bulletin at the time of writing (April 2017) reported the prison population as 85,517, of which 3,973 were female offenders (65). Adults account for around 94% of prisoners, 18-20 year olds 5%, and 15-17 year olds 0.6% (62). Of the prison estate, 11 prisons solely hold female offenders (with the exception of Her Majesty's Young Offender Institution (HMYOI) Peterborough which holds both male and females separately on one site) and four prisons hold young people. Eight prisons hold male young offenders (those under the age of 21 years) only. As of December 2016, public sector prisons in England and Wales had over thirty thousand staff members working within their establishments, of which nearly eighteen thousand were full-time prison officers (who typically supervise prisoners day-to-day) (66).

1.4.2 Categorisation of prisoners and types of establishments

Male adult prisoners (those aged 21 or over) are given a security categorisation soon after they enter prison. These categories are based on the type of crime committed, the length of sentence, the likelihood of escape or absconding, and the danger to the public if they did escape (67). The four categories are:

- *Category A:* Prisoners whose escape would be highly dangerous to the public or the police or the security of the state, and for whom the aim must be to make escape impossible.
- *Category B*: Prisoners for whom the very highest conditions of security are not necessary but for whom escape must be made very difficult.

- *Category C*: Prisoners who cannot be trusted in open conditions but who do not have the resources and will to make a determined escape attempt.
- *Category D*: Prisoners who present a low risk; can reasonably be trusted in open conditions and for whom open conditions are appropriate.

Occupancy permitting, prisoners are held in a prison which corresponds to their security category. Category A, B and C prisons are called 'closed' prisons (the main feature being a secured perimeter), whilst category D prisons are called 'open' prisons. Generally, local prisons (all are closed prisons) serve the courts and receive remand and post-convicted prisoners prior to their allocation to a training prison (open or closed), which hold only sentenced prisoners. Training prisons offer employment (for example, in workshops and gardens), education and Offending Behaviour Programmes (OBP). There are also a number of prisons which only hold those convicted of sexual offences (for example, Her Majesty's Prison (HMP) Whatton) and a few which have integrated populations, where the majority (normally over 80%) of those held at the prison have been convicted for a sexual offence (for example, HMP Dartmoor). Otherwise, those in prison for a sexual offence tend to be segregated onto wings which hold the Vulnerable Prisoner (VP) population (this can also include those who are at risk of being bullied or in debt to another prisoner) and their regime/movement times are different to the rest of the main prisoner population to prevent any contact. Due to the small female prisoner population, female establishments are categorised into either 'closed' or 'open'. All female closed prisons can hold category A, B, and C prisoners and young offenders, a few also have specialist units for young people (15-17 years).

1.4.3 Characteristics of the prisoner population

The House of Commons explored prison populations throughout the UK in 2016 using data from the UK Ministry of Justice (MOJ); this paragraph outlines the results from this briefing paper focusing on the English and Welsh adult prison population (62). Offenders aged between 21-29 years accounted for 32% of the prisoner population, and 30-39 years olds accounted for around 30%. Nearly three quarters of prisoners were from a white ethic background. Of the 87% of prisoners that had been convicted and sentenced (the rest were awaiting trial or convicted and awaiting sentencing) 41% were serving a sentence of 4 years or more, around a quarter were serving sentences between 1-4 years, and 9% had a sentence of less than one year. Nearly a third of those incarcerated were sentenced for Violence against the Person (VATP) offences, with sexual, theft, and drug offences each accounting for around 15% of these VATP crimes. The rate of re-offending after release has remained fairly stable over the last decade, it was around 25% for the period between April 2014 and March 2015 (68).

People in prison often come from marginalised and disadvantaged groups, and this population experiences disproportionately high levels of infectious diseases (including HIV/AIDS and tuberculosis), long term conditions (including asthma and heart disease), low education attainment, poor mental health and learning disabilities, self-harm, and substance misuse (drug, alcohol and tobacco related) (69). Of those entering prisons in England and Wales, 46% have literacy skills no higher than those broadly expected of an 11 year old child (70). A quarter of women and 15% of men in prison report symptoms indicative of psychosis, and over half of offenders took an illicit drug up to four weeks before imprisonment (71, 72). Some form of physical disability affects 11% of the prisoner population (73).

Poor offender health and disengagement from health services before entering prison (with prisoners often coming from under-served communities), leads to marked health inequalities amongst this group (74). A report examining natural causes of death in the prisoner population between 2007 - 2010 carried out by the Prison and Probation Service Ombudsman (an independent body appointed by Secretary of State for Justice to deal with prisoner complaints) found the average age of death amongst this group was 56 years (75). Prison can provide a prime opportunity to address health inequalities amongst this hard-to-reach group, by engaging them with health services and specific health promotion, treatment and prevention interventions (69, 74).

1.4.4 Prison healthcare services

Historically, prison healthcare had been provided by HM Prison Service, however from 2006 the responsibility moved to Primary Care Trusts (PCTs). Since April 2013, NHS England took charge of commissioning all prison (public and private) health services (with the exception of emergency care, ambulance services and out-of-hours services) in England (76). Their aim is to reduce the health inequalities experienced by prisoners, lower the number of people who are detained as a result of untreated health problems and hence support reductions in offending, and ensure continuity of care after release (77). A National Partnership Agreement now exists between NHS England, NOMS, and Public Health England (PHE) for the co-commissioning and delivery of healthcare services in prisons in England (78). This new agreement places emphasis on the importance of promoting healthier lifestyles for prisoners and the provision of preventative services. In Wales, Local Health Boards commission healthcare services in public sector prisons. NICE guidelines 'Physical health of people in prison' (NG57), states that health services in prison should be provided to the same standard, quality and specification as for patients in the

community (79). However as PHE acknowledge in their annual review of health services within the Criminal Justice System (CJS), 74% of prisoners are released within 12 months from the start of their sentence and this therefore only offers a small window of time to improve health; suggesting that pathways of care in and out of the prison settings need to be well established and linked up (69).

1.4.5 Current prison climate and prison reform

In recent years HM Prison Service has come under increasing pressure with a significant rise in suicide, assaults, and serious disturbances (80-82). It has been suggested that governmental cost cutting and the resulting reduced staff numbers and resources, alongside the increased use of new illicit drugs (such as, New Psychoactive Substances (NPS)) in the prison estate (82-84) have been major contributors to these mounting concerns over safety and security in recent years.

Reported suicides and self-harm incidents increased to record highs in 2016 compared to previous years (a 32% and 25% increase respectively, compared to the same period in 2015) (85). Data from the MOJ also demonstrates an increase in assaults in 2016, up by 31% compared to the previous year, with prisoner-on-prisoner assaults up 28%, and assaults on staff up 40% (85). There were also a number of serious disturbances reported in the national press throughout 2016 (86-89). In a typical week in 2016, there were almost 600 incidents of self-harm, at least one suicide, and 350 assaults (including 90 on staff) within HM Prison Service in England and Wales (69). The Prison Officers' Association (POA, the trade union representing prison officers throughout the UK) when commenting on the high profile disturbance at HMP Birmingham in the latter part of 2016, stated 'this is another stark warning to the MOJ that the [HM Prison] Service is in crisis' (90).

NOMS have reduced their budget by nearly a quarter since 2010–11 (91). Between 2010–11 and 2014–15 it delivered cumulative savings of almost £900m and has a savings target of a further £91m for 2015–16 (91-93). Budget cuts, alongside an early voluntary redundancy scheme (introduced in 2010) and poor staff retention (a quarter of those leaving HM Prison service in 2014 resigned) have seen staff numbers fall (94). The overall reduction of staff in NOMS from 31 March 2010 to 30 September 2016 was 10,623 (a 23.7% decrease in staffing) (66). The impact of staff shortages was outlined in a report by the Howard League for Penal Reform in 2017; staff spoke about how prison officer shortages meant that prisoners spent much more time in "lock down" in their cells, how patients frequently missed their healthcare appointments because there was nobody to escort them to the healthcare department, and there was less time to "observe", "interact" and build relationships with prisoners, and therefore less opportunity to pick up on subtle changes in mood (95).

Prisoners' use of NPS, particularly synthetic cannabis (often referred to in prison as 'Spice' or 'Mamba') has grown significantly over recent years (71). Reported incidents of NPS (to include, Mephedrone, BZP, and Spice) being seized from prisoners went from 16 cases in 2010 to 436 cases in 2014 (96). The Prisons and Probation Ombudsman reported that 58 deaths in prison between June 2013 and January 2016 were known to be linked, or strongly suspected to be linked, to NPS use (97). The Scottish Prison Service (SPS) survey in 2015 found that one in ten prisoners stated they had used NPS, with synthetic cannabis being most commonly used (98). The 2015 HM Inspectorate of Prisons Thematic Report on changing patterns of substance misuse in adult prisons, said that the effects of NPS can be unpredictable and extreme, with use being linked to attacks on other prisoners and staff, self-inflicted deaths, serious illness and life-changing self-harm (71). In this report, the

former Chief Inspector of Prisons, said that NPS is now “the most serious threat to the safety and security of jails” (71).

In light of increasing concerns over prison safety and levels of violence (81, 82, 94), a new prison reform programme has been set out in a 2016 Government White Paper called ‘Prison Safety and Reform’ (99). The White Paper outlines the Government’s plans for reforms, to be delivered through a mix of operational changes in prisons underpinned by legislative changes where required, these included: new prison performance measures, giving Governors more powers and more responsibility, increasing the number of prison officers by 2,500 by 2018, investing 1.3 billion to build new prison places, and introducing legislation to simplify testing for NPS (99). In February 2017, Justice Secretary Elizabeth Truss announced that the newly named, HMPPS will be responsible for rolling out the changes outlined in the Government White Paper, adding that an additional 100 million has been assigned to recruit prison officers (59).

1.5 TOBACCO AND PRISONS

This section reviews the literature on prisoner smoking prevalence and behaviours, providing UK specific examples of prison smoking cessation initiatives and current cessation practices in establishments in England and Wales. The health impact from first- and second-hand smoke in prison is also discussed alongside examples of smoking restrictions adopted in prisons worldwide (either partial restrictions or completely smoke-free). Data in this section was drawn from a number of literature and systematic reviews already conducted in the subject area between years 2008 -2016 (100-108); all studies included in these reviews were identified and the reference lists of these studies were

searched and checked. A range of websites were also searched for literature, including but not restricted to: NOMS, HM Chief Inspectors of Prisons, Howard League for Penal Reform, Cochrane Collaboration, Offender Health Research Network, NICE, POA, and Action on Smoking and Health (ASH). All studies and opinion pieces identified in this search were restricted to English language only.

It is worth noting that a range of evidence has been drawn upon to discuss current issues around smoking in prisons. Ordinarily the focus would be on published empirical literature conducted in this subject area, however due to limited evidence (especially on worldwide smoke-free polices) opinion pieces, media reports and prison inspections (often conducted by independent or non-MOJ agencies, for examples, by Her Majesties Chief Inspectorate of Prisons) are also outlined. Although a critical approach should be applied to all research evidence (including work published in scientific journals), extra caution should be applied to these other forms of evidence discussed throughout this Chapter as they are likely to be bias towards their particular viewpoint (for example, Her Majesties Chief Inspectorate of Prisons may have a political agenda in their reports). Examples of potential bias in the literature will be highlighted throughout this Chapter.

1.5.1 Smoking prevalence amongst prisoners and prison staff members

As discussed earlier in the Chapter, smoking amongst the most disadvantaged in society remains high. Unsurprisingly therefore, when we consider that prisoners often come from one or more often overlapping disadvantaged groups, that the smoking prevalence amongst those incarcerated in prisons in England and Wales is exceptionally high. Alongside this, young adults have the highest smoking rates in the UK population (23%

amongst those aged 25-34 years (9)), a group that currently dominates the offender population in England and Wales (62).

In 1997 the Office of National Statistics carried out a large scale survey of psychiatric morbidity amongst prisoners in the 131 prison in England and Wales to establish baseline information about the prevalence of psychiatric problems, examine the use of mental health services within prisons and to explore lifestyle factors which may be associated with mental health disorders (109). The survey included questions on smoking behaviours and reported prevalence amongst male remand (85%), male sentenced (78%), female remand (83%) and female sentenced (81%) prisoners. The report also noted high rates of heavy smoking, defined as smoking 20 or more hand rolled cigarettes per day, amongst this population. Work by the DoH (2003) piloting smoking cessation services for prisoners, reported smoking prevalence of 78% and 88% in two of their pilot sites (110). Findings from a prisoner questionnaire survey at HMP Cardiff (male remand prison) in 2003 found 84% smoked tobacco (111). A 2007 study of oral health in male remand prisoners at HMP Brixton found 78% of the population interviewed smoked tobacco with prisoners smoking, on average, nine hand rolled cigarettes per day (112). A questionnaire study examining health related behaviours amongst 505 female prisoners in England found an 85% smoking prevalence among a mix of remand and convicted prisoners, and that on average the women smoked 20 grams of loose tobacco a week, which was estimated to be equivalent to 20 cigarettes per day (113). An unpublished study by PHE (outlined in another PHE report, 'Reducing smoking in prison') reported prevalence in six prisons across the South-East of England of between 62% - 81% in 2014 (106). A 2016 article found 85% smoking prevalence amongst prisoners surveyed on drug recovery wings in six prisons in England and Wales (114). Finally, the latest figures from the 2015 SPS survey recorded 72% prevalence (this includes males and female who are both remand and convicted). Data

collected from the 15 prisons in the SPS survey suggest there had been a slight reduction in prisoner smoking prevalence in recent years: from 76% in 2009, 76% in 2011, 74% in 2013 and 72% in 2015 (98, 115-117). Reviews of international literature have observed similar prisoner smoking prevalence to the UK (countries include Greece, France, Lithuania, Switzerland, US and Australia) (101, 105, 118). Long smoking histories and high levels of dependence have also been identified in international studies (119-124). One study in England found the mean age at which women in prison started smoking was 14.4 years (113).

Collectively, UK studies on prisoner smoking prevalence have reported rates around 80% (studies outlined above report prevalence figures ranging from 62%-88%); with female offenders and those who are on remand (compared to those convicted) having slightly higher rates of smoking. As previously mentioned in this Chapter, incarcerated women (compared to men) have higher rates of mental illness (72), as smoking rates are higher amongst those with a mental illness (19) this may, in part, explain the increased smoking prevalence reported in this group. Given that the smoking prevalence amongst prisoners in the UK is over four times the national average of 19% (8), it represents a significant cause of health inequality in this population.

Little is known about smoking amongst prison staff in the UK, though a study in one Scottish prison showed a prevalence of 75% amongst staff members (125). Two further studies, one conducted in Germany, the other in the US, observed smoking prevalence amongst prison staff as similar or slightly higher than, their national averages (126, 127).

1.5.2 Prisoner smoking behaviour

Reviews of the prison smoking literature have widely reported the role of tobacco as an integral part of the culture and social norms within the prison estate (14, 101, 106-108, 118). Tobacco has various functions within prison: for instance, it is used as a way of coping with boredom and stress, can foster a sense of group membership amongst its users, as a vehicle for illegal drug use, a source of pleasure, and has a monetary value in an environment without currency (14, 110, 128).

Prior to piloting a smoking cessation programme in two English prisons, work by the DoH examined the role of smoking in the lives of prisoners. They found tobacco offered a relief from boredom, respite from stressors, and provided prisoners with a sense of being part of a group. Prisoners also spoke about tobacco being expensive (in relation to their weekly prison wage) and that it gave them a potential vehicle to take drugs, for example cannabis (110). Work by Condon and colleagues in an English prison also identified smoking as a way of dealing with prison life (129).

The impact of imprisonment on smoking behaviours has been explored. Amongst English prisoners, Plugge and colleagues found a significant reduction in the amount of loose tobacco women ordered from the prison canteen service after one month of imprisonment (113). Amongst male sentenced prisoners surveyed in England and Wales, about a fifth reported no change in their smoking behaviour since coming into prison (compared to in their use in the community), while approximately half of the remaining group reported smoking more and the other half reported smoking less than before prison (they also recorded similar figures amongst female prisoners) (109). Looking internationally, an Australian study found that 7% of prisoners had started smoking in prison and 41% of

smokers reported smoking more in prison than when they were in the community (122). Further work in Australia examining the 2012 National Prisoner Health Data found that 5% of non-smokers on entry to prison reported that they started smoking whilst in prison and of the self-reported smokers, 42% reported smoking more at the end of their sentence compared to at the start (130). Amongst imprisoned men in Poland, the majority of smokers (75%) reported a stronger need to smoke while incarcerated, this was enhanced by a number of specific "prison factors" such as, missing family and friends, lack of freedom, boredom and anxiety (120). Although the findings outlined in the studies above are mixed, they may offer some explanation as to why smoking prevalence appear to be higher amongst those on remand (compared to sentenced, outlined earlier in this Chapter); for example, stressors related to entry into prison or awaiting sentencing alongside other prison related factors, such as missing family, lack of freedom and boredom may lead to increased or initiation of tobacco use.

The desire to quit amongst prisoners in the UK has previously been reported, ranging from 41% to 79% (prisons in the north-west of England 41% (131), SPS survey 56% (98), and at HMP Cardiff 79% (111)). Similar levels have been recorded in other countries (Australia 58% (122), US 65% and 70% (132, 133)), with 75% of prisoners in Poland reporting a quit attempt in the last year (either in or outside of prison) (120). Qualitative work exploring cessation services in England revealed that offenders often want to achieve something in prison, with stopping smoking being viewed as a great personal achievement (131, 134). Prisoners have also described prison as an opportunity to access smoking cessation services and NRT (129).

1.5.3 Smoking cessation in prisons

Work assessing the effectiveness of smoking cessation interventions within prisons in England has been led by MacAskill and colleagues. In 2004/05 the team evaluated NRT-based smoking cessation initiatives (£500,000 of funding had been ring-fenced for prison NRT by the DoH) across 16 prisons in the north-west of England to inform policy and implementation of best practice across the whole prison estate (131, 134). Different approaches to behavioural cessation sessions were used throughout 15 of the prisons involved (nine offered group support and one-to- one sessions, three offered only group support and three offered only one-to-one sessions), all however offered NRT (usually a 24-hour patch dispensed patch-for-patch, with prisoners returning used patches before receiving new ones, essential to minimise 'trading' in the prison). Quit rates provided at four weeks were 41% (validated by CO monitoring), which the author suggests were similar to the rates achieved in the community at the time. There were inconsistent quit rates recorded within each of the different approaches to behavioural cessation support and concluded that it was not possible to suggest which cessation approach worked best. They did however state that personal commitment and enthusiasm amongst staff delivering the services, effective healthcare partnerships (with the PCTs and prison) and having a ring-fenced NRT budget were valuable in the initiative's success. Work by MacAskill and colleagues continued with a study which utilised a social marketing approach to bring about smoking behaviour change and de-normalise smoking behaviours in prison, this achieved high quit rates at four weeks (averaging 66%) in four prisons in England (135). They have also trialled appointing a regional CJS Tobacco Control Co-ordinator working across police custody, prisons and probation services to enhance cessation delivery. This appointment led to an increase in smoking cessation services offered in prisons, however they found cessation initiatives were more difficult to implement within the probation

service and impossible in police custody (136). It is important to note that all participants recruited into these prison smoking cessation initiatives had an initial desire to quit smoking.

A systematic review found ten studies worldwide which examined the effectiveness of prisoner smoking cessation programmes or interventions (103) (one being the trial by MacAskill (135)). Three studies included both male and female offenders, six were conducted only with male offenders and one in a female population. Participants in all studies apart from one had a desire to quit and follow-ups occurred in prison at a minimum of four weeks and a maximum of 12 months. They found cessation programmes, including free NRT and/or behavioural counselling can significantly increase the likelihood of quitting in prison (where tobacco is still available to purchase) and increased abstinence post-release.

MacDonald et al identified a number of barriers to the success of smoking cessation within a prison settings (118). These included: offenders high levels of other addictions or interpersonal difficulties, the use of smoking as a coping mechanism amongst prisoners, lack of family support in quit attempts, the movement of offenders through transfer or release, staff issues (to include negative staff attitudes towards smoking cessation/staff smoking status/lack of staff to run or escort prisoners to cessation groups), negative attitudes towards quitting from fellow prisoners, long waiting lists for cessation services, the misuse of NRT by prisoners (for example, as a currency), and suitability of support materials (information on leaflets/posters to deal with low literacy levels) for prisoners. Consideration of these would be useful to inform the development of smoking cessation initiatives within prisons in the future.

As previously outlined, from 2006 the responsibility for prison healthcare moved to PCTs and in 2013 NHS England took charge of commissioning services. NICE guidelines (79) (published at the end of 2016) recommend that smoking history be discussed during a prisoners second-stage prison health assessment (this assessment takes place within seven days of the prisoners reception to prison). At this assessment, NICE guidelines recommend that the healthcare professional offers information about the risks of smoking and on the types of support available to stop smoking as part of the prisons cessation service (NRT and behavioural support). Questions to ascertain smoking status are not outlined in the first-stage health assessment at reception to prison (conducted before prisoners reach their designated cell) even though NICE state that this assessment is an opportunity to identify any issues that may affect a prisoners immediate health and as an opportunity to prioritise health needs to be addressed before the second-stage assessment (questions covered in the first assessment include, physical health, alcohol use, substance misuse, mental health, self-harm and suicide risk). Police cells and prison escort services have been smoke-free since 2007, which means that smoking prisoners are typically in a state of nicotine withdrawal (their last opportunity to smoke being prior to arrest) by the time they reach prison reception. Anecdotally, prison reception staff will ascertain a prisoners smoking status in order to issue them with a 'first night pack' either for a smoker (to include lighter and loose tobacco) or for a non-smoker (to include tea/coffee and confectionary) before they go to their allocated cell.

Typically, current cessation services for prisoners provided by NHS England consist of a combination of NRT (patch, lozenges, inhalator, oral strip, either alone or dual use) alongside group or one-to-one behavioural support by healthcare staff (137). Bupropion (trade name Zyban) and varenicline (trade name Champix) are also available.

1.5.4 The health impact of smoking in prison

Smoking in prison impacts on the health of the individual smoker, and SHS effects other smokers and non-smokers who live and work in the prison. The negative health effects of smoking tobacco and breathing in SHS have been outlined at the start of this chapter (3, 4, 11, 13). Prisons are however a unique setting, exposure to both smokers and non-smokers is likely to be more intense in prison (compared to non-institutional settings) due to the confined spaces (single cell floor space roughly 8m² in an English prison) and limited ventilation (due to security concerns 'closed' prisons tend to have vented, opposed to fully opening, windows) in which people live and work. Offenders (and occasionally prison officers) also have restricted opportunities for outside air to avoid any SHS exposure.

A study exploring natural deaths in male prisoners over 60 years of age in England and Wales reported diseases of the circulatory system (such as, coronary heart disease and cerebrovascular disease) and respiratory illnesses as the most common cause of death (138). Although the authors do not make the connection, it is clear that smoking increases the risk of all of these illnesses (3, 4). An Australian study reported mortality rates from smoking-related cancers for people who had been in prison as double that of the general population (139). Although these studies offer an insight into natural causes of death amongst prisoners, a direct link between prisoner's health and tobacco use in prison is outlined in a US study looking at the impact of their comprehensive smoke-free policy (no smoking prisoners or staff in or outside of prison buildings) (140). This study suggests that smoke-free prison policies are associated with reductions in smoking-related mortality among people in prisons (particularly cardiovascular and pulmonary deaths) and led to a reduction in cancer mortality in areas where smoke-free polices had been in place for over

nine years. It concludes that these findings are likely to be related to the reduction in smoking and exposure to SHS among people in prisons.

There is limited research evidence on the levels of SHS in prison, however there is often an assumpton, due to high smoking prevalence amongst offenders, that it is high (101, 106). In Ireland, researchers examining SHS in areas exempt from their national smoke-free legislation observed in light to heavy smokers (141). Two studies in the US have recorded high levels of SHS (by sampling nicotine concentrations or airborne particulate matter <2.5 microns in diameter ($PM_{2.5}$)) within prison buildings (to include prison landings) prior to a comprehensive smoke-free policy (142, 143). However, researchers in other countries have expressed concerns over the safety of leaving expensive air quality monitoring equipment in prisoner living location (141, 144), leading one study to re-position air quality equipment in the 'staff base' slightly away from prisoner living locations. This aside, research evidence summarised by the WHO and others suggests that there is no safe level of exposure to SHS (13, 145), therefore non-smoking prisoners, prison staff and visitors are all at risk from SHS exposure in prison.

1.5.5 Prison smoking polices worldwide

1.5.5.1 Partial smoking restrictions versus smoke-free policies

Due to concerns over the high level of SHS exposure for those who live and work in prison and in turn, legal challenges from non-smokers regarding unhealthy living or working conditions, penal legislative bodies around the world have brought in rules to limit or completely ban smoking by prisoners and staff members. Research from other countries suggests smoke-free policies (no smoking allowed within the perimeter wall, inside and outside of buildings by prisoners and staff) tend to be more successful than partial smoking

restrictions (smoking allowed by prisoners and sometimes staff in one or two areas within the prison perimeter, usually prison cells or outside exercise yards) (100, 146).

Twelve prisons in Quebec, Canada, introduced a complete smoke-free policy in February 2008, but three days later amended it to a partial policy allowing prisoners to smoke during their one hour of daily outside exercise. After the partial policy was implemented, an evaluation concluded that 93% of inmates who declared themselves smokers reported using tobacco products inside the correctional facilities and 48% did not report any reduction in their tobacco use (147). The journal article went on to state that the partial restriction had not produced the intended outcome of improved health for prisoners and staff, and that a complete smoke-free policy would have been more effective. In 2014, the Quebec Department of Public Security made the decision to go smoke-free within its prisons, applying the policy to both inside and outside areas (the rest of the Canadian prison estate had gone smoke-free in 2008) (148). A Swiss prison introduced a partial policy (smoking only permitted by prisoners in cells and designated rooms) in 2009. There was no significant difference in the airborne particulate matter <10 microns in diameter (PM_{10}, used as a proxy for SHS in this study) sampled before and after the introduction of the partial policy. The authors concluded that the policy did not ensure sufficient protection against SHS (149). It has been suggested that these partial smoking restrictions in prison settings produce more problems and tensions by creating the potential for inconsistency, fragmentation, inequity, and uncertainty; and that both prisoners and staff want to know 'where they stand' (150).

In the US, all federal and most state and local correctional facilities have adopted smoke-free policies (no smoking by prisoners or staff on the prison site) (102), largely brought about without access to NRT or other forms of behavioural stop smoking support (100,

103). Correctional officials did however offer education to prisoners and staff about the policy rationale and provided them with a timetable for implementation prior to going smoke-free (102). Prisons in New Zealand have been completely smoke-free since July 2011 (six pilot sites going smoke-free prior to the national roll-out) and Australia have been introducing comprehensive smoke-free policies since 2013 (150, 151). Australia modelled their smoke-free implementation strategy on the one used in New Zealand which had been executed without any major riots or other major incidents (151). Both had a communication strategies one year prior to their smoke-free date (to include pamphlets, posters and smoke-free countdown announcements), education was provided on the health impact of smoking and options for quitting, prisoners had access to free NRT, behavioural support and a free-phone national 'Quitline' service, alongside additional prisoner events (for example, sports and art classes) (150-152) (see Table 1.1 for a summary of smoke-free implementation worldwide).

Prisons in US and New Zealand saw a decline in $PM_{2.5}$ concentrations (77% and 57% respectively) after the implementation of the policy (143, 144). However one study, conducted in a maximum security prison in Australia, observed an unexpected increase in average levels of most indoor pollutant concentrations after their smoke-free policy (153). They attributed this result to prisoners' high levels of clandestine smoking post-policy. Within the UK, Isle of Man prison (holding around 100 prisoners) was the first to go completely smoke-free in 2008, when a former Victorian prison was replaced by a newly built prison (108). The Isle of Man prison offered prisoners who wanted to quit up to 14 weeks of free NRT (patches and inhalators) alongside behavioural support however no electronic cigarettes were available to purchase (107). In an unpublished report by The Tobacco Control Collaborating Centre (reported in a review elsewhere (108)) staff member personal air quality sampling (using $PM_{2.5}$) found a 75% reduction in SHS concentrations

after going smoke-free; however, levels of salivary cotinine (the predominant metabolite of nicotine) among staff showed no difference before and after the policy was implemented. In 2013, Les Nicolles prison in Guernsey went completely smoke-free, at the same time introducing electronic cigarettes for prisoners to purchase (in addition to free NRT and behavioural support already available) (154). A 2016 review on the impact of smoking cessation initiatives in prisons, to include smoke-free polices, identified seven studies looking at complete smoking bans in prison (103). They reported that complete smoke-free policies (oppose to partial restrictions) can be effective in interrupting smoking behaviour and reducing smoking amongst this population however study methodologies were weak. All HMYOIs in England and Wales which only hold young people (offenders under the age of 18 years) went comprehensively smoke-free prior to the smoke-free legislation outlined in the Health Act 2006 (14, 35).

The implementation of smoke-free policies in high security psychiatric hospitals provides a rare opportunity to evaluate the impact of a smoke-free policy in a highly controlled environment that is very similar to prisons. As with prisoners, it is not possible for patients in high security psychiatric facilities to go outside the buildings or grounds unescorted. By July 2008, three highly secure psychiatric hospitals in England (Ashworth, Broadmoor, Rampton) were completely smoke-free (108). Both Broadmoor and Rampton informed patients the hospital would go smoke-free three months before the implementation date, offered smoking cessation advice and pharmacotherapies during the lead in period and afterwards. Tobacco and smoking paraphernalia were prohibited for all patients, staff and visitors within the hospital sites post-implementation. A smoke-free evaluation was completed at Rampton and collected data pre- and post- policy, this included surveys with patients and staff and routine data collection from the hospital (for example, untoward incidents and seclusion, number of NRT prescriptions and any changes in psychotropic

medication). The findings of this evaluation did not show any marked increase in use of psychotropic medication, self-harm or behavioural disturbance and as a result concluded that with adequate preparation, it is possible to implement a total smoke-free policy in high secure psychiatric settings without serious consequences (155). No such empirical evaluation was conducted at Broadmoor, however personal correspondence (reported in a review of smoke-free prison policies (108)) from an individual working at Broadmoor at the time described the implementation as 'non-eventful'.

1.5.5.2 The impact of implementing a smoke-free prison policy

Complete smoke-free polices have been shown to be successful in lowering SHS exposure in prisons (143, 144), however research suggests that there can be other positive and negative outcomes associated with the implementation of such a policy (see Table 1.1 for a summary of the positive and negative outcomes associated with the introduction of smoke-free policies worldwide).

Although in a small sample (49 incarcerated men) in the US, 67% of participants considered their health status to have improved since the implementation of the smoke-free policy (156). Another report from the US in 2013 suggested that prisoner healthcare costs had reduced, with a 40% reduction in cardiology visits (report no longer available, cited in (108)). The most comprehensive study to date exploring the impact of a smoke-free policies on prisoner health was conducted by Binswanger and colleagues (previously mentioned in this chapter) looking at smoking attributable deaths from 2001 to 2011 in US prisons (140). In prisons which had a smoke-free policy it reported a 9% reduction in smoking-related deaths amongst offenders. Prisons in New Zealand observed a reduction in the amount of arson-related incidents post-smoke-free as a result of lighters being prohibited since implementation (150) however this only compared arson incidents

recorded one month pre- and post- policy. The Governor of Guernsey's Les Nicolles prison also stated that money had been saved on redecoration at the prison since going smoke-free in a news article (154).

Prisons in New Zealand, Northern Territory's of Australia, the US state of California and Les Nicolles prison in Guernsey reported no significant increase in disorder, violence or drug use after going comprehensively smoke-free (108, 150, 151, 154). In a review of smoke-free polices in prisons there was some evidence of unintended consequences (for example, aggressive behaviour) as a result of the policy, however these were typically short-lived and modest (103); it is worth noting that the authors of this review also highlight that the included studies were methodologically weak. One prison in New Zealand and a HMYOI in England (HMYOI Ashfield) reported an increase in disorder during the months following their smoke-free policy (150, 157). One study examining rates of bullying six months before and six months after the introduction of a smoke-free policy at HMYOI Warren Hill found that rates decreased (158). Australia, New Zealand and the US all saw an increase in black market tobacco traded amongst prisoners after the introduction of a smoke-free policy (121, 150, 151), however reports from New Zealand suggest that this waned after methods of checking and stopping contraband were improved two months into the policy (150). A ethnographical case study in ten prisons with complete smoking bans in the US (121) found that prison wardens and jail administrators reported a decline in illegal drugs entering their facilities since stopping tobacco, attributable to the greater demand for cigarettes than drugs. Prisoners went on to suggest that demand is, in fact, greater for tobacco than other drugs, with several offenders claiming that stopping smoking had been more difficult than quitting heroin.

Prisons in New Zealand and Australia have reported on how prisoners have turned to smoking 'homemade' rolled cigarettes made up of alternative substances, often the contents of teabags, where possible, with the contents of an NRT patch, in an attempt to get nicotine (108, 150, 151). An unannounced visit from HM Chief Inspector of Prisons to the Isle of Man prison in 2011 stated there had been a number of negative consequences from the implementation of their smoke-free policy, these included: bullying for NRT patches, lax practices for NRT distribution, alternative substances being smoked, dangerous practices to ignite cigarettes, and officers colluding with illicit smoking activities (159).

The success of New Zealand's smoke-free policy has been attributed to a few factors: enacting a complete as opposed to a partial policy, having those responsible for the New Zealand penal system and the individual prisons being comprehensively prepared during the long lead in period, good communication with prisons regarding the implementation, and free behavioural support and NRT available to all prisoners and staff (108, 150).

Although all comprehensive smoke-free prison policies worldwide have largely been hailed a success, the evidence is limited to a small number of studies with the majority of these studies being methodically weak. These studies tend to be small scale with low levels of participation, exclude prisoners and/or staff perspectives, are conducted in a single prison, collect data at a single time point only (often after the policy is introduced) or are conducted in YOI and not the adult estate. Other evidence outlined in this section draws upon opinion pieces, unannounced prison inspections or media reports which, as highlighted at the start of this section, could be bias towards a particular viewpoint or political agenda.

Table 1.1 Summary of literature on implementation of smoke-free prisons worldwide and their impact

Country	Date smoke-free introduced	Smoke-free implementation strategy	Positive outcomes	Negative outcomes
US (Studies from prisons in California)	July 2005	Six months lead in time and sale of tobacco ceased three months prior to implementation. Correctional official's delivered education (dangers of smoking and benefits of quitting) to prisoners and staff and a timetable for implementation was provided (102, 103, 108).	- Reduction in $PM_{2.5}$ concentrations* (77%) pre- to post- smoke-free (143). - Improvement in prisoners self-reported health (156). - Reduction in smoking related deaths (140). - Decline in drugs entering prison (121). - Reduced prison healthcare costs and reduced level of prisoner aggression (108).	- Increase in black market tobacco (121).
New Zealand	July 2011	One year lead in time, with six pilot sites going smoke-free prior to national implementation. Sale of tobacco ceased one month prior to implementation. NRT (for up to eight week), behavioural support and a national free-phone service (Quitline) offered (150). Education delivered to prisoners (dangers of smoking and benefits of quitting) alongside stop smoking resources, such as posters and pamphlets and extra activities (sporting events, exercise initiatives, cultural activities and art classes). Prison staff became 'Workplace Champions' and gave advice about quitting to prisoners and staff (152).	- Reduction in $PM_{2.5}$ concentrations* (57%) pre- to post- smoke-free (144). - Reduction in arson-related incidents (150).	- Initial rise in tobacco contraband and the black market price for tobacco doubled (150). -Reported use of 'homemade' cigarettes (150). - One prison reported an increase in violence between prisoners one months after the policy (150).

Australia (Studies from prisons in the Northern Territory's)	July 2013	One year long lead in time. Staff members attended and completed 'Quit' training and information sessions. Prisoners could attend 'quit groups' and receive free NRT (6-12 weeks) and access a national free-phone service (Quitline). Additional sport and healthy food options were provided. Communication for prisoners and staff included posters, banners, daily countdowns to the policy date and an outside media campaign (151).	- No reports of riots or major incidents with the introduction of smoke-free (151).	- Increase in indoor pollutant concentrations from pre - to post- smoke-free policy (153). - 'Homemade' cigarette and trading in NRT patches (151).
UK Isle of Man, Jurby	August 2008	Prisoners offered NRT (14 weeks) alongside behavioural support. Sale of tobacco ceased two weeks prior to implementation date (107).	- Reduction in $PM_{2.5}$ concentrations* (75%) from pre - to post- smoke-free policy (108).	- Bullying for NRT patches and lax distribution, 'homemade' cigarettes being smoked, dangerous practice for lighting cigarettes and staff colluding in illicit smoking activities (159).
Les Nicolles, Guernsey	January 2013	Prisoners offered NRT patches and electronic cigarettes (154).	Re-decoration costs reduced (154).	

* $PM_{2.5}$ concentrations used as an established marker for SHS.

1.5.6 The tobacco policy in HM Prison Service in England and Wales

Legislation requiring all workplaces and public places to be smoke-free was introduced in England in July 2007 (35). As previously discussed, there were a few exemptions to the English legislation, one of which applied to designated rooms (cells) within prisons. Prison Service Instruction (PSI) 09/2007 which came into force shortly before the English smoke-free legislation (April 2007) introduced a partial smoke-free policy which allowed smoking by prisoners aged over 18 years in single cells or in a cell shared with other smokers only (137). Unlike England, prisons in Wales did not apply for an exemption to their smoke-free legislation, regardless prisoners still smoked in Welsh prison cells after 2007.

The English policy went on to state that prisoner cell doors must be closed when smoking (as they are opening onto a non-smoking landing location), there must be signage indicating where smoking is not allowed displayed throughout establishments, that smoking is not permitted in any prison service vehicle, that snuff and chewing tobacco were still permitted (due to posing no significant health hazards to others), and mother and baby units were to become completely smoke-free in order to protect infants and unborn children. Pregnant staff or prisoners were not mentioned in the new 2007 PSI. In relation to staff members who smoke, the PSI made clear that they are not allowed to smoke in any of the buildings of the prison, to include prison cells (where currently prisoners are permitted to smoke). The potential for a future comprehensive smoke-free prison policy in England is touched upon in the PSI, allowing prison Governors to introduce smoke-free landings and/or wings where appropriate and feasible following consultation with staff and prisoners. Finally the PSI states ‘the desirability of attaining a 100% smoke-free prison estate in the future is acknowledged’ (137).

In March 2015, the High Court ruled in favour of a smoke-free policy in English prisons, stating that the smoke-free legislation outlined in the Health Act 2006 (35) should apply to state run prisons in England (160). This High Court action was taken by a non-smoking prisoner, Paul Black, who claimed to have suffered poor health due to frequent exposure to SHS whilst serving his prison sentence (Black -v- Secretary of State for Justice). The judgment reports that Mr Black had a history of angina, dyspnoea and anterior myocardial infarction, and had had surgical coronary intervention. Mr Black's witness statement argued that the current PSI was being flouted by offenders and staff members (for example, by smoking on landings and in laundry rooms) and that the smoke-free legislation contained in the Health Act 2006 should include prisons on health grounds (160) with immediate effect. Permission for the Secretary of State for Justice to appeal the ruling was also granted and one year later (March 2016) the ruling was over turned; the judgment stated that the ban on smoking in public places does not apply to state prisons and other crown premises (Secretary of State for Justice -v- Paul Black (161)). This judgement gives the MOJ time to phase in a smoke-free policy throughout the estate, as outlined in its announcement in September 2015 (162). The case brought by Mr Black had stipulated quicker implementation of smoke-free policy, however the MOJ have instead suggested that smoke-free prisons will be introduced gradually in a safe and secure manor rather than rushing it through (163).

The latest Government tobacco control strategy 'A Smoke-free Future' was published in 2010, shortly followed up by the tobacco control plan in 2011, 'Healthy Lives, Healthy People: a tobacco control plan for England' (21, 164). Both of these reports set out a long term plan to reduce harms associated with tobacco use and lowering prevalence, especially amongst disadvantaged groups (for example, those with mental illness). The inclusion of prisoner populations in this long term plan is minimal (21, 164).

1.6 JUSTIFICATION FOR THESIS

From reviewing the literature regarding tobacco use in prison and the impact of it, there is a definite lack of UK specific empirical evidence in recent years in this area. In 2014, at the beginning of this PhD, HM Prison Service were coming under increasing pressure from non-smoking prisoners, staff and the POA who were concerned over the levels of SHS in which they lived and worked. Since the PSI 09/2007 came into effect within all prisons in England in 2007 no published empirical research has aimed to examine how this partial policy works and whether it is effective in protecting non-smokers from SHS. There is also no empirical multi-methods evaluation of smoke-free prisons implemented worldwide; assessments in other countries tend to involve a single prison with either air quality testing or small scale qualitative components, with data often collected only after the smoke-free policy has been introduced.

1.7 AIMS AND OBJECTIVES

This thesis is divided into two parts. The first aimed to examine the current PSI 09/2007 (137) relating to smoking restrictions in four prisons in England (HMPS Exeter, Erlestoke, Eastwood Park and Holme House), to determine how effective this partial policy was in protecting non-smokers from SHS and how it worked operationally in a prison setting. The main objectives were:

- To measure $PM_{2.5}$ concentrations, as a proxy measure for SHS, in four English prisons. Sampling prison landings and in smoking and non-smoking cells; and ambient monitoring personal exposure of staff working in these settings. Results to be considered alongside current standards for indoor air quality produced by the WHO (Chapter 2).

- To explore staff members' perceptions of smoking behaviours in prison, how the current PSI works (in practice and compliance amongst prisoners and staff), perceived exposure to SHS, and attitudes towards smoke-free prisons in the future (Chapter 3).

In September 2015, in part in response to the findings of the indoor air quality studies I carried out, NOMS announced the pilot implementation of a comprehensive smoke-free policy in four prisons in the South-West of England. The second part of this thesis aimed to conduct a mixed methods evaluation of the four pilot sites (HMPS Exeter, Erlestoke (prisons included in first part of this thesis) Channings Wood and Dartmoor) which implemented a comprehensive smoke-free policy from April 2016. This evaluation was carried out in full collaboration with NOMS. The main objectives were:

- Pre-policy: to establish current smoking prevalence amongst prisoners and staff; identify perceived problems, concerns and benefits of the prison going smoke free; and seek prisoner and staff opinions on how the prison should prepare/implement changes to help with the introduction of smoke-free prisons (Chapter 4).
- Post-policy: to explore the impact of a smoke-free policy, determine how attitudes to smoke-free policy change, and to explore views on the implementation of the policy and how this could be improved in the future (Chapter 4).
- To compare $PM_{2.5}$ concentrations (as a proxy measure for SHS) on wing landing locations three months before and three months after the introduction of the smoke-free policy. $PM_{2.5}$ measurements will determine whether the new policy is sufficient in reducing concentrations of SHS and to establish whether SHS concentrations post- policy are within the WHO recommended limits (Chapter 5).

1.8 UNDERPINNING PHILOSOPHICAL APPROACH

The research conducted in this thesis is pragmatic: it is concerned with what works, and solutions to problems in the real world (165). This 'problem centred' approach offers the researcher the freedom to select methodological techniques that best address a research question (166). A pragmatic stance therefore supports the use of mixed methods as well as different modes of analysis whilst being guided primarily by the researcher's desire to produce useful knowledge that can be generalised and transferred into practice (167, 168).

1.9 ETHICS APPROVAL AND SECURITY CLEARANCE

The University of Nottingham, Medical School Ethics Committee (G06062013 CHS EPH) approved all studies reported in this thesis (apart from staff member interviews in Chapter 3), these studies were then subsequently approved by NOMS, National Research Committee (NRC) (Ref: 2013-202) in July 2014. An amendment to the original ethics application was made to The University of Nottingham, Medical School Ethics Committee and NOMS NRC to complete staff member interviews and this was approved in September 2014. Permission to enter all six prisons for data collection was sought from the Deputy Director of Public Sector Prisons and the Deputy Director of Custody for the South-West area (apart from HMP Holme House which is under a different geographical region). The Governors at each prison also agreed to the research being undertaken at their establishments. For the evaluation of the four early adopter prisons (work outlined in Chapters 4 and 5), researchers (LJ & CH) were also security cleared to Enhanced Level 1, enabling them to visit establishments and work within NOMS. Researcher/s were given security talks from each establishments prior to data collection.

1.10 RESEARCHER AND PARTICIPANT SAFETY

The doctoral student (LJ) and researcher who supported data collection in prisons (CH) had no prior knowledge of prisoner offences during recruitment into the studies outlined in this thesis. Therefore it was critical to establish good lines of communication with prison security teams and officers, to ensure researcher safety. The security department at each prison gave the researchers a talk on security and safety on arrival, they also made them aware of individuals whom they considered a threat to security (for example, a risk to women). Before a researcher approached any prisoner (for example, in a workshop, on a wing landing) to recruit, approval was sought from the staff member currently supervising the area and those prisoners within it (for example, the workshop teacher or senior wing officer). In the event that prisoners disclosed at-risk behaviours (for example, self-harm, fear for their own safety) to one of the researchers during data collection, researchers knew of the Security Information Report (SIR) procedure (a report submitting this to security Governor for review) and that any further action taken would be in line with the security, Incentive and Earned Privileges (IEP) scheme and adjudication procedures within the prison.

2 SECOND-HAND SMOKE IN FOUR ENGLISH PRISONS: AN AIR QUALITY MONITORING STUDY

2.1 INTRODUCTION

As stated earlier, an exemption to the English legislation which made all public places and work places smoke-free in 2007 (35) allows prisoners aged over 18 to smoke in single cells or in cells shared with other smokers (137). Since around 80% of prisoners in the UK smoke (98, 109, 112), levels of SHS in some indoor prison areas are likely to be very high, resulting in a significant potential hazard to prisoners, prison staff and visitors. To our knowledge, there is currently no data from prisons in England examining the HM Prison Services current partial smoking restriction (PSI 09/2007), especially on levels of SHS on wing landings and in prisoners' cells (both smoking and non-smoking). Evidence to date on SHS levels in prison in other countries is limited (143, 144, 149), but it has shown levels above what is considered safe by the WHO (145).

The concentration of airborne particulate matter <2.5 microns in diameter ($PM_{2.5}$) is a well-established marker of indoor SHS concentrations (169, 170), and previous studies have shown high $PM_{2.5}$ concentrations in environments where smoking has taken place (54, 170). Although there is no safe level of SHS and hence no appropriate limit of tolerance of SHS exposure, particulate pollution in general is subject to standards for indoor air quality produced by the WHO, which recommends that $PM_{2.5}$ concentrations alone should not exceed 25 μg/m³ as a 24-hour mean, or 10 μg/m³ as an annual mean (145).

2.2 AIM

The aim of this study was to measure $PM_{2.5}$ concentrations in four English prisons, as a proxy measure for SHS, on prison landings and in smoking and non-smoking cells; and by ambient monitoring as a measure of personal exposure of staff working in these settings. The findings described in this chapter were published in BMC Public Health, under the same title, in 2016 (171).

2.3 METHODS

2.3.1 Study prisons

Data were collected from four English Prison Service establishments selected to provide variety in relation to security level, inmate gender, structural design and size (Table 2.1). All four prisons had a no-smoking policy for staff members within the prison perimeter, though one had designated areas within the prison grounds for electronic cigarette use by staff members. Prisoners were only allowed to smoke in their prison cell with the exception of one prison which permitted smoking in the exercise yard over lunch periods for those who left the wing all day to work. All had smoke-free wings which included smoke-free cells (Table 2.1).

Table 2.1 Prison facility characteristics

	Category and Function*	Structural Design	Prisoner Roll Count^	Number of Wings	Smoke-Free Wings	Sampled
HMP Eastwood Park	Female Closed Local	Built 1960s. Mix of original, T-shaped, and temporary wings.	262	9	Mother and baby unit	July 2014
HMP Erlestoke	Male Category C Training	Built 1960s. Mix of triangular, T-shaped and temporary wing.	494	8	Care and separation unit	August 2014
HMP Exeter	Male Category B Local	Built 1850s. Victorian radial design.	533	5	Healthcare	August 2014
HMP Holme House	Male Category B Local	Built 1992. Bullingdon design, with additional mix of wings.	1215	9	Healthcare & house block 7, spur A	October and November 2014

*Category B prisons hold prisoners for whom the very highest conditions of security are not necessary but for whom escape must be made very difficult.

*Category C prisons hold prisoners who are not trusted in open conditions but are not thought to the resources and will to make a determined escape attempt.

*Female closed prisons can hold category A, B, C prisoners. Due to the smaller female prisoner population, female establishments are categorised into either ‘closed’ or ‘open’.

*Local prisons serve the courts and receive remand and post-conviction prisoners prior to their allocation to other establishments.

*Training prisons hold sentenced prisoners who tend to be employed in a variety of activities such as prison workshops, gardens and education and in offending behaviour programmes.

^ Prisoner roll count taken at time of data collection.

2.3.2 Particulate pollution

$PM_{2.5}$ concentrations were measured using a battery-operated SidePak Personal Aerosol Monitor AM510 (TSI Inc, MN, USA) fitted with a $PM_{2.5}$ impactor and set to a calibration factor of 0.30, as established in the literature to measure tobacco smoke (172, 173). In accordance with manufacturer's instructions, SidePak devices were cleaned, the impactor re-greased, zero-calibrated and the flow rate set at 1.7 l/min before each use. $PM_{2.5}$ measurements were logged at one minute intervals, with each one minute data point being an average of 60 seconds of sample measurements.

2.3.3 Data collection

Data were collected over three to four consecutive days, typically from a Wednesday or Thursday to Saturday, so that sampling took place in both weekday and weekend regimes, and before and after 'canteen' days when prisoners receive their purchased items (such as tobacco or other personal goods, typically Fridays). A researcher trained in the use of air quality monitoring and surveying, with the help of a prison service headquarters staff member, placed the SidePak monitors in static locations on wing landings and in prisoners' cells, or attached the monitor to wing-based prison staff to collect personal exposure data during parts of their work shifts.

Fixed locations on wing landings were chosen to cover the range of wing designs and function. Monitors were placed as discreetly as possible to avoid disturbing prisoners' normal behaviour, though wing officers knew where monitors were placed and for how long. The device was usually placed half way down the wing, above head height and away from open outside doors, windows, or cooking equipment. The monitor keypads were

locked during sampling. We collected samples on each day for as long as the researcher was allowed access to the wing, and subject to limitations of battery life and in the case of personal monitoring, staff shift patterns. The gentle buzz emitted from the SidePak monitors could not be heard above the surrounding environmental noise during personal and wing sampling. Data on the layout of the wing, prisoner roll count and lock/unlock times were recorded. Prisoners who inquired were informed that we were measuring air quality.

Wing officers were asked to identify smoking and non-smoking prisoners who were suitable to have a SidePak monitor placed in their cell. These prisoners were then approached by the researcher who gave them an information sheet (see Appendix 7.2), explained the study and answered any questions. Written informed consent was sought from those who wanted to participate and then the SidePak monitor was generally placed on a shelf or desk at around waist height in their cell. Data on each cell location, the number of prisoners in the cell, their smoking status and the style of the cell window were recorded. Due to the gentle buzz the SidePak monitor makes whilst sampling it was placed in a cool box surrounded by foam padding. Data were typically collected for a few hours over a morning or afternoon period.

Prison staff working in the prisons were contacted by email in advance of the study visit, or by word of mouth at the time the monitors were placed on wings or in cells, and invited to volunteer to wear a monitor for personal sampling. All who volunteered were given an information sheet (see Appendix 7.3) along with a verbal explanation of the study and asked to provide written consent. We recruited both current smokers and non-smokers. At the start of the monitoring period, participant self-reported smoking status were recorded and then confirmed by providing a measurement of exhaled CO, taken with a Smokerlyzer

(Bedfont Scientific Ltd). The SidePak monitor was then attached to their belt and a short length of Tygon tubing was used to sample air from their breathing zone. The researcher provided each participant with a location report (a Microsoft Excel spreadsheet detailing all areas of the prison and typical tasks undertaken by officers) to be completed for the sampling period. This data could then be used to link concentrations of $PM_{2.5}$ sampled to areas of the prison or tasks officers complete during a typical shift. Participants only wore a SidePak monitor during their working hours, if they wanted to remove the monitor for any reason (for example, it prevented them carrying out their work duties or they had a timetabled break from their shift) to contact the researcher (LJ) so that the monitor could be stopped and removed. A second measurement of exhaled CO was taken when sampling finished, when the staff members also returned a timed log of their work locations and activities during the data collection period.

2.3.4 Data analysis

Since the SidePak monitors were usually turned on and off just before and after being placed in the sampling sites we discarded the first and last five minutes of each data record. Each set of sampling data was downloaded from the monitor using Trackpro 4.6.1 software, and transferred to a Microsoft Excel spreadsheet with the corresponding location, cell and staff member data. STATA 13 was used to generate descriptive statistics including arithmetic means, 95% confidence intervals, standard deviations, ranges and times of maximum values, and to estimate the proportion of time in which the $PM_{2.5}$ concentration exceeded the WHO 24-hour mean $PM_{2.5}$ upper limit of 25 $\mu g/m^3$ (145) for each data set. Although $PM_{2.5}$ data distributions were skewed, we present arithmetic as well as geometric mean figures since the former are used by the WHO to define upper limits. Log-transformed data were used for all t-test comparisons. For wing landing and

prison cells sampled, comparisons were made between smoking and non-smoking locations. In addition, comparisons were made between gallery and non-gallery structural design and pre- and post- canteen delivery days for wing locations.

2.4 RESULTS

In total 86 datasets were collected from wing landing, prison cells and personal monitoring. Three datasets were discarded because the monitor had been tampered with, leaving 83 for analysis. Prisoner roll count on the wings sampled varied from four to 180. Details of the number of datasets, and arithmetic and geometric mean, median and range for each type of sample location, including a smoking/non-smoking breakdown, are presented in Table 2.2.

Table 2.2 Summary of data collected from SidePak monitors located on wing landings, prison cells and whilst attached to staff members

	Sample Locations		
$PM_{2.5}$	**Wing Landings**	**Prison Cells^**	**Attached to Staff Members +**
Total Datasets	48	13	
(average duration, hours)	(6.5)	(4.88)	
Arithmetic Mean (µg/m³)	40.08	103.1	
Standard Deviation	57.08	237.47	
Range	0 - 1124	0 - 2684	
Median	30.78	27.52	
Geometric Mean (µg/m³)	32.57	59.2	
Interquartile Range	16.40 - 35.85	10.49 - 90.63	
Non-Smoking Locations	6	8	
(average duration, hours)	(5.18)	(5.12)	
Arithmetic Mean (µg/m³)	5.90	16.98	
Standard Deviation	2.90	15.46	
Range	0 - 22	1 - 102	

Median	5.71	13.39	
Geometric Mean (µg/m³)	5.58	14.88	
Interquartile Range	5.29 - 7.77	6.9 - 25.82	
Smoking Locations˜	42	5	22
(average duration, hours)	(6.66)	(4.51)	(4.18)
Arithmetic Mean (µg/m³)	43.87	226.16	23.51
Standard Deviation	58.95	333.08	34.01
Range	1 - 1124	8 - 2684	2 - 608
Median	32.86	162.90	19.04
Geometric Mean (µg/m³)	35.57*	122.52*	18.57
Interquartile Range	18.9 - 36.97	81.61 - 163.14	11.37 - 18.59

*Independent sample t-test comparing smoking and non-smoking locations, denotes significance ($p<0.001$).

^ All prison cells sampled were located on wings where smoking was permitted in cells only.

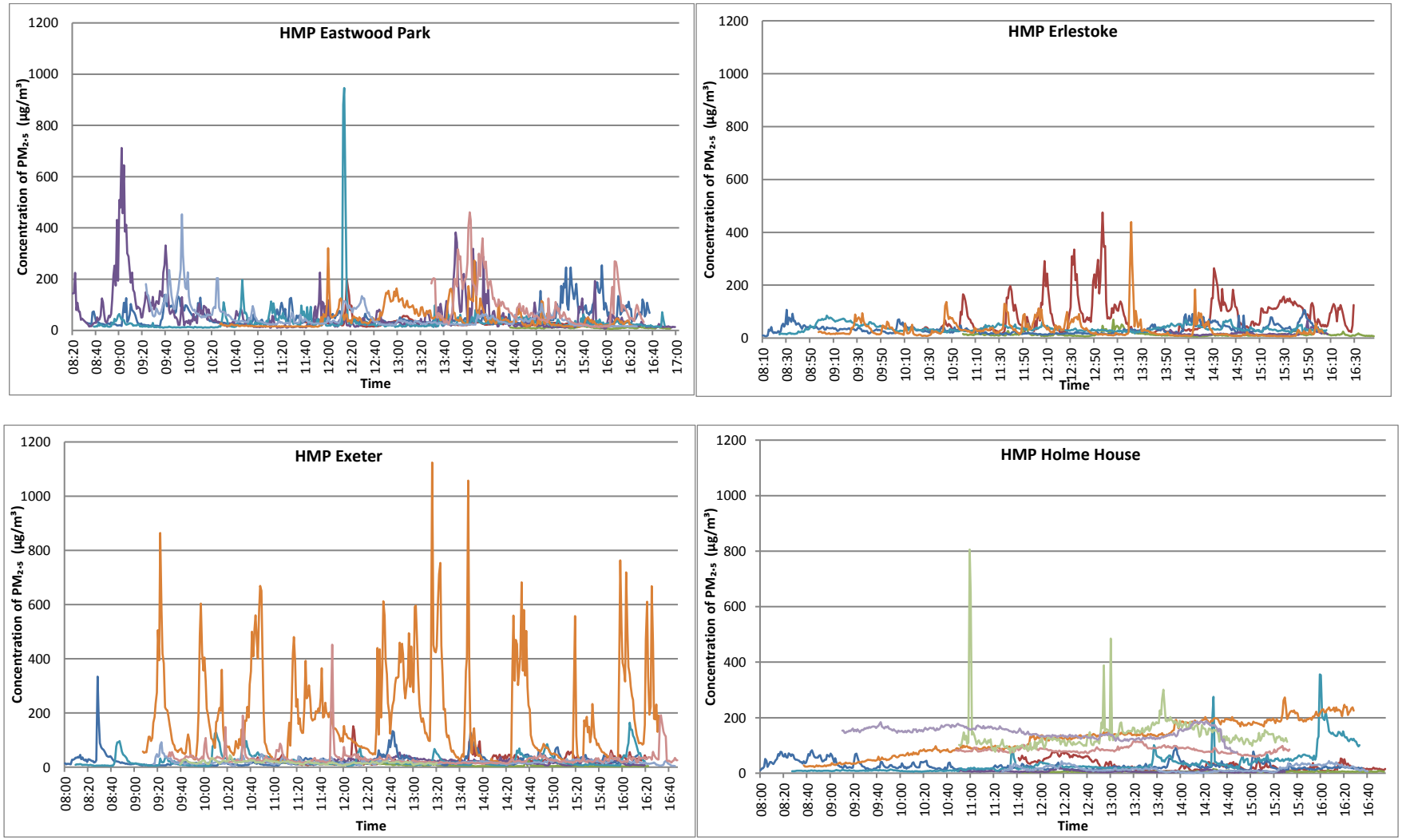
+ All staff members sampled worked on locations where smoking was permitted in cells only.

˜ Smoking locations were those where smoking was permitted in cells only.

2.4.1 Wing landings

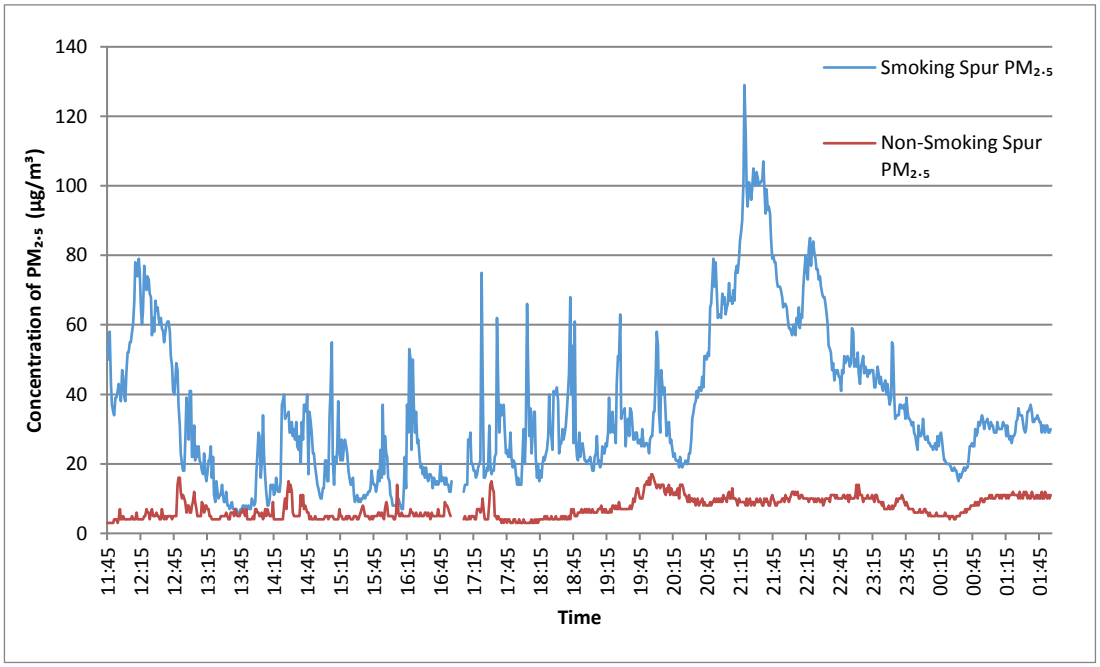
A total of 48 datasets were collected from 30 different smoking and non-smoking landing locations (for further detail see Appendix 7.4 Individual datasets collected from wing landing: wing function and design, sampling times, arithmetic mean values, range and percentage of sampling time over 25 μg/m³). Thirty-eight locations were sampled exclusively during the daytime period, and ten were sampled into the night time. The average period over which data were collected was 6.5 (Standard Deviation (SD) 2.0) hours. Arithmetic mean $PM_{2.5}$ in the 48 datasets was 40.08 μg/m³, and ranged from 0 to 1124 μg/m³. Mean $PM_{2.5}$ concentrations were significantly higher on landings where smoking was permitted in cells than non-smoking wing landings (arithmetic means, 43.87 μg/m³ and 5.90 μg/m³ respectively, $p<0.001$). Of the 42 datasets from smoking in cell locations, 18 landings spent over half of the sampling time over the WHO 24-hour mean upper guidance limit of 25 μg/m³ (145). In the three prisons with a single canteen day (one prison was excluded from the analysis because its canteen delivery spanned two-three days, therefore no pre-canteen data were available), $PM_{2.5}$ concentrations were also higher on smoking in cell locations on the day after the canteen was delivered (20.33 μg/m³ before and 27.83 μg/m³ after, $p<0.001$). There was no difference in $PM_{2.5}$ concentrations sampled from wings of different structural design, however due to the huge variation in wing structural design throughout the four prisons this comparison could only be made between gallery style and non-gallery style wings. Continuous data from all wing landings sampled at the four prisons during the daytime are represented graphically in Figure 2.1, with each coloured line representing a single dataset collected from a wing location (for more information on single datasets see Appendix 7.4 Individual datasets collected from wing landing: wing function and design, sampling times, arithmetic mean values, range and percentage of sampling time over 25 μg/m³).

Figure 2.1 Concentrations of $PM_{2.5}$ sampled on landing locations in four prisons sampled over the day time periods, each coloured line represents a single dataset collected from a wing location



One establishment had a T shaped design wing comprising three identical spurs (wings can get separated into smaller sections know as spurs, this segregates the wing population into manageable sections for staff members), one of which was voluntarily non-smoking. The spurs were connected by gated doors which allowed air to flow between them. SidePak monitors were run on the voluntary non-smoking and the smoking spur simultaneously throughout the day and then again into the evening time, producing four datasets in total (Figure 2.2 presents these four datasets from the same prison wing). Figure 2.2 shows higher concentrations of $PM_{2.5}$ sampled on the smoking spur during the day and evening time (blue lines) compared to the non-smoking spur (red lines). The smoking spur datasets sampled in the day and evening time spent 39% and 74% over the WHO limit of 25 µg/m³ as a 24-hour mean respectively, the two datasets from the non-smoking spur never exceeded this 24-hour upper guidance limit (145).

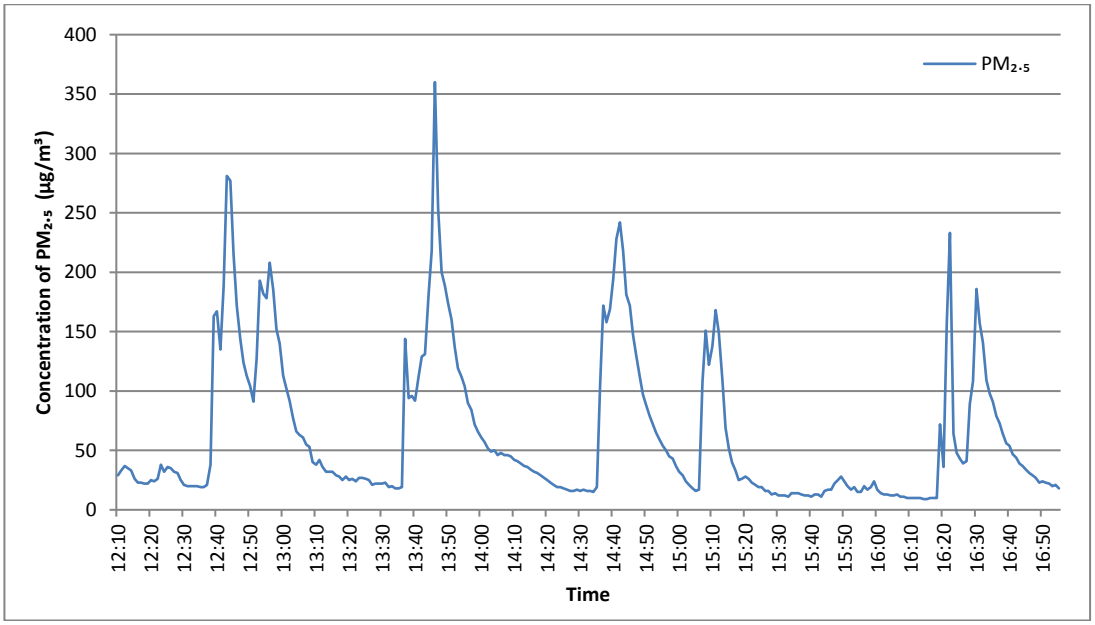
Figure 2.2 Concentrations of $PM_{2.5}$ sampled on one wing with smoking and voluntary non-smoking spurs



2.4.2 Prison cells

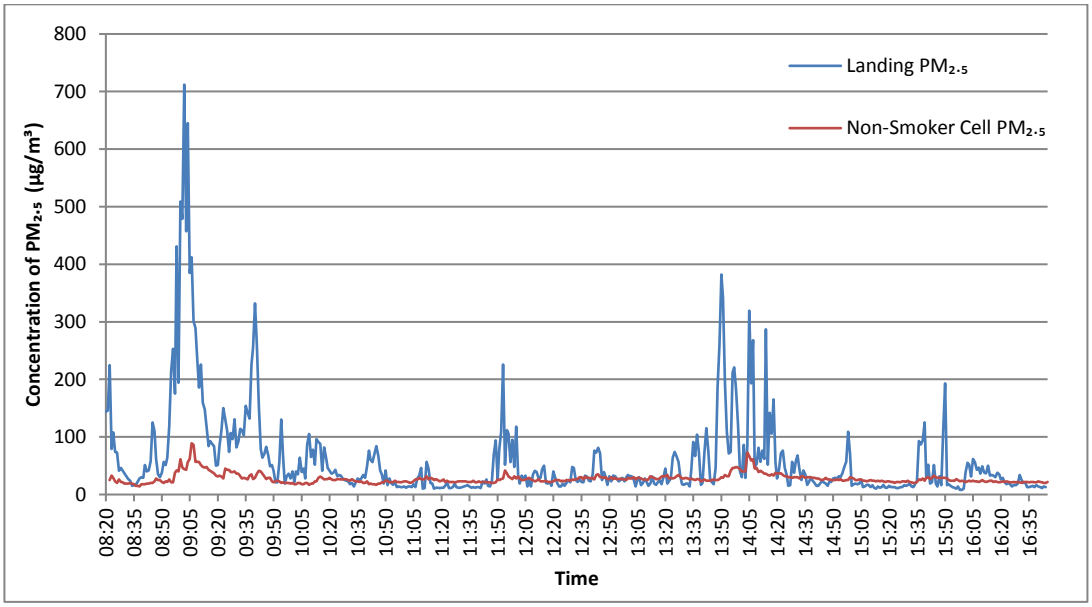
All 13 cells sampled were located on wings where smoking was permitted in cells, and five of the cells sampled had occupants who smoked (for further detail see Appendix 7.5 Individual datasets collected from prisoners cells: wing function and design, cell type, sampling times, arithmetic mean values, range and percentage of sampling time over 25 µg/m³). The average time for which data were collected was 4.88 hours (SD 1.76) and the arithmetic mean of the 13 datasets was 103.10 µg/m³. High concentrations of $PM_{2.5}$ were recorded in the five smokers' cells with means ranging from 62.31 to 434.74 µg/m³, and in all cases exceeded the WHO limit of 25 µg/m³ as a 24-hour mean (145) for over 60% of the sampling time. The arithmetic mean $PM_{2.5}$ concentration in smoking cells (226.16 µg/m³) were significantly higher than in non-smoking cells (16.98 µg/m³, $p<0.001$). Figure 2.3 shows concentrations of $PM_{2.5}$ sampled in a single cell where the occupant smoked. The prisoner reported smoking four hand-rolled cigarettes during the sampling period.

Figure 2.3 Concentrations of $PM_{2.5}$ sampled in a single smokers cell



Concentrations of $PM_{2.5}$ in non-smokers cells were relatively low (arithmetic mean 16.98 µg/m³), though higher in non-smoking cells on wings with closed narrow corridors than more open designs. Figure 2.4 shows $PM_{2.5}$ concentrations sampled simultaneously on a wing landing with closed narrow corridors and in a non-smoker's cell on the same landing. The wing landing had an arithmetic mean $PM_{2.5}$ of 59.78 µg/m³ whilst the non-smoking cell located on this landing had a mean of 27.52 µg/m³, with concentration levels above the WHO 24-hour upper guidance limit almost 50% of the time.

Figure 2.4 Concentrations of $PM_{2.5}$ sampled simultaneously on a landing and non-smokers cell from the same wing landing

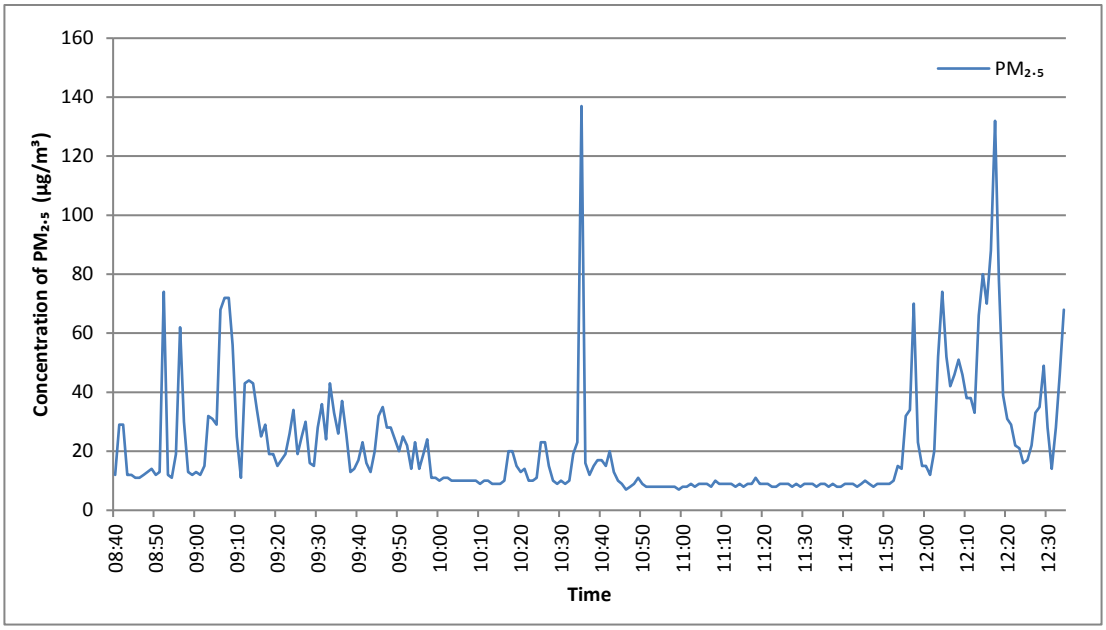


2.4.3 Staff members

Of the 22 staff members who volunteered for personal monitoring, 21 were prison officers and one a healthcare assistant (for further detail see Appendix 7.6 Individual datasets collected by personal monitoring of staff members: wing function and design, sampling times, arithmetic mean values, range and percentage of sampling time over 25 µg/m³). All

were based on wings where smoking was permitted in cells and had prisoner contact. Twenty-one staff members were monitored during a daytime shift and one on a night shift. The average period of data collection was 4.18 hours. The arithmetic mean $PM_{2.5}$ to which participants were exposed was 23.51 µg/m³. The location reports given to participants at the start of the sampling period were often not completed; officers said that they were too detailed and time consuming to fill in during a busy shift. Instead officers tended to note down their own timed diary of their locations and duties carried out during the sampling period and gave this to the researcher, this data was then used to link concentrations of $PM_{2.5}$ to areas or typical tasks officers completed during a working shift. Figure 2.5 shows concentrations of $PM_{2.5}$ sampled from a single prison officer during a morning shift alongside their self-reported timed outline of locations and duties during sampling.

Figure 2.5 Concentrations of $PM_{2.5}$ sampled during a prison officer's morning shift (See * for work details)



**Prison officer self-reported locations and duties during sampling:*

08:40-10:00 Wing landing; supervising, dealing with prisoner queries.

10:00-10:10 Wing office.

10:10-11:00 Wing landing; including entering a prisoner cell.

11:00-11:40 Wing office; checking emails and paperwork.

11:50-12:40 Wing landing; supervising lunch time and locking up prisoners.

The location report for this individual suggested that higher exposure levels tended to occur during periods spent on the wing landings, a finding that was evident in records from all other staff members. Some of the highest concentrations of $PM_{2.5}$ were recorded during duties such as locking or unlocking cells, handing out mail and cell searching. Lower $PM_{2.5}$ concentrations were recorded during periods when staff members were located in the wing office, supervising medication (when the medication hatch was not located on the wing landing) and escorting prisoners off the wing. One prison had three (out of the five) staff members sampled exposed to concentration levels above the WHO upper guidance limit of 25 $\mu g/m^3$ (145) for over 80% of their sampling period.

CO concentrations in exhaled breath were measured in 21 of the staff members who wore a SidePak monitor. The readings confirmed the smoking status of the staff member participating but did not demonstrate any difference between measures at the start and end of shifts among non-smokers.

2.5 DISCUSSION

2.5.1 Summary of findings

This is the first study to measure particulate pollution from SHS in prisons in England. Our findings demonstrate that on wings where smoking was permitted in cells, concentrations of $PM_{2.5}$ sampled on landings and from staff members working on them were high. Although we were for logistical reasons unable to carry out full 24-hour monitoring, the concentrations we measured often exceeded the WHO upper guidance limit of 25 $\mu g/m^3$ as a 24-hour mean (145), and in some locations did so for the entire period of monitoring. Levels of pollution in cells where smoking was permitted were particularly high. Some of the staff monitored were exposed above the WHO limit for over 80% of their working day. Since SHS contains several thousand toxins and many carcinogens (11), the hazards associated with this exposure are likely to be significant. Smoking in prisons is thus a significant potential cause of harm to health in smokers and non-smokers in the prison setting, and including both prisoners and staff.

2.5.2 Strengths and limitations

We used $PM_{2.5}$ concentration as a marker for SHS (169, 170) since direct measurement of tobacco-specific toxins in the atmosphere is expensive and sampling methods would be impractical in prison settings. SHS is not the only source of indoor $PM_{2.5}$, which includes particulate matter released from sources such as open fires, toasters and microwaves. However, where toasters and microwaves were present on the wings, every effort was made to place the SidePak monitors as far away from these as possible. We carried out much of our sampling during the summer months when natural ventilation to the wings

and cells through open windows and doors would have been greater than during the winter months, potentially causing our findings to underestimate average pollution levels over the longer term. Safe locations for the SidePak monitors were limited, but we tried to collect data from a broad selection of settings. Since we were obliged to answer questions from staff members and prisoners who enquired about the monitoring, our measurements were not carried out blind. However, whilst it is possible that prisoners or staff changed their behaviour in response to being monitored, we think that is unlikely to have occurred to any appreciable degree over the course of our measurements. Our maximum sampling time was determined by a battery life of around 9 hours, though in practice we were also constrained by restrictions on the times that we could leave and collect the monitors. Prison staff who wore monitors were also limited by their shift patterns. For all these reasons our sampling does not provide fully representative 24-hour sampling in the prisons; rather it reflects pollution levels at times during the day when prisoners were awake and more likely to be smoking. The proportion of monitoring times spent above WHO guidelines probably therefore overestimates the true 24-hour average figures, but the concentration levels observed were at times very high. As a best-case scenario, extrapolating the samples from wing locations to cover a 24-hours period with an assumption that the times not sampled had a reading of zero, two wings still produced an arithmetic mean above the 25 μg/m³ WHO upper guidance limit.

2.5.3 Interpretation in context of other studies

In an evaluation of smoke-free policy within correctional facilities in North Carolina, US, four facilities with no smoke-free legislation pre-policy recorded an arithmetic mean concentration of $PM_{2.5}$ of 93.11 μg/m³ (143). The arithmetic mean reported for all smoking wing landing datasets in this study is less than half (arithmetic mean 43.87 μg/m³) of that

reported in North Carolina, even though they report a 65% prisoner smoking prevalence which, is broadly similar to that in England. Twelve datasets were collected from smoking locations in North Carolina (compared with 42 in this study) and the average time for data collection was 1.28 hours (compared to 6.66 hours in this study). Prisons in the US tend to have large wing populations and instead of solid cell doors (like those in UK prisons) have bars, both of these factors could go some way to explain the higher concentrations of $PM_{2.5}$ sampled in prisons in North Carolina compared to this study. Another study, conducted in prisons in New Zealand (144) recorded $PM_{2.5}$ concentrations before a smoke-free policy was introduced, and produced a geometric mean before the policy of 6.58 µg/m³. Although much lower than the geometric mean recorded across smoking locations in this study (35.57 µg/m³) the authors acknowledge that the representativeness of their findings was constrained by their decision, out of fears that the monitors would be tampered with, not to sample air in common areas used by prisoners. Samples were therefore taken only from the 'staff base', and did not reflect levels elsewhere in the prison.

2.5.4 Protection from second-hand smoke for those who work and live in prison

Research evidence summarised by the WHO and others suggests that there is no safe level of exposure to SHS (13, 145). Data collected from staff members gave an insight into locations where exposures to $PM_{2.5}$ were highest, and these included the wing landing, and at the doorway and inside a prisoner's cell. Taken together, these findings can offer some guidance as to the types of wings or duties where staff members are exposed to the highest levels of SHS and therefore where protection from SHS is particularly needed.

Prisoners in England who want to avoid SHS exposure are entitled to request a non-smoking cell under PSI 09/2007, but our findings suggest that being in a non-smoking cell does not necessarily offer protection against SHS, especially for those on wings with closed narrow corridors. Staff members are also able to opt to work in smoke-free areas of the prison, but such opportunities are relatively rare, resulting in significant exposure for many staff. SHS exposure of pregnant women is also a significant potential hazard (12) for both prisoners and staff members; at the time that this study was carried out, pregnant prisoners were not usually transferred to a smoke-free environment until they have given birth. During data collection at the female closed prison there were 18 pregnant prisoners living on main prison locations, though their smoking status was not known.

2.5.5 Conclusions

This is the first study to measure levels of $PM_{2.5}$ as a proxy measure for SHS in English prisons. The study findings provide strong evidence that smoking in prisons in England is a source of high SHS exposure for both staff and prisoners. Thus the current PSI relating to smoking in English prisons requires revision. It is likely that our findings are also representative of exposures in similar prison systems in other countries. It is self-evident that this exposure would be reduced by promoting smoking cessation amongst staff and prisoners, increasing the amount of voluntary smoke-free wings (as the current PSI also authorises) and ultimately prevented by making prisons comprehensively smoke-free.

3 PRISON SMOKING BEHAVIOURS, SECOND-HAND SMOKE EXPOSURE AND ATTITUDES TOWARDS SMOKE-FREE PRISONS: A QUALITATIVE STUDY WITH PRISON STAFF MEMBERS IN ENGLAND

3.1 INTRODUCTION

As concluded in Chapter 2, the current PSI 09/2007 relating to smoking in English prisons does not protect prisoners and staff from harmful levels of SHS and recommendations were made for a revision of the PSI. To explore this further, qualitative one-to-one interviews with prison staff who participated in personal air quality monitoring were conducted. By doing so, the current study will attempt to compliment the quantitative air quality monitoring findings through exploring first hand experiences of prison staff who enforce PSI 09/2007. Work by Bryman on the use of mixed methods research, refers to this as 'illustration'; the use of qualitative data to illustrate quantitative findings, or putting 'meat on the bones' of the quantitative results (174).

3.2 AIM

The aim of this study was to conduct one-to-one qualitative interviews with staff members who took part in the air quality monitoring study outlined in Chapter 2 to explore their perceptions of smoking behaviours in prison, how the current PSI worked (in practice and compliance amongst prisoners and staff), SHS exposure, and attitudes towards the future introduction of smoke-free prisons.

3.2 METHODS

3.2.1 Setting & participant sample

The study collected data through semi-structured interviews conducted with prison staff previously recruited for an air quality monitoring study, outlined in Chapter 2. Due to the geographical distance of the four prisons (studied in Chapter 2) to the researchers' base in Nottingham, telephone interviews were employed. Staff whom the researcher had already come into contact with (and who had consented to carry an air quality monitor) were chosen as they were thought to be more likely to take part. Personal air quality monitoring of staff members involved a SidePak Personal Aerosol Monitor AM510 (TSI Inc, MN, USA) being clipped onto their belt and a short length of Tygon tubing attached to their shirt to sample air from their breathing zone. For more information on the four prison establishments where staff were recruited, see Table 2.1 Prison facility characteristics. All four prisons had a no-smoking policy for staff members within the prison perimeter, though one had designated areas within the prison grounds for electronic cigarette use by staff members. Smoking by prisoners was allowed only in their prison cell, with an exception of one prison which permitted smoking in the exercise yard over lunch periods for those who left the wing all day to work. All of the prisons studied had smoke-free wings which included smoke-free cells.

An opportunistic sample of 22 prison staff took part in the personal air quality monitoring; 21 were prison officers and one a healthcare assistant. All worked on wings where smoking was permitted, and had prisoner contact. Between two and six months after completing the personal monitoring, 21 of the 22 staff members studied (one staff member had ceased employment and had no forwarding address) were emailed by their prison

Governor to introduce the qualitative interview study, provide brief information on what the study involved, and to confirm that permission was granted for these staff members to participate in the interview during their working hours. Contact details of the researcher (LJ) were provided for participants to register interest in taking part, and/or to ask further questions. Those who did so were sent (by post) a further participant information sheet (see, Appendix 7.7) and consent form, and were then contacted by the researcher a few days later. Those who provided written consent (returned by post) were then contacted to arrange a time for a telephone interview, carried out during the participants' working hours. Two further follow-up emails were sent (one by their prison Governor and one by the researcher) to those who did not register any initial interest in taking part.

3.2.2 Data collection

One-to-one semi-structured interviews were conducted by the researcher (LJ). Semi-structured interviews were conducted to enable exploration of pre-defined objectives outlined by the researcher, whilst offering the flexibility to address issues uncovered by the participants which had not been previously considered by the researcher (175). A semi-structured interview guide was devised (See Appendix 7.8), covering structured questions on demographics, the function of their prison, and current job role while loosely guiding the exploration of prisoner and staff smoking practices, current smoking policies and practices, perceived exposure to SHS, thoughts and feelings towards smoke-free prisons and their experience of carrying a SidePak Personal Aerosol Monitor for a duration of their working shift. The utilisation of predominantly open-ended questions allowed the researcher to diverge and pursue avenues of interest when these arose (175, 176). Probes were used where necessary to amplify or expand upon interesting responses from participants.

Participants were informed that transcripts would be anonymised, treated confidentially and that they were free to withdraw at any point during the interview if they so wished. Interviews were digitally audio-recorded and on average lasted 33 minutes (range 16 - 43 minutes). After the interview was completed, staff members were asked if they would like some feedback on their air quality dataset, if so, the researcher discussed their $PM_{2.5}$ exposure and explained the overall research findings.

3.2.3 Data analysis

Participants kept their unique assigned code from the original air quality monitoring study (for example, W306). Interviews were transcribed verbatim by the researcher (LJ) removing any identifiers and checked by the researcher several times after transcription to ensure accuracy. Thematic analysis was applied to the data, as advocated by Braun and Clarke (177). This method is widely used for identifying, analysing and reporting patterns (or themes) within qualitative data (177). It has been used for this study in order to report meaning, experiences, and reality of participants and benefits from not being related to a particular philosophical worldview (178).

A mixed inductive and deductive approach was used to analyse the data, resulting in emerging themes being 'data driven' and not being forced into any pre-existing coding frameworks that the researchers may have had (177). Themes were also identified at a latent level as interpretation of the transcripts was required, therefore the analysis and themes produced are not just descriptive but theorised (177). In line with the analysis stages outlined by Braun and Clarke (177) the interviewer (LJ) and an academic supervisor (ER) firstly familiarised themselves with the data and then analysed the transcripts independently, noting emergent themes and sub-themes. This guided the development of

preliminary codes and an appropriate codebook. These themes were then reviewed to see if extracts represented them appropriately, leading to clarification of the specific nature of a theme and development of theme names and descriptions. These hierarchies were then discussed between the interviewer and academic supervisor, thus providing investigator triangulation (179). This resulted in a final codebook (see Appendix 7.9 for the final staff interview codebook). NVivo 11 (QSR International Ltd, Melbourne, Australia) was used to manage extracts from the transcripts according to the final codebook to ensure they reflected the overall views of the participants.

3.3 RESULTS

Recruitment and interviews were carried out between February and July 2015. Of the 21 prison staff contacted, nine expressed interest in participating, and eight prison officers successfully completed an interview. When comparing the eight who were interviewed with the 14 who were not, the distributions of gender, smoking status and duration of personal air quality monitoring were all similar (males 62.5% and 68.5%; smokers 12.5% and 18.2%; duration wearing monitor = 4.22 hours and 4.18 hours respectively). However, the arithmetic mean $PM_{2.5}$ exposure during personal air quality monitoring was different (36.58 μg/m³ for participants and 23.51 μg/m³ for non-participants). For further details of individual datasets for those who did and did not complete an interview, see Appendix 7.6. All participants were residential prison officers, and they estimated that they spent between 60-95% of their working shift in direct contact with prisoners. Two individuals were interviewed from each of the four establishments. Full demographic data for those interviewed is presented in Table 3.1.

Table 3.1 Interview participant characteristics

	n
Gender	
Male	5
Female	3
Mean age	43
(range)	(25-61)
Smoking Status	
Smoker	1
Ex/non-smoker	7
Prison employed at	
HMP Eastwood Park	2
HMP Erlestoke	2
HMP Exeter	2
HMP Holme House	2
Mean number of years working for the prison service	9.5
(range)	(4-22)

Three core themes emerged from the analysis: current smoking policies and practices; SHS in prison: knowledge, exposure and protection; and smoke-free prisons: information acquired, attitudes and ideas. In the subsequent paragraphs, verbatim quotes are used to illustrate staff member's thoughts and perspectives, alongside their gender, age, prison establishment and unique code.

Current smoking policies and practices

Staff members estimated that between 70-90% of prisoners they worked with were smokers. Several spoke about prisoner's high level of tobacco dependency, and how prisoners used smoking as a form of stress relief or coping mechanism. Examples of prisoner's desperation for tobacco were given to demonstrate their dependence. Two staff members described how colleagues would use tobacco as a bargaining tool to calm prisoners down.

> *'Like a crutch, obviously, addicted to nicotine, it's an addiction isn't it, so but obviously if they are ever stressed out the first thing they do is have a smoke, it's a big part of their world, smoking.'* ***Female, 54, HMP Holme House (H305)***

> *'Even now on a Tuesday and Wednesday all they keep saying to us, 'oh I'm desperate, I'm desperate, I'm gagging', and then they start on the tea bags cos they think its gona help and aggressive and shout and sometimes you have to put them back in their rooms, sometimes you have to restrain them, it's just because they can't get their nicotine fix.'* ***Male, 45, HMP Eastwood Park (W306)***

> *'Cigarettes were often used as a bargaining tool from staff, you know, that kinda, 'calm yourself down, have a cigarette, you know, we can talk this through, you know, here you go' and this would calm the person down to enable them to talk things through a bit better and without that it does make things more difficult.'*
>
> ***Female, 39, HMP Erlestoke (R302)***

Alongside high levels of tobacco dependency, it was widely accepted that prisoners traded in tobacco, and that both of these factors lead to debt and bullying amongst prisoners.

> *'It [tobacco] can lead to bullying, people will stock pile tobacco, it's essentially money, you can buy stuff with it, so people will stock pile it, what you find when you're doing cell searches, people might have accumulated 20, 30, 40 pouches of the stuff which they can trade, those people are then targets to be robbed, that tobacco will be stolen which then causes all sorts of issues, more vulnerable people who do smoke will have their tobacco stolen off them, taken out their pockets sometimes, taken out of their mouth even I've seen.'* ***Male, 35, HMP Erlestoke (R303)***

All staff members outlined how the current smoking policy states that inmates are only allowed to smoke in their cell, a few mentioned that the policy extends to the outside exercise yard. One prisons had a voluntary non-smoking spur on one of its wings and another had a non-smoking mother and baby unit to comply with the current prison smoking policy. Additionally, some participants described how the PSI relating to smoking in prison states that prisoners should have their door closed whilst smoking in their cell. However this was often flouted by prisoners, staff said day-to-day this was impractical as it was almost impossible for them to enforce.

> *'Nah I think it's one of those things where in an ideal world the doors should be shut but the practicalities of maintaining that just, they just don't exist, so no the doors quite often will be open...'.****Male, 61, HMP Exeter (X303)***

More generally, staff members acknowledged that regardless of the current prison smoking policy, prisoners still smoked throughout different areas of the prison and cell

doors that this was impossible for them to control and police. Staff reported that prisoners' trading in tobacco (and the debt and bullying associated with it) alongside attempts to enforce the current smoking policy (for example, closing doors when prisoners are smoking in their cell and attempting to prevent smoking elsewhere) all resulted in an increase in work load.

> *'When you see people smoking out and about it just becomes an impossible task because if you don't know somebodies name you've got 500 odd prisoners and someone is walking around smoking how do you challenge that, it is difficult to manage.'* ***Female, 39, HMP Erlestoke (R302)***

Electronic cigarettes had recently become available for purchase through the prisons canteen supplier, but most staff had not yet witnessed them being used. In terms of smoking cessation services available for prisoners, staff members stated they would refer individuals to healthcare services where they could access them. All participants were fully aware of current PSI which included information on where staff members could smoke at their establishment, which was that they were permitted to smoke only during their break times, outside the perimeter of the prison, and either 10 yards away from the prison gate or under a designated smoking shelter.

<u>Second-hand smoke in prison: knowledge, exposure and protection</u>

Staff members could describe what SHS was and were aware of the harms associated with exposure to it, and particularly the respiratory health effects. Two staff members spoke about how prison establishments were the last public work place in the UK where employees were still exposed to SHS. Staff identified different times or areas when their exposure to SHS was high; on wings with a large number of prisoners, wings with poor

ventilation, during winter months, at prisoner's association time, after tobacco delivery from the canteen provider, during the weekends, whilst preforming cell searches and prisoner unlock.

> *'On a canteen day, on a Thursday, it would be higher because everyone is smoking, but because they are only allowed to smoke in their rooms the, where our office is and the surrounding areas is not that bad, it is not that bad at all, it's when you go actually onto the landings you can smell it, I mean when you go in their rooms that the worst possible place.'* ***Male, 45, HMP Eastwood Park (W306)***

It was clear to staff that smoke was escaping from prisoners' cells and moving onto the wing landings, even during lock-up hours (when all prisoners are locked behind their cell doors). A few staff members described a haze or plume of smoke being visible on the wing landings.

> *'Particularly in the evening when prisoners are locked up, you can quite clearly see that the landing air is blue and you come home stinking of it. And yet all prisoners are locked away and all doors are closed, there is still a significant amount of smoke on the landings.'* ***Male, 35, HMP Erlestoke (R303)***

> *'Because of the way the wing is set up and way that the sun shines you do see a lot of the time, you do see that constant haze of smoke actually on the landing…..yeah so I was sitting on house block the other tea time, on association and just down the landing you could visibility see the smoke hanging about the wing.'* ***Male, 55, HMP Holme House (H305)***

Staff knew they were exposed to SHS at work as they could often smell it on their clothes, which was particularly noticeable when they left the establishment. One staff member felt the exposure to SHS at work had a detrimental impact on an existing respiratory condition; others acknowledged that although they felt no physical impact now that was not to say the exposure would not manifest as a negative health outcome in the future.

> *'For me, as a non-smoker, I think yes, cos I can smell it almost when I get in my car I suppose when I'm away from the establishment or even when I'm taking my uniform off and putting it in the wash basket, I can smell it then, and I think 'Oh that smells really…', and my hair actually, when I wash my hair, I know that sounds silly.'*
>
> ***Female, 28, HMP Eastwood Park (W308)***

> *'I don't know in the long term whether it (SHS exposure) may have, but where my health is now I don't think it's had any effect on me….It's not to say 10 years down the line, 'well that's because you were working in an environment that was surrounded by smoke for 30 old years.'* ***Male, 25, HMP Exeter (X302)***

Most prison officers said they had heard of a policy designed to protect staff members from entering a smoke-filled cell. Although there was some inconsistency in their reports of what this policy entailed, the main premise was that prisoners had to extinguish their cigarettes and ventilate the cell by opening the window and door for 10-30 minutes before a member of staff entered the cell. Staff were quick to point out that due to the nature of their job, this policy was unworkable in practice. Two members of staff said they would deliberately try to limit their breathing on entering a smoke-filled cell. When asked about strategies NOMS could employ to protect staff members from SHS, the majority of staff said this was only really possible by bringing in a complete smoking ban.

'Just like the other day where we had a situation where by, a prisoner had made threats to assault a member of staff, using the letter of the law, cells should be vented 30 minutes prior to you going in there, we had to go into that cell and we had to remove that prisoner off the unit so you are going into, they had both been smoking in there, so, I had to go in, we had to get his kit packed and everything and move him off to the segregation unit, like I say, sometimes its nots just not feasible to wait 30 minutes and that you know so there are times like that, whereby you've got to go into that smokey environment.' ***Male, 55, HMP Holme House (H305****)*

'…because you have to go into cells, you can ask the prisoners to stop smoking but it is a request, they can be smoking in front of you and often are and I, it might sound quite melodramatic but I do struggle, I find myself deliberately shortening my breath so I don't breathe it in or sort of limiting my exposure to it but, I do find myself quite resentful to the fact that, I'm being exposed to it.' ***Male, 35, HMP Erlestoke (R303)***

'No I think what they [NOMS] are trying to do is to go into non-smoking prisons and go down those lines which is probably the ultimate way of dealing with those problems, there's no tobacco there in the first place then there is not a problem with passive smoking.' ***Male, 25, HMP Exeter (X302)***

Staff said they had taken part in the air quality monitoring as they thought it would be interesting and informative to other officers to find out the level of SHS exposure they were exposed to during different tasks during a working shift. Two staff members mentioned that the findings could be used as evidence to support the move towards smoke-free prisons in the future.

'It was just so that they could tell, obviously find out the amount of smoke that we were obviously coming across in the core day to day duties.' ***Female, 54, HMP Holme House (H304)***

'I thought it was to assess the air quality that we were being exposed to on a daily basis, to work this out, up and down the country, so that it can be taken forward to see if there was any evidence to support, removing smoking from here altogether as aren't we one of the only places, we are the only place left in the country where people are allowed to smoke, in a public building...' ***Female, 39, HMP Erlestoke (R302)***

Officers found having a SidePak monitor clipped to their belt during a few hours of a shift had little impact on the officers physically, and that they were able to complete their usual work tasks. However it was clear that wearing a monitor did attract prisoner's attention and questions; with some prisoner responses more favourable than others.

'Well I found wearing it, it wasn't that much of a problem, obviously you knew it was there and all that and you knew the box was on your side and all, but it wasn't, it wasn't restrictive or anything.' ***Male, 55, HMP Holme House (H305)***

'…a lot of the women had a lot of questions about what it was and why I was wearing it, there was quite a lot of joking with the prisoners, about 'oh no, you're wearing that so they can stop us smoking' but nothing nasty or malicious just joking around really.' ***Female, 28, HMP Eastwood Park (W308)***

'I got a lot of abuse….Like oh, 'what the F you wearing that, you know you lot you're causing problems, you're gona have riots on your hands, the blood will be on your hands' sort of thing, that attitude from the prisoners.' ***Female, 39, HMP Erlestoke (R302)***

Smoke-free prisons: information acquired, attitudes and ideas

Staff members said over the last couple of years they had heard (through various sources, Governors, colleagues and the media) conflicting announcements over when prisons in England and Wales would go completely smoke-free.

'I know, I have read, they [NOMS] are thinking of going smoke-free, then they put it back and they changed their minds and so to be honest I don't really know which direction they are going.' ***Male, 45, HMP Eastwood Park (W306)***

They thought the introduction of electronic cigarettes was an initial step towards going smoke-free and were under the impression the implementation would start with a small number of prisons piloting the policy first. The delays that had occurred in relation to going smoke-free were attributed to an unstable prisoner population, staff shortages and changes in the Incentive and Earned Privilege (IEP) scheme. There was a consensus that going smoke-free would lead to a healthier, cleaner environment for all those who live and work in prisons. A few also mentioned that going smoke-free would remove tobacco as a form of currency in prison, which could impact on lower levels of trading and bullying. However, participants also reported that tobacco would be replaced with another tradable item.

'Well health for everyone to begin with, but like I say removing that currency, I mean a great deal of problem, even ones that you probably wouldn't think come from, smoking or smoking related, whether it's being used as a currency, or used for bullying, or leverage, or manipulation or whatever it might be, take that away, and, you know, this job would be a lot easier for everyone I think, plus you haven't got the, I duno how to phase it, you haven't got the worry I suppose of walking through the landing when it's full of smoke.' ***Male, 35, HMP Erlestoke (R303)***

Staff spoke about a number of potential negative outcomes arising from a smoke-free policy, including: riots, increases in disorder, aggression and self-harm, tobacco smuggling and trading, and prisoners becoming more stressed and unable to cope.

'I think as much as a non-smoker and I advocate not smoking, I do think it will have repercussions on our population, like mass repercussions, but I think tobacco might become, a bit more valuable in terms of drug trading, I think people will be smuggling tobacco in potentially as well and I think it could cause a bit of uproar like it has, or like it's been suggested it might do, but at the same time I think if its managed….' ***Female, 28, HMP Eastwood Park (W308)***

Although these negative outcomes were highlighted, the majority of staff members wanted the prison service to go smoke-free, though acknowledged that this would not be an easy task to undertake. Staff were confident that they could implement a successful smoke-free policy so long as some of the following strategies were taken on board: planning at individual establishment level, a three to six month lead in time, having a publicised smoke-free date, limiting the sale of tobacco before the smoke-free date, ensuring that prisoners had access to smoking cessation services and a range of different

(and free of charge) NRT products, and involving the whole establishment with the move (for example, through wellbeing days).

> *'…..it needs to be a like a long period, like this is going to be happening on this date in 5 months' time or whatever, and then have lots of cessation groups, you know so that everyone can attending them, it's not a case of you know we aren't going to have them another 6 months or something, and to have access to patches and support you know, recruiting people to come in to actually have these support groups like you would have in the community more, and more options, not just patches cos they don't always work for people, you know to have the inhalator, the lozenges…..'.* ***Female, 39, HMP Erlestoke (R302)***

3.4 DISCUSSION

3.4.1 Summary of findings

The findings of this study confirm high smoking prevalence and levels of tobacco dependence amongst the prisoner population in England. Tobacco also functioned as a form of currency, resulting in debt and bullying amongst prisoners. Staff felt the partial smoking restriction outlined in the current PSI were often difficult to police, unworkable in practice, and often ignored by prisoners who smoked in places others than their designated cell and did not close their cell doors whilst smoking. Staff members acknowledged that this left them open to SHS exposure; however they also confirmed that even during lock-up periods (when all prisoners are locked behind their cell doors) SHS levels on the wing were still high, and that on occasions the smoke was visible. Staff felt

exposed to SHS whilst at work (the smell of tobacco on their clothes verified this) and could highlight where and when they felt exposure was highest; for example, at prisoner's association time, after tobacco delivery from the canteen provider, during the weekends, and whilst preforming cell searches. Staff recognised the harms SHS could have on their health and proposed that a smoke-free prison policy would be the only way to truly protect staff from this exposure; the majority those interviewed supported such a policy. Staff interviewed had heard (from numerous sources) that HM Prison Service were considering piloting smoke-free in a small number of prisons. They recognised that a smoke-free policy would be healthier and lead to a cleaner environment, but also that it could result in an increase in trading and bullying, aggression and self-harm. Staff came up with several suggestions regarding how a smoke-free policy could be safely implemented.

3.4.2 Strengths and limitations

The study was conducted in four English prison service establishments in a small sample of self-selected participants. The sample was taken from those who had participated in the air quality monitoring study (outlined in Chapter 2, 22 participants) and although the sample characteristics of the participants who volunteered (8 staff members) to take part in an interview were largely the same as those who did not (14 participants), it is not known whether the demographics of air quality monitoring participants were typical of all the staff members from the four prisons. The majority of interview participants were non-smokers, so they may have been biased towards the introduction of a smoke-free policy. Recorded concentrations of $PM_{2.5}$ were slightly higher in the group of participants that consented to take part in an interview compared to those who did not, so the responses reported in this chapter may have been driven by concerns arising from these higher levels of SHS exposure. Staff members were recruited from four prisons in the South-West of

England, therefore views from this small sample of eight participants may not be generalizable and caution should be applied when applying these findings to the rest of the English prison estate. Due to low recruitment figures, an application to offer staff an incentive for taking part was submitted to the NOMS ethics committee: however this was declined, on the grounds that staff members are expected to assist with research as part of their commitment to NOMS. Soon after the interviews were completed (July 2015), NOMS announced that four prisons in the South-West of England will go completely smoke-free between April and May 2016 (162); and two of the prisons involved in this study were among the four to pilot the new policy (HMP Exeter and HMP Erlestoke). The officers' opinions on how best to move towards a smoke-free prison will therefore be particularly pertinent to the future policy implementation in these prisons.

3.4.3 Interpretation in context of other studies

The high perceived levels of smoking prevalence (70-90%) and tobacco dependence reported by participants in this study are consistent with the existing literature in the UK and elsewhere (98, 109, 110, 113, 118, 121, 147). Use of tobacco as a coping mechanism and currency for those incarcerated has also been widely reported in previous work (110, 128, 129, 131). As outlined in Chapter 2 (171), air quality monitoring data collected from staff members gave an insight into locations where exposure to $PM_{2.5}$ were high, and these included the wing landings, at the doorway and inside a prisoner's cell and after prisoners had received their tobacco from the canteen provider. Confirmation of these findings were outlined during staff interviews, alongside more detailed accounts of times of the day/week/year or areas of the prison when levels of SHS were thought to be high, not captured in the earlier study (171) (for example, wings with large populations, those with poor ventilation systems and during winter months). Similar to Quebec's experience of

introducing a partial policy on smoking in prison, staff reported prisoners ignoring these restrictions by smoking in non-designated smoking areas (147).

Fears relating to a future smoke-free prison policy were outlined by all staff members interviewed, and related to an increase in disorder, aggression, smuggling and prisoner stress. Similar concerns have been observed prior to partial and total smoking bans in the Canada, Australia, US, and Switzerland (128, 147, 180, 181). Although these potential concerns were highlighted, participants supported introduction of smoke-free prison policy, and went on to suggest strategies to help ensure successful implementation. These included comprehensive planning, a long lead-in period, clear communication, cessation support and provision of alternative activities. These measures have all been associated with successful implementation of smoke-free policies in prisons in other countries, and in high security NHS mental health services in England (along with clear instruction and guidance for management and comprehensive staff training) (108).

Unlike other studies examining the quality of air in prisons, which have used static locations for air quality monitors (143, 144, 149), the air quality monitoring study (outlined in Chapter 2(171)) gave staff the opportunity to wear a monitor for a duration of their shift. To our knowledge, personal monitoring has never been carried out in a prison environment and therefore no literature of participant experience of wearing a SidePak air quality monitor exists.

Electronic cigarettes had recently been introduced for prisoners to purchase through the prison canteen supplier within the four prisons, although staff thought it was too early to comment on their usage or popularity amongst prisoners during interviews. Guernsey prison is the only other site to also allow prisoners to buy electronic cigarettes, bringing

them in prior to implementing smoke-free policy. However, little is known about their use and how effective they were in the transition to smoke-free in Guernsey. In this study, staff did feel the introduction of electronic cigarettes was a sign that a smoke-free policy was on the horizon and as previously outlined, shortly after interviews were completed, four smoke-free pilot sites were announced in England. Future work to investigate the uptake and usage of electronic cigarettes would be beneficial in light of the smoke-free implementation throughout the rest of the estate in England.

3.4.4 Protection from second-hand smoke under the current prison policy

PSI 09/2007 requires all prison buildings, apart from cells occupied by prisoners over 18 years, to be smoke-free (137). Findings from the air quality monitoring throughout the four establishments show cigarette smoke is often present in other areas of the prison, most notably the landings. Interview data confirms these finding with staff members acknowledging how difficult it was to police smoking in other areas of the prison or that ventilating a cell prior to entering was often unworkable in a prison environment. Staff members clearly felt they were exposed to SHS during their working shift, being able to smell smoke on their clothes and being visible on certain wing landings; officers accepted that in the future this level of exposure could have a detrimental impact on their health. In 2011, the POA wrote to the then Secretary of State for the MOJ arguing that the current PSI 09/2007 does not protect its staff members from SHS, stating that the exposure was 'legally and morally unacceptable' (182). In the same correspondence the POA called for a full review of PSI 09/2007, stating the current policy should be replaced with a complete ban on smoking in prison.

3.4.5 Conclusions

This study confirms and emphasises the findings in Chapter 2, highlighting that the current PSI relating to smoking in English prisons does not go far enough to protect its employees from SHS and therefore requires revision. Staff knew of the health harms associated with SHS exposure and concluded that their current exposure could result in a negative health outcome in the future. Staff thought the only way to prevent SHS exposure in prisons was to implement a comprehensive smoke-free policy. NOMS announced that four prisons in England will go completely smoke-free in 2016, confirming speculation staff members outlined in interviews. Officers felt the successful implementation of a smoke-free policy should have comprehensive planning, a long lead in period, clear communication, cessation support and provision of alternative activities. To maximise the success of the new smoke-free policy in England, NOMS should incorporate these factors into their implementation strategy going forward.

4 AN EVALUATION OF FOUR EARLY ADOPTER PRISONS BEFORE AND AFTER INTRODUCING A COMPREHENSIVE SMOKE-FREE POLICY: PRISONER AND STAFF QUESTIONNAIRE AND FOCUS GROUP STUDY

4.1 INTRODUCTION

In September 2015, in response to research demonstrating high levels of SHS in English prisons (162, 171, 183, 184), NOMS announced the pilot implementation, from March 2016, of a comprehensive smoke-free policy in four prisons in the South-West of England. Findings were also the catalyst for removing pregnant staff members from working on wing landings in England (185). Alongside the four English pilot prisons, it was also announced that smoking in enclosed places in all open prisons (Category D) would be prohibited from October 2015 (thus allowing smoking only in designated outdoor spaces); that closed (Category A-C) prisons would all introduce voluntary smoke-free wings; and that the four prisons in Wales (HMPs Cardiff, Parc, Swansea and Usk/Prescoed) would all become smoke-free early in 2016. A phased approach would be taken in implementing smoke-free throughout the rest of the English service, timings to be decided in light of experience in the early-adopter establishments.

Shortly after the announcement of the four early adopter prisons in England, NOMS set up a regional delivery board to bring together agencies involved in these sites to design the implementation strategy, assess the readiness of each establishment, and establish the roll-out order of implementation of the four prisons. The board met monthly and members

included: Deputy Director of the South-West area, national smoke-free operational lead, national smoke-free prisons equalities assurance manager, Governors from the pilot sites, PHE Commissioner and NHS England Commissioner. Each pilot site nominated a member of staff as their Single Points of Contact (SPOC) who was responsible for the day-to-day implementation within their establishment. Running alongside the national board was a local delivery board, attendees of which included: the national smoke-free operational lead, SPOCs from the four early adopter sites, local health providers responsible for smoking cessation services, and stakeholder representatives (DHL canteen provider, police service, and prison escort and custody services). These meeting addressed issues at establishment level and supported the sharing of best practice amongst the four establishments throughout the implementation period.

The smoke-free dates for each of the four pilot prisons were announced between three and four months before implementation. Communication to prisoners consisted of posters (to advertise the date the prison would go smoke-free, see Appendix 7.10 for examples), information on support available (healthcare cessation services and electronic cigarettes), health improvement messages (see Appendix 7.11 for examples), and prisoner consultation groups (run by the prison SPOCs to discuss any issues or concerns relating to going smoke-free). Communications to staff included information sheets (outlining why the prison was implementing smoke-free, see Appendix 7.12) and a presentation, by each Governor at a full staff meeting, on when and how the prison would implement their smoke-free policy. Alongside this, NOMS also informed stakeholders (courts, police, and prison escort and custody services) of the smoke-free move and provided them with posters to inform offenders in their system of the upcoming policy change.

Before going smoke-free the four prisons estimated the amount of support (NRT, cessation clinics) each site would require (and in turn the financial cost) by examining the proportion of prisoners who were self-reported smokers at reception to prison (and who as a consequence received a 'first night smokers pack' comprising matches and pouch of loose tobacco), and the proportion of prisoners who order tobacco from the canteen provider each week. These measures are likely respectively to over- and under-estimate the true prevalence of smoking. Since tobacco is traded amongst prisoners and functions as a form of currency within prison (128), some prisoners have an incentive to report that they are smokers on reception as this tobacco can then be traded. Conversely, the proportion of prisoners who purchase tobacco may under-estimate smoking prevalence, since some smokers may prefer to obtain tobacco by trading with other prisoners.

Cessation support offered through the local health provider at each prison consisted of eight to ten weeks of cessation clinics (including behavioural support, and free-of-charge NRT patches, lozenges, inhalators and oral strips, or varenicline (trade name, Champix)). Prisoners who wanted cessation support had to sign up through prison healthcare; they would then have an initial consultation to ascertain their eligibility (CO monitors were used to confirm smoking status) and to assess their level of nicotine addiction. Electronic cigarettes (brands; Brio, VIPure, blu Sky, see Appendix 7.13 & 7.15 for lists of available electronic cigarettes and prices pre- and post- smoke-free) were available for prisoners to purchase through the canteen supplier at the time the smoke-free dates were announced. During the implementation period, an article was also placed in the nationwide prison newspaper (Inside Times, see Appendix 7.14 for full article) to dispel concern over the use of electronic cigarettes and give some practical information on how they should be used. NRT (patches, lozenges, inhalators and oral strips) were added to the canteen products list shortly after the smoke-free dates were announced (see Appendix 7.15 for the DHL

canteen sheet from HMP Exeter post- smoke-free policy). Chewing gum is a prohibited item in HM Prison Service so as a form of NRT it was not available through healthcare or from the canteen supplier.

Level one National Centre for Smoking Cessation and Training (NCSCT) cessation training was delivered around three months prior to going smoke-free by PHE to between 50-120 staff (with prisoners contact) in each establishment. The session offered advice to staff on cessation services available to prisoners, stop smoking pharmacotherapy and electronic cigarettes options, and the physical and psychological effect of withdrawing from nicotine along with strategies on how to help prisoners deal with these. To increase the number of cessation clinics available to prisoners in each establishment, an additional three to four healthcare staff were also trained to offer smoking cessation advice at NCSCT Level two, bringing the total number of trained advisors to: HMP Exeter 13, HMP Dartmoor 12 and HMP Channings Wood 11, no data for HMP Erlestoke. Typically prisoners would attend their smoking cessation clinics once a week, either in a one-to-one or group setting, where they would discuss their quit attempt, have a CO reading taken and receive cessation pharmacotherapy (one prison distributed cessation pharmacotherapy during morning medication distribution for all prisoners).

The South-West early adopter sites had staggered smoke-free dates, with one prison going smoke-free on a Monday every two weeks between 11th April and 23rd May 2016 (see Table 4.1 for smoke-free dates). HMP Exeter, the local prison (serving the courts and holding those who were on remand and convicted) which transfers offenders onto the other three regional training prisons (HMPS Dartmoor, Channings Wood and Erlestoke) was the first to go smoke-free; the sequence of the remaining three prisons was based on their level of readiness and ultimately the decision of the Deputy Director of the South-West

area. Tobacco (loose, cigarettes and cigars), rolling paper, and lighters were removed from the canteen list two weeks before the smoke-free date at each establishment, to give prisoners the opportunity to smoke but not replace any remaining tobacco before the implementation date. After the removal of these items prisoners were allowed cigarette lighters on request only, and solely to light incense sticks in line with their faith. Any prisoner found in possession of any smoking paraphernalia after the prison had gone smoke-free were dealt with through the IEP scheme or the adjudication process. HMP Exeter held a celebration day on their smoke-free date, which included extra gym sessions for prisoners, health information displays, PHE staff offering cessation support, free electronic cigarettes and an offender dressed up in a cigarette costume.

According to media reports, the smoke-free announcement was met with opposition from prisoners and staff members, especially because of the high smoking prevalence in prison and that those who smoke argue it is their human right to smoke in the place in which they reside (186, 187). However, high levels of desire to quit (98) and quit rates (131) have been demonstrated in UK prison populations, suggesting that some prisoners, at least, may welcome the introduction of a smoke-free policy. International examples also provides evidence that smoke-free prison policies are achievable and have been hailed as a success (150, 151, 154). However, there is little research from these international examples into the belief, fears or attitudes of prisoners and staff members towards smoke-free polices.

The evaluation of the first four smoke-free prisons in England (covered in Chapters 4 and 5) employed both quantitative and qualitative methods in a pragmatic mixed-methods design. A mixed method approach (using air quality monitoring, questionnaires and focus groups) was chosen as the best way to approach the research aims and objective to comprehensively assess smoke-free policies in English prisons. In 2006, Bryman identified a

number of rationales for designing research which combines both quantitative and qualitative methods (174). The rationale for using a mixed methods design for this evaluation study was to add greater validity through 'triangulation', in order to cross-check results from the quantitative and qualitative findings, and to offer 'completeness' by providing a more comprehensive account of the research area as a whole by using a mix of methods.

4.2 AIM

This study was part of a mixed methods evaluation of the four 2016 smoke-free early adopter sites in England, designed in collaboration with NOMS (Chapter 5 also forms part of this evaluation). The aims of this study were to establish current smoking prevalence amongst prisoners and staff three months before policy implementation; identify perceived problems, concerns and benefits of the prison going tobacco and smoke free; and seek prisoner and staff opinions on how the prison should prepare/implement changes to help with the introduction of a tobacco and smoke-free prison. To then determine how attitudes to smoke-free policy have changed post-policy, the policy impact on staff members and prisoners and to explore views on the implementation and how this could be improved in the future.

4.3 METHODS

4.3.1 Study prisons

Data were collected from four male English Prison Service establishments selected to go smoke-free between April and May 2016 (Table 4.1). The four prisons were clustered in the

South-West of England, and NOMS selected them for reasons including their low transfer rate to other regional areas; being all-male establishments; and having a relatively stable population. HMP Exeter held prisoners on remand or serving sentences, while the other three establishments only held prisoners who had been sentenced. HMP Dartmoor had an 'integrated' regime in which the VP population which made up around 80% of the overall prison population, were mixed with the general prisoner population. The three other prisons had separate VP units which operated on a different regime to the main prisoner units. All four prisons had a non–smoking policy for staff members within the perimeter wall. Before the smoke-free policy was implemented, prisoners were only allowed to smoke in their cell, though smoking still occurred regularly in the exercise yards. The healthcare unit at HMP Exeter was the only designated 'smoke-free' wing with prisoners only being allowed to smoke outside.

Two researchers (LJ & CH) visited each establishment for three or four weekdays (depending on staff escort availability), three months before and three months after the smoke-free implementation date. During each prison visit, researchers collected questionnaire, focus group and air quality data (See Chapter 5). A prison officer was assigned to the researchers during their visits to gain access to all areas of the prison and kept them abreast of any changes within their establishment during the data collection phase.

All four prisons were performing well at the time of data collection and had had no recent incidents reported. The annual performance rating 2015/2016 for all four prisons was '3' out of the highest score of '4', suggesting that they were all meeting the majority of targets set by NOMS: scores are based on levels of prisoner decency, operational effectiveness, reducing re-offending and level of public protection (188).

Table 4.1 Study prisons surveyed, smoke-free and data collection dates

Prison **(prison abbreviation)**	**HMP Exeter** **(EX)**	**HMP Dartmoor** **(DM)**	**HMP Channings Wood** **(CW)**	**HMP Erlestoke** **(ER)**
Category and function*	Male Category B Local	Male Category C Training	Male Category C Training	Male Category C Training
Structural design	Built 1850s Victorian radial design	Built early 1800s Singular wings	Built 1974 Five two story living blocks and quick build wings	Built 1960s Mix of triangular, T-shaped and quick build wings
Number of wings	7	7	9	9˜
Prisoner roll count (pre-policy)	505	634	706	518˜
Employed staff (pre-policy)	355	438	278	210
Pre-smoke-free data collection	19/01/16 – 23/01/16	08/02/16 – 11/02/16	15/02/16 – 18/02/16	29/02/16 – 02/03/16
Smoke-free date	11/04/16	25/04/16	09/05/16	23/05/16
Post-smoke-free data collection	05/07/16 – 08/07/16	18/07/16 – 21/07/16	22/08/16 – 25/08/16	15/08/16 – 17/08/16

˜HMP Erlestoke closed two wings (transferred 140 prisoners) post- smoke-free policy.

*Category B prisons hold prisoners for whom the very highest conditions of security are not necessary but for whom escape must be made very difficult.

*Category C prisons hold prisoners who cannot be trusted in open conditions but who do not have the resources and will to make a determined escape attempt.

*Local prisons serve the courts and receive remand and post-conviction prisoners prior to their allocation to other establishments.

*Training prisons hold sentenced prisoners who tend to be employed in a variety of activities such as prison workshops, gardens and education and in offending behaviour programmes.

4.3.2 Design of resources

4.3.2.1 Questionnaires

Four questionnaires were designed, two for prisoners (one pre- and one post- policy, see Appendix 7.16a and 7.16b) and two for staff members (one pre- and one post- policy, see Appendix 7.17a and 7.17b). All questionnaires were designed to collect structured demographic information, smoking behaviour and views on smoke-free policy at the prison. The questionnaires were based on previous questionnaires used in mental health settings implementing smoke-free policies (155), alongside guidance from the NOMS smoke-free delivery board and academic supervisors. Prisoners and staff members also had the opportunity to write down up to three positive and three negative outcomes of the prison going smoke-free both pre- and post- policy. These questions were added to supplement the focus group data as many staff and prisoners were not able to or did not have the time to attend a focus group. At the request of NOMS Communication Team, four questions were added to both the prisoner and staff questionnaire after the first survey visit to form part of their evaluation into the communication package (for example, notices to prisoners and staff, leaflets, posters) delivered to all four prisons prior to the smoke-free policy. The prisoner post-policy questionnaire at HMP Exeter had included a question on whether prisoners had smoked since the smoke-free policy was introduced, this question was removed from subsequent questionnaires completed at the remaining three prisons as it was deemed too sensitive (prisoners cited concerns over being reprimanded for admitting to flouting the policy, with many leaving it incomplete), even though the researchers had reassured participants that the questionnaires were anonymous and no prison staff had access to the completed surveys. No percentage answers from this question are therefore presented in the results section.

4.3.2.2 Focus groups guides

Four semi-structured focus group guides were developed, two for prisoners (one pre- and one post- policy, see Appendix 7.18) and two for staff members (one pre- and one post-policy, see Appendix 7.19) based on existing literature, themes derived from the researcher's staff member interviews (see Chapter 3) and the current smoke-free position, these were agreed with the research team; one guide for prisoners pre- and post- policy and another for staff members pre- and post- policy. The prisoner and staff member focus group guides covered current smoking practice and behaviours, communication and lead in to smoke-free policy, stop smoking support available, impact of the implementation and success and failures associated with the introduction of smoke-free. The researcher (LJ) used prompts as appropriate to encourage respondents to support the flow of focus group interactions (189).

4.3.3 Data collection

4.3.3.1 Prisoner questionnaire

The same recruitment methods were used to consent prisoners before and after the smoke-free policy. Researchers approached prisoners during education, workshops, library and gym sessions, and on the residential units to explain the purpose of the study and give them an information sheet (see Appendix 7.20a for pre-policy information sheet and Appendix 7.20b for post-policy information sheet). The Care and Separation Unit (CSU) and inpatient healthcare unit were also visited to approach prisoners residing there. Those interested in taking part were given the chance to ask any questions, and written consent was then sought to complete the questionnaire and take part in a focus group if they so wished. Researchers were present while prisoners completed the questionnaire to help

with any literacy problems, answer any queries and to ensure prisoners completed the questionnaire separately. Prisoners who could not communicate in English were excluded.

4.3.3.2 Staff member questionnaire

The same recruitment methods were used to consent staff members before and after the smoke-free policy. Where possible, data collection visits were timed to coincide with a monthly full staff meeting or staff training sessions (for example, first aid and smoking cessation). Researchers were given a time slot during these meetings to distribute information sheets (see Appendix 7.21a for pre-policy information sheet and Appendix 7.21b for post-policy information sheet) explain the purpose of the study and give participants the chance to ask any questions. Questionnaires were distributed to those interested in taking part, and written consent sought to complete the questionnaire and attend a focus group. Researchers also approached staff members who could not attend the full staff meeting whilst completing air quality monitoring throughout the prison. Researchers gave staff members a brief description of the study along with an information sheet and gave them the opportunity to ask any questions. If staff members wanted to take part they were asked to provide written consent and were then given a questionnaire to complete in their own time. A sealed box was placed at the prison gate for staff to hand in questionnaires once completed. The box containing completed questionnaires was forwarded on to the research team a week after their visit.

4.3.3.3 Prisoner and staff member focus groups

A focus group approach was taken, with separate groups of prisoners and staff members who lived and worked at each of the prisons surveyed. A focus group is a style of group interview whereby the data obtained arises from the interaction and discourse generated by a group discussion (189). Discussion topics are supplied by the researcher who acts as a

'facilitator' for the discussion. Under these conditions, the facilitator undertakes a dominant role in helping the discussion flow rather than interviewing (189).

The focus group technique was well suited to the aims of this study (to elicit opinion and feelings towards a pilot smoke-free policy) and was used for a number of reasons. Firstly, a focus group can provide a safe environment for participants to share their thoughts and feelings without fear of criticism (190), alongside being respectful and non-condescending toward those participating (191). Not only do co-participants help each other to overcome embarrassment but they can also provide mutual support when expressing feelings which are common to their group but which also might be deviant (192) (for example, drug use or smoking practices post-policy). Safety in numbers made some people more likely to consent to participate in a focus group, especially amongst prisoner groups, ('I wouldn't have done this on my own') and being with other people who share similar experiences encouraged participation. Secondly, the facilitator is less in control of a focus group (compared to an interviewer in a one-to-one interview) and as the participants' interaction amongst themselves replaces their interaction with the facilitator, this leads to a greater emphasis on the participant's point of view (189, 193). This potential shift in the balance of power between the researcher and the people who were directly affected by the smoke-free policy was crucial in this study as it meant exploring and understanding issues from prisoner and staff perspectives. Thirdly, pre-existing groups of prisoners and staff members were used; clusters of people who already knew each other through living or working together. The fact that research participants already knew each other had the additional advantage that friends and colleagues could relate each other's comments to actual incidents in their shared daily lives (192). They often challenged each other on contradictions between what they believed and how they actually behaved. Participants in these pre-existing groups were sometimes surprised to discover a difference of opinion in

relation to the policy change, the facilitator could then explore these disagreements further. Finally, they were an effective use of the limited amount of time the researchers had to collect in-depth data from a wide range of participants (190).

The same researcher (LJ) facilitated both prisoner and staff member focus groups, which were held separately in a private room. Prisoners were recruited purposively from pre-existing groups, predominantly from those who attended industries, workshops and education. Staff members were also recruited by purposive sampling to ensure representation of a range of job roles (their job role or department being their pre-existing group). Unfortunately there was no opportunity to pilot the focus group guides prior to data collection, therefore the first few focus groups held with prisoners and staff members at HMP Exeter served as pilots. No changes were made to the focus group guides for prisoners or staff members as a result of these pilots, the transcripts from these groups were therefore included in the analysis. All participants were informed that transcripts would be anonymised, treated confidentially and that they were free to withdraw at any point during the discussion, if they so wished. All focus group discussions were digitally audio-recorded.

4.3.4 Data analysis

4.3.4.1 Questionnaires

Survey responses were coded, entered, and analysed using IBM SPSS (version 22). Descriptive analysis was performed for each prison and collated across all four prisons to obtain means, ranges and proportions. Participants were categorised for analysis into smokers and non-smokers/ex-smokers. Positive and negative comments were entered into Microsoft Excel alongside the prison and questionnaire unique identification code.

Quantitative and qualitative content analysis was used to collate positive and negative written comments and to describe the nature of these comments from prisoners and staff members' pre- and post- policy. Content analysis were used as it enables the researcher to establish a set of categories (in this case, themes derived from responses to a question) and then count the number of instances that fall into this category (194). The number of participant respondents and overall positive and negative comments from prisoners and staff members were collated. Any repeated comments by one participant were removed. One researcher (LJ) read all positive comments from prisoners to explore the nature of the comments, and preliminary codes were derived from grouping similar responses by colour in Microsoft Excel. The same was repeated with staff member positive comments. Preliminary codes were very similar for prisoners and staff members, something the researchers had not anticipated. The codes were therefore revised following greater familiarity with all the positive comments from prisoners and staff members. Data were then collated into groups with similar content and distinct themes were established. To minimise researcher subjectivity in coding and to check the themes, a research supervisor (RM) independently validated 20% of the written comments. Disagreements in coding were discussed to ensure boundaries of each theme were transparent, which lead to the final themes. The same steps were followed for prisoners and staff member negative comments. The number of positive and negative comments under each theme were calculated.

4.3.4.2 Focus groups

One of the researchers (LJ) along with an external specialist transcription company transcribed focus group recordings verbatim (LJ transcribed 29, external company transcribed four). Transcripts were checked for accuracy and any potential identifiers of individual participants removed by the research (LJ). Transcripts were assigned a unique

code that identified the prison, whether it was a prisoner or staff member group, and whether it was conducted before or after going smoke-free. Data were analysed using the framework approach (195), as it offers a pragmatic approach for real-world investigations (196) and is geared towards generating policy and practice-oriented findings (197). Framework analysis provided a systematic approach to the data (196) and also allowed between- and within- case analysis (197), this was essential due to volume of data collected (241 participants attended a focus group, resulting in 33 transcripts to analyse) and the distinction between different participants (prisoners or staff members), time points (pre- or post- smoke-free policy) and pilot prisons. Framework analysis also allows the data to be easily accessible to others so that the analysis process can be viewed and judged (in this case by the researchers' supervisor) to show how decisions were made (184). This investigator triangulation enhanced transparency and improved the independent verification of the themes during analysis (179).

In line with the framework approach outlined by Ritchie and colleagues (195, 197), firstly researchers (LJ and RM) familiarised themselves with the data, with LJ reading all and RM reading half of the focus group transcripts independently. Initial themes and sub-themes were then identified and discussed amongst the two researchers. This enabled the researchers to ascertain whether there were any contradictory cases or any within- or between- group differences (according to prison, before or after the smoke-free policy, or between prisoners and staff members). Although some differences were identified (between pre- and post-policy and amongst prisoners and staff) codes from all prisoner and staff focus groups throughout the four prisons were largely similar. Data were therefore analysed together. Themes and sub-themes were discussed by LJ and RM (investigator triangulation), and used to produce an initial analytical framework (See Appendix 7.22) which was then applied to the data and refined. A defining feature of

framework analysis is the matrix output: rows (transcript), columns (themes and sub-themes) and 'cells' of summarised data, providing a structure into which the researcher can systematically reduce the data (198); this was completed using NVivo 11 software (QSR International Ltd, Melbourne, Australia). Researchers finally discussed each matrix produced, this allowed mapping and interpretation to explore any relationships between themes and sub-themes. Data presented reflect the overall views of the prisoners and staff members from all four prisons, before and after the introduction of the smoke-free policy.

4.4 RESULTS

4.4.1 Prisoner questionnaire

One thousand and eight offenders were approached to complete a questionnaire across the four prisons, comprising of 551 pre- and 457 post-policy. After discarding seven questionnaires (due to disengagement in completion) 432 pre- and 344 post- policy complete questionnaires were available for analysis across the four early adopter prisons.

Participants represented 18.3% pre- and 14.5% post- of the prisoner roll count across the four establishments. Both pre- and post- smoke-free policy, HMP Dartmoor had the highest number of questionnaire responses (pre: 35.4% and post: 26.9% of eligible prisoners) and HMP Exeter the lowest (pre: 16.4% and post: 10.5% of eligible prisoners).

4.4.1.1 Prisoner characteristics

It is not known how many prisoners surveyed pre-policy were surveyed again post-policy. Ethics committees (Nottingham University Medical School and NOMS NRC) did not allow identification of participants therefore linking of responses pre- to post- was not possible.

The local prison, HMP Exeter, has a high turn-over (on average 80 prisoners per month) so within the six months from pre- to post- surveys the majority of prisoners will have been transferred or released. Prisoners recruited at the three other prisons were mainly recruited from education, workshops and industries which ordinarily have a turnover of prisoners over a period of 1-3 months.

Surveyed prisoner characteristics were largely the same pre-and post- policy; mean age was 40 years, the majority were from a White British background and around 85% spent most of the daytime period (Monday-Friday 9am-5pm) out of their cell. Forty percent of those surveyed at HMP Exeter were on remand however all prisoners surveyed at HMPS Dartmoor, Channings Wood, and Erlestoke were sentenced. Prisoners spent less time out of their cell at HMP Exeter, this is typical for a local prison as they offer less education, workshops and OBP than training prisons. Further details of prisoner characteristics pre- and post- smoke-free policy can be found in Table 4.2. Of the 344 prisoners surveyed post-smoke-free, 71.3% stated that they had been living at their current establishment prior to the smoke-free implementation date.

Table 4.2 Prisoner characteristics pre- and post- smoke-free policy

	3 months pre-smoke-free					3 months post-smoke-free				
Prison ID^	**All data**	**EX**	**DM**	**CW**	**ER**	**All data**	**EX**	**DM**	**CW**	**ER**
Prisoners Surveyed										
	432	83	155	107	87	344	53	118	93	80
Age										
Mean	39.55	33.4	43.35	39.35	38.55	39.56	37.64	40.73	39	39.89
Range	18-86	18-77	22-86	22-78	22-64	19-72	19-69	22-72	21-65	22-65
	(n= 409)	*(n=72)*	*(n=150)*	*(n=103)*	*(n=84)*	*(n=335)*	*(n=53)*	*(n=115)*	*(n=91)*	*(n=76)*
Ethnicity										
White - British	85.4%	91.4%	87.7%	86.0%	75.0%	87.4%	81.1%	92.4%	94.6%	75.6%
White - Irish	1.4%	1.2%	1.9%	1.9%	1.2%	1.8%	5.7%	0.8%	0%	2.6%
Other white background	2.3%	1.2%	3.9%	1.9%	1.2%	3.8%	5.7%	4.3%	1.1%	5.1%
Mixed – white and black Caribbean	1.4%	0%	1.9%	1.9%	3.6%	1.2%	1.9%	4.2%	1.1%	1.3%
Mixed – white and Asian	0.2%	0%	0.6%	0%	0%	0.6%	1.9%	0%	0%	1.3%
Other mixed background	1.2%	1.2%	0%	0%	1.2%	0.6%	0%	0%	0%	2.6%
Asian or Asian British – Indian	0.9%	0%	0.6%	0.9%	2.4%	0.9%	1.9%	0.8%	0%	1.3%
Asian or Asian British – Pakistani	0.5%	0%	0%	0.9%	1.2%	0.3%	0%	0.8%	0%	0%
Asian or Asian British – Bangladeshi	1.2%	1.2%	1.3%	0%	2.4%	0%	0%	0%	0%	0%
Other Asian background	0%	0%	0%	0%	0%	0.6%	1.9%	0%	0%	1.3%
Black or Black British – Caribbean	2.6%	1.2%	1.3%	0.9%	8.3%	1.8%	0%	0%	0%	7.7%
Black or Black British – African	2.6%	2.5%	1.9%	0%	3.6%	0.6%	0%	0%	1.1%	1.3%
Other Black background	0.5%	0%	0.6%	0.9%	0%	0%	0%	0%	0%	0%
Chinese	0%	0%	0%	0%	0%	0.3%	0%	0%	1.1%	0%
Other	0.5%	0%	0%	1.9%	0%	0.3%	0%	0%	1.1%	0%
	(n= 426)	*(n= 81)*	*(n=154)*	*(n=107)*	*(n=84)*	*(n=341)*	*(n=53)*	*(n=118)*	*(n=92)*	*(n=78)*
Sentenced										
	92.3%	59.8%	100%	100%	100%	97.1%	83%	100%	100%	100%
	(n= 430)	*(n=82)*	*(n=155)*	*(n=107)*	*(n=87)*	*(n=344)*	*(n=53)*	*(n=118)*	*(n=93)*	*(n=80)*

Current length of stay										
0-3 months	*13.9%*	*52.1%*	*1.9%*	*13%*	*0%*	10.5%	39.6%	4.3%	10.8%	0%
3-6 months	11.4%	14.6%	11.6%	16.8%	1.2%	12.5%	30.2%	8.5%	17.2%	2.5%
6 months – 1 year	19.3%	17.1%	27.1%	19.6%	7.0%	15.5%	17%	19.7%	21.5%	1.3%
1-3 years	28.6%	11.0%	40.6%	25.2%	27.9%	27.7%	7.5%	41%	26.9%	22.5%
3-10 years	19.3%	4.9%	15.5%	21.5%	37.2%	23.3%	3.8%	18.8%	21.5%	45%
Over 10 years	7.4%	0%	3.2%	3.7%	26.7%	10.2%	1.9%	7.7%	2.2%	28.8%
	(n=430)	*(n=82)*	*(n=155)*	*(n=107)*	*(n=87)*	*(n=343)*	*(n=53)*	*(n=117)*	*(n=93)*	*(n=80)*
Been on an ACCT* document at the prison in the last year										
Yes	15.3%	25.9%	15.2%	11.2%	10.3%	17.8%	31.4%	13.8%	14.1%	19%
	(n=426)	*(n=81)*	*(n=151)*	*(n=107)*	*(n=87)*	*(n=338)*	*(n=51)*	*(n=116)*	*(n=92)*	*(n=79)*
Spend most of the day time out of their cell										
Yes	85.0%	57.8%	88.3%	95.3%	92.9%	87.2%	22.6%	94.9%	88.2%	81.3%
	(n=428)	*(n=83)*	*(n=154)*	*(n=106)*	*(n=85)*	*(n=344)*	*(n=53)*	*(n=118)*	*(n=93)*	*(n=80)*

^ Prisons abbreviation. EX = HMP Exeter, DM = HMP Dartmoor, CW = HMP Channings Wood, ER = HMP Erlestoke.

'n' refers to the number of participant who responded to each question. Percentage answers are based on those who answered each question only.

*Assessment Care in Custody and Teamwork (ACCT) document. An ACCT document is a care planning system initiated in response to concern that an individual in prison is at risk of self-harm or suicide.

4.4.1.2 Smoking prevalence, behaviours and attitudes about quitting from self-reported smokers

Prisoners were asked if they were smokers in the pre-implementation survey, and retrospectively if they were smokers at the time the smoke-free policy was announced in the post-implementation survey. Table 4.3 shows prisoners' smoking status and perceptions of those who reported being a smoker pre-and post- policy relating to quitting, cessation support and abstinence in the future. Pre-policy, 65.3% were self-reported smokers, and post-policy, 64.6% reported they were a smoker pre- smoke-free implementation with HMP Exeter recording the highest smoking prevalence. HMP Exeter had the highest self-reported smoking prevalence out of the four prisons sampled. Pre-policy, prisoners who smoked consumed on average 17 hand-rolled cigarettes per day, and over half smoked their first cigarette within the first five minutes of waking in the morning. Nearly three quarters of smokers had smoked for over 11 years. The proportion stating that they had ever purchased an electronic cigarette from the canteen sheet doubled post-policy, from 21.9% pre to 41.5% post, when nearly a third of smokers stated they were a regular electronic cigarette user. For HMP Exeter, this proportion was even higher, with 55.9% of prisoners reporting regularly using an electronic cigarette.

Of the self-reported smokers, 38.5% reported that they wanted to stop smoking pre-policy, compared to 23.9% who reported retrospectively, post-policy, that they had wanted to stop. Pre-policy, 60.1% reported that they would like to receive some help (such as behavioural support) in the run up to the smoke-free policy. Post-policy, 59.1% reported that they had used a form of NRT (for example, patch, lozenge, and inhalator) to help them to cut down or quit, while 34.4% had used an electronic cigarette (not mutually exclusive categories) and 32.1% reported that they received no help to go smoke-free. Less than a

third said they felt they received enough support from their prisons in the move to smoke-free.

Participants reported that the money they saved from no longer buying tobacco was spent on (not mutually exclusive categories): food (73.3%), telephone credit (39.2%), toiletries (34.8%), electronic cigarettes (19.6) and clothes (8.3%). Post-policy, a quarter of prisoners who reported smoking pre-policy stated they would remain smoke-free if transferred to a smoking establishment or released into the community.

Table 4.3 Pre- and post- questionnaire responses from all prisoners relating to smoking status and electronic cigarette use followed by smoking behaviours and attitudes about quitting from prisoners who were self-reported smokers

	3 months pre-smoke-free					3 months post-smoke-free				
Prison ID^	**All Data**	**EX**	**DM**	**CW**	**ER**	**All Data**	**EX**	**DM**	**CW**	**ER**
Smoking status (reported retrospectively post- smoke-free)										
Smoker	65.3%	78.3%	57.5%	66.4%	65.1%	64.6%	69.8%	61.2%	66.3%	64%
Ex-smoker	9.6%	4.8%	13.1%	6.5%	11.6%	9.3%	11.3%	8.6%	7.9%	10.7%
Non-smoker	25.2%	16.9%	29.4%	27.1%	23.3%	26.1%	18.9%	30.2%	25.8%	25.3%
	(n=429)	*(n=83)*	*(n=153)*	*(n=105)*	*(n=85)*	*(n=333)*	*(n=53)*	(n=116)	*(n=89)*	(n=75)
Have you ever ordered an electronic cigarette from the canteen?										
Yes	21.9%	18.3%	24.5%	20.8%	22.1%	41.5%	64.2%	35%	41.9%	35.4%
	(n=429)	*(n=82)*	*(n=155)*	*(n=106)*	*(n=86)*	*(n=342)*	*(n=53)*	*(n=117)*	*(n=93)*	*(n=79)*
						Do you regularly use an electronic cigarette?ˠ				
Yes						**32.2%**	55.9%	22.8%	31.1%	25.7%
						(n=171)	(n=34)	*(n=57)*	*(n=45)*	*(n=35)*
Do you want to stop smoking prior to the smoke-free policy?ˠ						**Did you want to stop smoking prior to the smoke-free policy?ˠ**				
Yes	38.5%	32.3%	37.5%	44.3%	40.0%	23.7%	10.8%	25.4%	16.9%	39.6%
No	43.5%	46.2%	48.9%	34.3%	43.6%	68.8%	83.8%	71.8%	72.9%	47.9%
Unsure	18.0%	21.5%	13.6%	21.4%	16.4%	7.4%	5.4%	2.8%	10.2%	12.5%
	(n=278)	*(n=65)*	*(n=88)*	*(n=70)*	*(n=55)*	*(n=215)*	*(n=37)*	*(n=71)*	*(n=59)*	(n=48)
Would like help to stop smoking in the run up to this prison going smoke-free?ˠ										
Yes	60.1%	69.2%	53.4%	55.9%	65.5%					
No	30.4%	18.5%	34.1%	35.3%	32.7%					
Unsure	9.4%	12.3%	12.5%	8.8%	1.8%					
	(n=276)	*(n=65)*	*(n=88)*	*(n=68)*	*(n=55)*					
Which intervention(s) have you used to help cut down/quit prior to smoke-free or on reception to this prison*? ˠ										

NRT Electronic cigarettes No help		59.9% 34.9% 31.1% *(n=212)*	69.4% 38.9% 30.6% *(n=36)*	58.6% 31.4% 31.4% *(n=70)*	56.9% 41.4% 31% *(n=58)*	58.3% 29.2% 31.3% (n=48)
Do you feel you received enough help from the prison service to support your move towards smoke-free? ¥						
Yes No Unsure		30.6% 56.9% 12.4% *(n=209)*	22.9% 68.9% 8.6% *(n=35)*	36.8% 48.5% 14.7% *(n=68)*	30.5% 57.6% 11.9% *(n=59)*	27.7% 59.6% 12.8% *(n=47)*
Will remain smoke-free once you are transferred (to a smoking prison) or released from this smoke-free prison? ¥						
Yes No Unsure		24.5% 51.9% 23.6% *(n=212)*	22.9% 60% 17.1% *(n=35)*	24.3% 52.9% 22.95 *(n=70)*	18.6% 49.5% 32.2% *(n=59)*	33.3% 47.9% 18.8% *(n=48)*

^ Prisons abbreviation. EX = HMP Exeter, DM = HMP Dartmoor, CW = HMP Channings Wood, ER = HMP Erlestoke.

'n' refers to the number of participant who responded to each question. Percentage answers are based on those who answered each question only.

¥ Responses from self-reported smokers only.

*Participants could tick more than one option, with the exception of the 'no help' answer.

4.4.1.3 Perceptions of the smoke-free policy post-implementation and support for the national introduction of smoke-free prisons

Of those living in the four pilot sites before smoke-free policy, over two thirds reported that the move was well publicised and that they had received sufficient notice of the policy change. However, 70% stated they had seen or were aware of prisoners smoking since the smoke-free date. Over two thirds felt there had been an increase in incidents (aggression, self-harm) and drug use due to their establishment going smoke-free. Compared to the other prisons, prisoners at HMP Erlestoke felt there had been a bigger increase in incidents (80%) and prisoners at HMP Dartmoor reported the highest increase in drug use due to going smoke-free (79.5%). Regardless of self-reported smoking status, 40.4% of all respondents (42.7% of smokers) reported that their health had improved since the policy was introduced.

Before the introduction of the smoke-free policy, just over 30% of all prisoners surveyed wanted their prison to introduce the new policy, however this applied to only 12.8% of self–reported smokers (n=274). Post-policy, 22.8% of all respondents (10.6% of those who had smoked pre-policy) agreed that a comprehensive smoke-free policy should be introduced throughout the English prison estate. Further details of prisoner responses relating to the implementation of smoke-free are shown in Table 4.4.

Table 4.4 Questionnaire responses from all prisoners regarding the smoke-free introduction pre- and post-implementation

	3 months pre-smoke-free					3 months post-smoke-free				
Prison ID^	**All Data**	**EX**	**DM**	**CW**	**ER**	**All Data**	**EX**	**DM**	**CW**	**ER**
Have you seen any communication (for example, posters/notice to prisoners) relating to this prison going smoke-free?										
Yes	92.2% (n=346)	#	91.4% *(n=152)*	91.6% *(n=104)*	94.3% *(n=84)*					
Do you feel you received enough notice and publicity prior to your prison going smoke-free?>										
Yes						65.5%	60.9%	61.2%	74.5%	66.2%
No						25.3%	26.1%	30.6%	16.4%	24.6%
Unsure						9.1% *(n=241)*	13.0% *(n=23)*	8.2% (n=98)	9.1% (n=55)	9.2% (n=65)
Are you aware of prisoners smoking since the introduction of the smoke-free policy?										
Yes						70.6%	58.7%	71.3%	71.9%	75.3%
No						29.4% *(n=327)*	41.3% *(n=46)*	28.7% *(n=115)*	28.1% *(n=89)*	24.7% *(n=77)*
Do you think there has been an increased in incidents (aggression, self-harm) due to the introduction of the smoke-free policy?										
Yes						71%	73.3%	66.4%	67.7%	80%
No						8.7%	4.4%	11.2%	9.7%	6.3%
Unsure						20.4% *(n=334)*	22.2% *(n=45)*	22.4% *(n=116)*	22.6% *(n=93)*	13.8% *(n=80)*
Do you think there has been an increased in drug use due to the introduction of the smoke-free policy?										
Yes						65.6%	57.8%	79.5%	58.1%	58.2%
No						10.5%	4.4%	6.8%	12.9%	16.5%
Unsure						24% *(n=334)*	37.8% *(n=45)*	13.7% *(n=117)*	29% *(n=93)*	25.3% *(n=79)*
As a result of this prison going smoke-free my health has got:										
Better						40.4%	47.7%	38.4%	41.3%	38%
The same						44.6%	29.5%	52.7%	39.1%	48.1%
Worse						15%	22.7%	8.9%	19.6%	13.9%

						(n=327)	*(n=44)*	*(n=112)*	*(n=93)*	*(n=79)*
Do you want this prison to go tobacco and smoke-free?										
Yes	30.2%	23.2%	28.6%	34.6%	34.5%					
No	55.4%	67.1%	53.2%	50.0%	54.8%					
Unsure	14.4%	9.8%	18.2%	15.4%	10.7%					
	(n=424)	*(n=82)*	*(n=154)*	*(n=104)*	*(n=84)*					
Do you think the rest of the prison estate in England should go smoke-free in the future?										
Yes						22.8%	18.6%	23.7%	21.7%	25%
No						60.1%	58.1%	56.8%	60.9%	65%
Unsure						17.1%	23.3%	19.5%	17.4%	10%
						(n=333)	*(n=43)*	*(n=118)*	*(n=92)*	*(n=80)*

^ Prisons abbreviation. EX = HMP Exeter, DM = HMP Dartmoor, CW = HMP Channings Wood, ER = HMP Erlestoke.

'n' refers to the number of participant who responded to each question. Percentage answers are based on those who answered each question only.

Question not included in this questionnaire, added to later questionnaires at the request of the Prison Service Headquarters Communication Team.

> Only answered by those living at the prison prior to the smoke-free policy date.

4.4.2 Staff member questionnaire

Six hundred and twenty two staff were approached to complete a questionnaire across the four prisons, comprising 344 pre- and 278 post-policy. This resulted in 313 completed questionnaires pre- and 208 completed questionnaires post- policy and represented 24.4% and 16.2% of the staff members working across all departments of the four establishments respectively.

4.4.2.1 Staff member characteristics

As with prisoners, it is not known how many staff surveyed pre-policy were surveyed again post-policy. Ethics committees did not allow identification of participants therefore linking of responses pre- to post- was not possible. Overall, the majority of the staff members surveyed were from a White British background, with a mean age of 43, and the mean number of years working for HM Prison Service was ten years. Slightly fewer males and uniformed officers completed the survey post-policy. Most of the participants surveyed had direct prisoner contact pre- and post-policy, with 61% pre-policy and 43% post-policy stating that they spent over 75% of their working hours in direct contact with prisoners. Of the 208 staff surveyed post- policy, 94.7% stated they had been working at their establishment prior to the smoke-free implementation date. Further details of staff member characteristics are presented in Table 4.5.

Table 4.5 Characteristics of all staff member respondents

	3 months pre-smoke-free					3 months post-smoke-free				
Prison ID^	**All Data**	**EX**	**DM**	**CW**	**ER**	**All Data**	**EX**	**DM**	**CW**	**ER**
Staff Surveyed										
	313	87	106	33	87	208	61	64	25	58
Sex										
Male	59.9%	64%	60.4%	63.6%	54.0%	44.2%	49.2%	53.1%	52%	25.9%
Female	40.1%	36%	39.6%	36.4%	46.0%	55.8%	50.8%	46.9%	48%	74.1%
	(n=312)	(n=86)	(n=106)	(n=33)	(n=87)	(n=206)	(n=59)	(n=64)	(n=25)	(n=58)
Age										
Mean	42.84	41.52	44.71	44.19	41.47	41.84	40.56	44.56	41.09	40.56
Range	19-68	20– 64	22-68	23-59	19-61	20-71	21-71	20-69	22-63	20-62
	(n=272)	(n=73)	(n=91)	(n=27)	(n=87)	(n=193)	(n=57)	(n=59)	(n=23)	(n=54)
Ethnicity										
White - British	94.2%	95.2%	94.3%	97.0%	92.0%	93.6%	93.4%	95.2%	88%	94.5%
White - Irish	0.6%	0%	1.0%	0%	1.1%	1%	1.6%	0%	0%	1.8%
Other white background	1.9%	2.4%	1.0%	3.0%	2.3%	3.4%	4.9%	1.6%	8%	1.8%
Mixed – white and black Caribbean	0%	0%	0%	0%	0%	0.5%	0%	0%	4%	0%
Mixed – white and Asian	0.6%	0%	1.0%	0%	1.1%	0.5%	0%	1.6%	0%	0%
Other mixed background	0.3%	0%	1.0%	0%	0%	0%	0%	0%	0%	0%
Asian or Asian British – Indian	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Asian or Asian British – Pakistani	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Asian or Asian British – Bangladeshi	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other Asian background	1.0%	2.4%	1.0%	0%	0%%	0%	0%	0%	0%	0%
Black or Black British – Caribbean	0.3%	0%	0%	0%	1.1%	0.5%	0%	0%	0%	1.8%
Black or Black British – African	0.3%	0%	0%	0%	1.1%	0.5%	0%	1.6%	0%	0%
Other Black background	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Chinese	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0.6%	0%	1.0%	0%	1.1%	0%	0%	0%	0%	0%

	(n= 309)	(n=84)	(n=105)	(n=33)	(n=87)	(n=204)	(n=61)	(n=63)	(n=25)	(n=55)
Job Role										
Uniformed Officer	34.2%	31.0%	34.0%	36.4%	36.8%	20.2%	23%	26.6%	8%	15.5%
Line Manager/Senior Officer	14.1%	17.2%	9.4%	24.2%	12.6%	10.1%	14.8%	9.4%	8%	6.9%
Senior Management Team	5.1%	3.4%	8.5%	0%	4.6%	5.8%	8.2%	4.7%	0%	6.9%
Administrative	9.6%	10.3%	7.5%	15.2%	9.2%	13.9%	13.1%	9.4%	8%	22.4%
Healthcare	1.3%	4.6%	0%	0%	0%	9.1%	16.4%	10.9%	0%	3.4%
Contractor	2.2%	3.4%	0.9%	3.0%	2.3%	1%	0%	0%	8%	0%
Support Services	30.4%	27.6%	35.8%	21.2%	29.9%	37%	23%	31.3%	68%	44.8%
Other	3.2%	2.3%	3.8%	0%	4.6%	2.9%	1.6%	7.8%	0%	0%
	(n=313)	(n=87)	(n=106)	(n=33)	(n=87)	(n=208)	(n=61)	(n=64)	(n=26)	(n=58)
Mean number of years working for the prison service										
	10.23	8.93	11.19	13.41	9.14	8.97	8.26	12	7.09	7.07
	(n=272)	(n=85)	(n=106)	(n=32)	(n=85)	(n=200)	(n=57)	(n=63)	(n=25)	(n=55)
Do you have direct prisoner contact?										
Yes	91.7%	96.5%	88.7%	84.8%	93.1	87.5%	83.6%	89.1%	96%	86.2%
	(n=312)	(n=86)	(n=106)	(n=33)	(n=87)	(n=208)	(n=61)	(n=64)	(n=25)	(n=58)
How much direct prisoners contact do you have during working hours?+										
Up to 25%	9.5%	14.5%	8.5%	3.7%	7.5%	15.7%	16%	15.8%	9.1%	18.4%
26%-50%	12.7%	10.8%	19.1%	7.4%	8.8%	16.3%	16%	15.8%	9.1%	20.4%
51%- 75%	17.3%	19.3%	11.7%	25.9%	18.8%	25.3%	22%	21.1%	50%	22.4%
Over 76% of the time	60.6%	55.4%	60.6%	63.0%	65.0%	42.7%	46%	47.4%	31.8%	38.8%
	(n=284)	(n=83)	(n=94)	(n=27)	(n=80)	(n=178)	(n=50)	(n=57)	(n=22)	(n=49)

^ Prisons abbreviation. EX = HMP Exeter, DM = HMP Dartmoor, CW = HMP Channings Wood, ER = HMP Erlestoke.

'n' refers to the number of participant who responded to each question. Percentage answers are based on those who answered each question only.

+Only completed by those staff members who report having prisoner contact.

4.4.2.2 Smoking prevalence, behaviours and attitudes about quitting from self-reported smokers

Overall, self-reported smoking prevalence and the number of cigarettes smoked per day were similar pre- and post- policy for staff members (11.9% and 9; 13.5% and 8, respectively). Post-policy, 18% reported that they had smoked for less than five years compared to 8.3% pre-policy. Pre-policy, over half of smoking staff members reported that they would access cessation services (NRT and behavioural support) if the prison provided them. Fewer staff members post-policy reported wanting to stop smoking (pre: 58.3% and post: 37%). Overall there were little difference in electronic cigarette use pre- to post-policy amongst staff members (pre 6.1% and post 8.7%) however this was not the case for staff members at HMP Exeter who increased their regular usage from 4.7% pre- to 16.4% post-policy. Around a third of smoking staff members reported changing their smoking patterns or thinking about quitting as a result of a smoke-free policy being brought into their place of work. Table 4.6 gives the responses of smoking staff members on their smoking behaviour alongside feelings and actions towards quitting.

Table 4.6 Pre- and post- questionnaire responses from all staff members relating to smoking status and electronic cigarette use followed by smoking behaviours and attitudes about quitting from staff who were self-reported smokers

	3 months pre-smoke-free					3 months post-smoke-free				
Prison ID^	**All Data**	**EX**	**DM**	**CW**	**ER**	**All Data**	**EX**	**DM**	**CW**	**ER**
Smoking status										
Smoker	11.9%	11.5%	10.4%	3.0%	17.4%	13.5%	*19.7%*	7.8%	8.3%	15.5%
Ex-smoker	22.8%	18.4%	29.2%	27.3%	17.4%	25.1%	*27.9%*	26.6%	25%	20.7%
Non-smoker	65.4%	70.1%	60.4%	69.7%	65.1%	61.4%	*52.5%*	65.6%	66.7%	63.8%
	(n=312)	(n=87)	(n=106)	(n=33)	(n=86)	(n=207)	*(n=61)*	(n=64)	(n=24)	(n=58)
Do you regularly use an electronic cigarette?										
Yes	6.1%	4.7%	6.7%	3.0%	8.1%	8.7%	16.4%	6.3%	4.2%	5.4%
	(n=310)	(n=86)	(n=105)	(n=33)	(n=86)	(n=207)	(n=61)	(n=64)	(n=24)	(n=58)
Do you want to stop smoking?¥										
Yes	58.3%	66.7%	45.5%		60.0%	37%	45.5%	20%		33.3%
No	30.6%	22.2%	36.4%		33.3%	37%	36.4%	80%		22.2%
Unsure	11.1%	11.1%	18.2%		6.7%	25.9%	18.2%	0%		44.4%
	(n=36)	(n=9)	(n=11)	(n=1)~	(n=15)	(n=27)	(n=11)	(n=5)	(n=2)~	(n=9)
Have you ever tried to stop smoking? ¥										
Yes	74.3%	55.6%	80.0%		80.0%	64.3%	63.6%	66.7%		66.7%
No	25.7%	44.4%	20.0%		20.0%	25.7%	36.4%	33.3%		33.3%
	(n=35)	(n=9)	(n=10)	(n=1)~	(n=15)	(n=27)	(n=11)	(n=6)	(n=2)~	(n=9)
Do you use any form of NRT whilst you are at work? ¥										
Yes	5.4%	0.0%	18.2%		0.0%	14.3%	27.3%	0%		11.1%
No	94.6%	100%	81.8%		100%	85.7%	72.7%	100%		88.9%
	(n=37)	(n=10)	(n=11)	(n=1)~	(n=15)	(n=28)	(n=11)	(n=6)	(n=2)~	(n=9)
Do you feel your smoking patterns have changed as a result of the prison you work at going smoke-free?¥										
Yes						35.7%	27.3%	33.3%		55.6%
No						64.3%	72.7%	66.7%		44.4%
						(n=28)	(n=11)	(n=6)	(n=2)~	(n=9)

Has the introduction of the new smoke-free policy made you think about stopping smoking or triggered a quit attempt? ¥						
Yes		32%	22.2%	20%		55.6%
No		68%	77.8%	80%		44.4%
		(n=25)	(n=9)	(n=5)	(n=2)~	(n=9)

^ Prisons abbreviation. EX = HMP Exeter, DM = HMP Dartmoor, CW = HMP Channings Wood, ER = HMP Erlestoke.

'n' refers to the number of participant who responded to each question. Percentage answers are based on those who answered each question only.

¥ Responses from self-reported smokers only.

~Percentage answers omitted here due to small number of respondents.

4.4.2.3 Perceptions of second-hand smoke exposure, the introduction of the smoke-free policy and the national introduction of smoke-free prisons

The majority (89%) of staff members surveyed said they had seen some form of communication relating to the prison going smoke-free three months prior to implementation. Post-policy, they felt that sufficient notice and publicity had been given leading up to the smoke-free policy. Nearly three quarters of staff members surveyed pre-policy reported wanting smoking cessation training in the lead up to smoke-free, with nearly a third reporting having received training post- smoke-free.

Seventy-two percent of staff had been aware of prisoners smoking since their smoke-free date however this figured ranged from 45% at HMP Exeter to 89.7% at HMP Erlestoke. Over half perceived an increase in incidents (aggression and self-harm) and drug use since going smoke-free. Staff members at HMP Dartmoor reported the largest perceived increase in drug use compared to the other three prisons surveyed (79.7%). Pre-policy, two thirds of all staff felt exposed to SHS whilst at work, and this proportion was higher for uniformed officers with direct prisoner contact (79%, n=107). Of those working in the four pilot sites post- smoke-free implementation, 86% stated they felt less exposure to SHS compared to pre-policy and nearly a quarter believe their health had improved as a result of smoke-free policy. More staff members at HMP Dartmoor reported an improvement to their working environment than any other prison surveyed. Across the four prisons, over half reported that their working environment had improved since going smoke-free; fewer staff perceived improvements at HMP Channings Wood (42%) whereas nearly two-thirds of those at HMP Dartmoor felt their working environment had improved.

Pre-policy, 62% of staff members supported their prison going smoke-free and post-policy, 70% supported the introduction of the policy throughout the rest of the English prison

estate. Table 4.7 gives questionnaire responses from all staff members regarding communication, SHS exposure and the smoke-free introduction pre- and post-implementation.

Table 4.7 Questionnaire responses from all staff members regarding communication, second-hand smoke exposure and the smoke-free introduction pre- and post-implementation

	3 months pre-smoke-free					3 months post-smoke-free				
Prison ID^	**All Data**	**EX**	**DM**	**CW**	**ER**	**All Data**	**EX**	**DM**	**CW**	**ER**
Have you seen any communication (for example, posters/notices to staff) relating to the prison going smoke-free?										
Yes	89.3% (n= 225)	#	84% (n=106)	51.5% (n=33)	67.8% (n=87)					
Do you feel there was enough notice and publicity given to inform staff members prior to the prison going smoke-free?∞										
Yes						94.9%	94.7%	92.1%	100%	96.5%
No						2.5%	1.8%	3.2%	0%	3.5%
Unsure						2.5% (n=197)	3.5% (n=57)	4.8% (n=63)	0% (n=20)	0% (n=57)
Do you feel there was enough notice and publicity given to inform prisoners prior to the prison going smoke-free?∞										
Yes						91.8%	91.2%	92.1%	94.7%	91.2%
No						4.1%	5.3%	3.2%	0%	5.3%
Unsure						4.1% (n=196)	3.5% (n=57)	4.8% (n=63)	5.3% (n=19)	3.5% (n=57)
Would like to receive smoking cessation training before the smoke-free policy is introduced?										
Yes	73.6% (n=307)	79.8% (n=84)	77.9% (n=104)	48.5% (n=33)	72.1% (n=86)					
Have you received any smoking cessation training?										
Yes						30.1%	18%	19%	36%	52.6%
No						69.9% (n=206)	82% (n=61)	81% (n=63)	64% (n=25)	47.4% (n=57)
Are you aware of prisoners smoking since the introduction of the smoke-free policy?										
Yes						72%	45%	79.7%	76%	89.7%
No						28% (n=207)	55% (n=60)	20.3% (n=64)	24% (n=25)	10.3% (n=58)
Do you think there will be/has been an increased in incidents (aggression, self-harm) due to the introduction of the smoke-free policy?										

Yes No Unsure	87.1% 1.0% 12.0% (n=309)	95.4% 0% 4.6% (n=87)	80.8% 1.0% 18.3% (n=104)	90.9% 3.0% 6.1% (n=33)	84.7% 1.2% 14.1% (n=85)	51.4% 18.35 30.3% (n=208)	44.3% 29.5% 26.2% (n=61)	46.9% 18.8% 34.4% (n=64)	60% 8% 32% (n=25)	60.3% 10.3% 29.3% (n=58)
Do you think there has been an increased in drug use due to the introduction of the smoke-free policy?										
Yes No Unsure						58% 14% 28% (n=207)	46.7% 21.7% 31.7% (n=60)	79.7% 4.7% 15.6% (n=64)	44% 20% 36% (n=25)	51.7% 13.8% 34.5% (n=58)
Do you feel exposed to SHS at work?										
Yes	66.1% (n= 313)	70.1% (n=87)	66.0% (n=106)	51.5% (n=33)	67.8% (n=87)					
Compared to pre- smoke-free, how much SHS do you now feel exposed to post- policy?										
More SHS The same Less SHS						2% 12.1% 85.9% (n=199)	5% 15% 80% (n=60)	0% 8.5% 91.5% (n=59)	4.2% 4.2% 91.7% (n=24)	0% 16.1% 83.9% (n=56)
Do you think the smoke-free policy has improved your working environment?										
Yes No Unsure						58% 22.7% 19.3% (n=207)	54.1% 24.6% 21.3% (n=61)	71.9% 15.6% 12.5% (n=64)	48% 32% 20% (n=25)	50.9% 24.6% 24.6% (n=57)
As a result of this prison going smoke-free my health has got:										
Better The same Worse						22.5% 76% 1.5% (n=204)	31.1% 63.9% 4.9% (n=61)	22.2% 77.8% 0% (n=63)	16.7% 83.3% 0% (n=24)	16.1% 83.9% 0% (n=56)
How much has the smoke-free policy impacted on you day-to day work load?										
Very much A little Not at all						22.8% 39.3% 37.9% (n=206)	27.9% 52.5% 19.7% (n=61)	25.8% 38.7% 35.5% (n=62)	16% 32% 52% (n=25)	17.2% 29.3% 53.4% (n=58)

Do you want this prison to go tobacco and smoke-free?										
Yes	62.3%	60.5%	65.1%	66.7%	58.8%					
No	14.5%	17.4%	11.3%	27.3%	10.6%					
Unsure	23.2%	22.1%	23.6%	6.1%	30.6%					
	(n= 310)	(n=86)	(n=106)	(n=33)	(n=85)					
Do you think the rest of the prison estate in England should go smoke-free in the future?										
Yes						69.7%	68.9%	75%	76%	62.1%
No						9.6%	13.1%	7.8%	16%	5.2%
Unsure						20.7%	18%	17.2%	8%	32.8%
						(n=208)	(n=61)	(n=64)	(n=25)	(n=59)

^ Prisons abbreviation. EX = HMP Exeter, DM = HMP Dartmoor, CW = HMP Channings Wood, ER = HMP Erlestoke.

'n' refers to the number of participant who responded to each question. Percentage answers are based on those who answered each question only.

∞Answers only taken from those staff member who reported working in the 4 early adopter prisons prior to the introduction of the smoke-free policy.

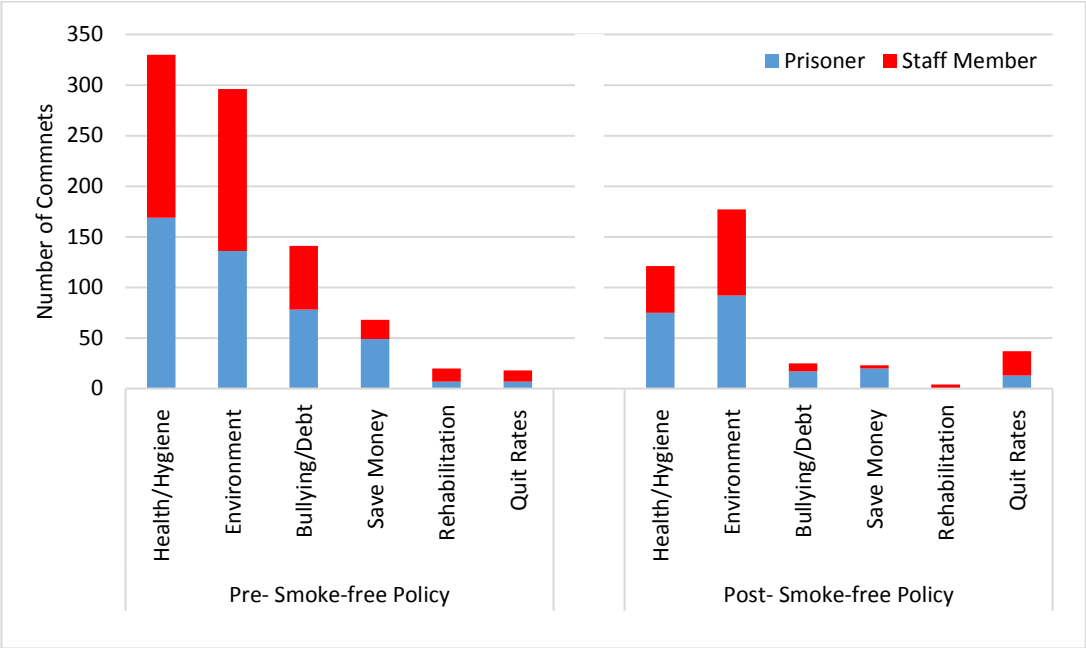
Question not included in this questionnaire, added to later questionnaires at the request of the Prison Service Headquarters Communication Team.

4.4.3 Prisoner and staff member positive and negative written comments' pre- and post-smoke-free policy

4.4.3.1 Positive written comments pre-and post-policy

Before the smoke-free policy was introduced, 66% (285) of prisoners and 82% (257) of staff members surveyed wrote down at least one positive comment about their prison going smoke-free. After the introduction of the smoke-free policy, 50% (172) of prisoners and 64% (133) of staff members surveyed wrote down at least one positive outcome resulting from the new policy. Analysis of the combined 931 pre-policy comments (464 from prisoners and 467 from staff members) and 306 post-policy comments (173 from prisoners and 133 from staff members) identified six main themes; health and hygiene, environment, bullying and debt, saving money, rehabilitation, and quit rates (see Figure 4.1). Combined written comments taken from these themes are discussed in turn in the subsequent paragraphs, differences between prisoners or staff-member or pre- or post-policy comments are highlighted.

Figure 4.1 Number of positive written comments from prisoners and staff pre-and post-smoke-free policy



Health and hygiene

Pre-policy there were 169 prisoner and 161 staff comments, and post-policy 75 prisoner and 46 staff comments relating to 'health and hygiene'. The majority of these stated 'health', 'better health' or 'improved health' in relation to smoke-free. More specific comments mentioned a reduction in smoking related illnesses, for example 'less chance of lung cancer' and 'less second-hand smoke related illness' as a result of being in a smoke-free environment. Additional comments from prisoners since the introduction of the smoke-free policy gave examples of how their clothes smelt cleaner and that their sense of taste had retuned.

Environment

For comments relating to 'environment', there were 136 prisoner and 160 staff comments pre-policy and 92 prisoner and 85 staff comments post-policy. Most comments pre- and post- policy referred to improved environmental conditions: better air quality, lower levels

of smoke and cleaner landings. Many of the comments recorded after the smoke-free policy referred to a cleaner and fresher smell on the living locations.

Bullying and debt

There were 78 prisoner and 63 staff written comments pre-policy, and 17 prisoner and 8 staff member comments post-policy, that referred to 'bullying and debt'. Prisoner and staff comments referred to less bullying, debts and 'taxing' (taxing refers to the repaying of debts) due to tobacco with the introduction of the policy. Some written comments pre-policy mentioned how the currency (tobacco) would be taken away and there would be an end to dealing in tobacco. A few comments added that this may cause a reduction in thieving and violence after going smoke-free.

Saving money

For the theme 'saving money' there were 49 prisoner and 19 staff written comments pre-policy and 20 prisoner and 3 staff member comments post-policy. The majority of the comments simply stated 'save money' or 'more money'; some comments added that the money could be spent on other items available through the prison canteen, such as telephone credit. Staff comments also referred to potential savings to the prison healthcare department and National Health Service as a result of a reduction in smoking-related illness.

Rehabilitation

Pre-policy there were 7 prisoner and 11 staff member written comments, and post-policy just 4 staff member comments which related to the theme 'rehabilitation'. These comments varied but mainly centred around changing behaviours, non-smoking prisons being a deterrent or leading by example, for example, 'clearer thinking and positive

attitudes', 'might put people off offending…' and 'positive attributes as regards to being better role models to my children and younger/older peers'.

Quit rates

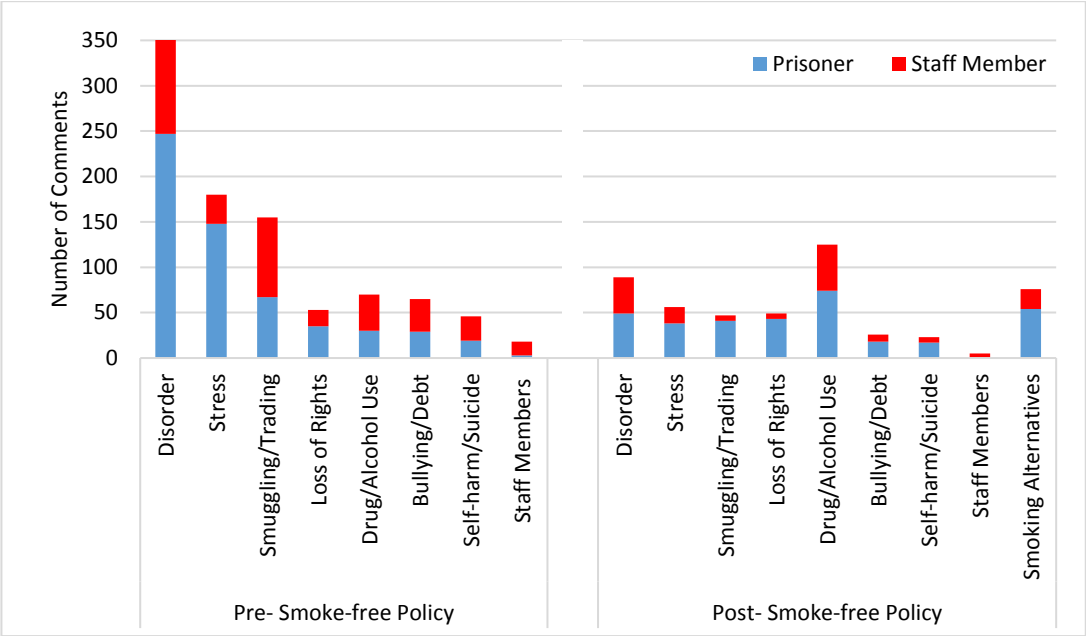
Of the comments referring to 'quit rates', there were seven prisoner and 11 staff comments pre-policy and 13 prisoner and 24 staff member written comments post-policy. The majority of these simply referred to prisoners stopping smoking, or it being easier for prisoners to stop smoking in a smoke-free environment. A few comments added that it would be easier to quit because of added encouragement, motivation and support to do so whilst in prison.

Other themes attracting fewer comments included reduced fire risk, less drug use, and policing and security.

4.4.3.2 Negative written comments pre- and post- smoke-free policy

Before the smoke-free policy was introduced, 83% (359) of prisoners and 79% (247) of staff members surveyed wrote down at least one negative comment relating to their prison going smoke-free. After the introduction of the policy, 71% (244) prisoners and 61% (127) of staff members surveyed wrote down at least one negative comment. Analysis of the combined 1130 comments pre-policy comments (644 from prisoners and 486 from staff members) and 370 post-policy comments (244 from prisoners and 126 from staff members) identified nine main themes; disorder, stress, smuggling and trading, loss of rights, drug and alcohol use, bullying and debt, self-harm, mental health and suicide, staff member resources, and smoking alternative substances (post-policy only) (Figure 4.2). Any differences made by prisoners or staff-member or pre- or post-policy comments are highlighted.

Figure 4.2 Number of negative written comments from prisoners and staff pre- and post-smoke-free policy



Disorder

There were 247 prisoner and 194 staff comments pre-policy, and 49 prisoner and 40 staff comments post-policy referring to 'disorder'. These comments referred to an increase in fights, violence, tension, and aggression from prisoners as a result of going smoke-free. Staff comments also stated that these negative behaviours could be directed towards them.

Stress

Of the comments relating to 'stress', there were 148 prisoner and 32 staff comments pre- and 39 prisoner and 18 staff comments post-policy. Comments simply stated 'more stress' or an increase in anxiety, irritability or general poor mood of prisoners due to the introduction of the policy. Comments highlighted difficulties with withdrawing from tobacco and the loss of a coping mechanism for prisoners.

Smuggling and trading

Pre-policy there were 67 prisoner and 88 staff member comments, and post-policy 41 prisoner and six staff comments which referred to 'smuggling and trading'. Comments related to tobacco being smuggled in, becoming contraband and creating a black market as a result of going smoke-free. Post-policy comments referred to the inflated price for tobacco traded by prisoners, and the creation of a new illicit market for tobacco since the introduction of the policy: for example, 'a £5 pack now costs £50 (contraband)' and 'so instead of drugs and phones now it's tobacco, Rizlas and lighters'.

Loss of rights

For the theme 'loss of rights' there were 35 prisoner and 18 staff comments pre-policy and 43 prisoner and six staff comments post-policy. Comments regarding the introduction of the smoke-free policy included 'loss of human rights', 'taking away prisoner's free will' and 'removal of individual choice'. Additional comments described how prisoners were not able to make their own decision to give up, instead being forced to as a result of the policy.

Drug and alcohol use

The theme 'drug and alcohol use' had 30 prisoner and 40 staff comments pre-policy and 74 prisoner and 51 staff comments post-policy. Negative prisoner and staff comments referred to an increase in drug use and a move to more addictive 'harder' substances due to the pilot sites being smoke-free. Comments highlighted an increase in use of NPS (for example, Spice); how it would be used in a pure or 'neat' form and therefore increasing the number of attacks and negative health consequences associated with it. Comments post-policy also referred to an increase in illicit alcohol ('hooch') use.

Bullying and debt

For comments relating to 'bullying and debt', there were 29 prisoner and 36 staff comments pre-policy and 18 prisoner and eight staff written comments post-policy. The majority of comments simply referred to 'bullying' or 'more debt' as a result of the smoke-free policy.

Self-harm, mental health and suicide

There were 19 prisoner and 27 staff comments pre-policy and 17 prisoner and six staff member comments which referred to 'self-harm, mental health and suicide'. Written comments highlighted an increase in self-harm or Assessment Care in Custody and Teamwork (ACCT) documents (an observation document opened when prisoners are at risk of self-harm or suicide) opened with the move to smoke-free. Comments also referred to a negative impact on prisoners' mental health and an increase in suicides ('code blues') as a result of going smoke-free.

Staff member resources

Of the comments referring to 'staff member resources', three came from prisoners and 15 from staff pre- policy, and five from staff post-policy. The staff member negative comments related to an increase workload for staff members, specifically for officers and those who work in healthcare and security departments, with the introduction of the policy. Comments also highlighted a lack of staff or a need to increase staff numbers to deal with the new policy.

Smoking of alternative substances

There were 54 prisoner and 22 staff member comments post- policy under the theme 'smoking of alternative substances'; there were no comments pre-policy. Most of these

post-policy comments referred to how prisoners were now smoking other substances since the policy came into force, which included the contents of tea bags, lawn grass and nicotine replacement patches; and the use of pages from the Bible as cigarette rolling paper.

Other categories with fewer comments included, food and weight increase, long term prisoners, lack of cessation services and disengagement (for example from the prison regime or work). The remaining comments varied.

4.4.4 Prisoner and staff member focus groups' pre- and post- smoke-free policy

A total of 132 prisoners across the four pilot sites attended one of the 17 focus groups held (ten pre- and seven post-), with an average attendance of eight (range 5-14) per group. Sixteen staff groups (six pre- and ten post-) were held with 109 staff members attending in total (mean per group seven, range 2-18). On average, the duration of prisoner focus groups pre- policy were 12 minutes and post-policy 7 minutes. For staff members, the average length of focus groups pre-policy were 17 minutes and post-policy 11 minutes. Staff members were recruited by purposive sampling to ensure representation of a range of job roles including mental health services (1), Substance Misuse Services (2), Offender Management Unit (2), Healthcare (2), uniformed officers (7), workshop and education instructors (1) and psychologists (1). Prisoners were also recruited purposively, predominantly from those who attended industries, workshops and education.

4.4.4.1 Themes derived from prisoner and staff member focus group discussions

Preliminary codes deriving from the 33 prisoner and staff member transcripts (16 pre- and 17 post- smoke-free) outlined five broad themes: views on the smoke-free prison policy

and implementation; the role and importance of tobacco in prisoners' lives; potential and actual outcomes of going smoke-free (subthemes: disorder and drug use, trading and smoking other substances); stopping smoking (cessation services, NRT and electronic cigarettes); and changes in the prison environment and health due to the smoke-free policy. Focus group data from prisoners and staff pre-and post- policy are discussed in the following paragraphs, with any differences in comments relating to a specific group or time point highlighted in the text; verbatim quote are provided as examples in Boxes 1-6.

Views on the smoke-free prison policy and implementation

The announcement of the four early-adopter smoke-free sites attracted a range of questions, typically over why it was being introduced and how it would be implemented (Box 1). Prisoners believed they had the right to smoke while in prison and that the smoke-free policy removed their freedom of choice or free will. Prisoners felt that it was unfair to force a smoke-free policy on inmates, many of whom had smoked their whole lives and did not want to quit [1a]. The reasoning behind the introduction of the smoke-free policy was also unclear to many prisoners. Staff groups discussed the reasons they thought NOMS were introducing the policy, and these included protection from SHS, reduction in litigation, and pressure from the POA [1b]. Prisoners suggested various alternatives to the comprehensive ban on tobacco, including smoke-free wings or landings, designated smoking areas (for example, the exercise yard), only allowing smoking during the evenings, and having smoking and non-smoking prisons.

Before the smoke-free policy was introduced, some staff and prisoners said they felt the wider impact of smoke-free on their prison had not been taken into consideration (see theme 'potential and actual outcomes of going smoke-free: disorder, self-harm, drug use and trading') and that the people responsible for the introduction of the policy had little or

no experience of prison life [1c]. Staff members also raised a number of concerns including: lack of local planning and lead in time, uncertainty over the amount and source of funding for NRT, and that the number of staff in post who could potentially be trained and to deliver smoking cessation was insufficient [1d] (see theme 'stopping smoking: cessation services, NRT and electronic cigarettes). On a positive note, several prisoners and staff members, both pre- and post-implementation, thought the smoke-free date was thoroughly communicated throughout the four early adopter sites [1e]. At HMP Dartmoor, participants discussed how there was some miscommunication over the date that tobacco would be removed from sale before going smoke-free. Some prisoners felt this was deliberate and got the policy off to a bad start. Inmates entering one of the four early adopter sites for the first time since going smoke-free reported that the level of information they had received before arrival varied; reception staff reported a number of instances in which prisoners did not know that they were coming into a smoke-free environment [1f].

Box 1. Views on the smoke-free prison policy and the implementation ('R:' Indicates different contributions made during a focus group discussion)

[1a] It's still your right, I've got a right to smoke, that's my choice in life, if I want to smoke I want to smoke, it's up to me, regardless of anyone else, they cannot tell me to give up smoking. ***Prisoner (FG9), HMP Channings Wood, pre-smoke-free.***

[1b] It's because of when obviously they've come into the prisons and tested the air and feel like the amount of second-hand smoke that's obviously on the landings and the non-smoking prisoners and staff on a daily basis they feel like it's much too high and they've had a few big cases where staff have tried to sue the prison service over the health impacts. ***Staff member (FG32), HMP Exeter, pre-smoke-free.***

[1c] R: I think the people who are bringing these policies in, haven't got a clue about prison life.
R: Yeah, no experience of prisoners.
R: They can't bring policies in of somewhere where they have got no experience of, it's not going to work.
Prisoners (FG12), HMP Dartmoor, pre-smoke-free.

[1d] I don't think they started early enough with the NRT definitely not. This is all, dare I say, prison service rushed into without doubt. I've been sat in a number of meetings up until two months ago, they were struggling with the funding and whatever else. I think they need to when they go into other prisons they will need .....They might have to look at trying to roll it in much more in advance. Six months probably or something….
Staff member (FG28), HMP Dartmoor, pre-smoke-free.

[1e] R: Almost overloaded [with communication]
R: Yeah it was freely spoken about as well, there was plenty of signs around the place.
R: They were given plenty of time to sort of adjust to the idea of it as well.
R: Yeah plenty of notice.
…..
R: The notification worked very well, cos it gave them ample time so that was good.
R: Cos it was in the courts and police cells as well. ***Staff members (FG26), HMP Exeter, post-smoke-free.***

[1f] Yeah so obviously the issue we got is that prisoners coming from, up north, smoking prisons, are actually coming here and we are taking the tobacco off them and they are saying they haven't been told it was non-smoking. ***Staff member (FG21), HMP Erlestoke, post-smoke-free.***

The role and importance of tobacco in prisoners' lives

Tobacco is imbedded in prison culture and in prisoners' day to day lives (Box 2). It was clear that many prisoners took great pleasure from smoking, often using it as a coping mechanism or form of stress relief [2a]. Smoking was ingrained in prisoner's day to day routines, with many of them having smoked for many years [2b, c]. Some prisoners stated in the pre-policy groups that the smoke-free policy would not stop them from smoking tobacco in the prison, and it was accepted post-policy that prisoners had turned to alternative substances (for example, mixing the contents of tea bags and NRT patches) in a bid to continue to smoke (see subtheme 'Drug use, trading and smoking of other substances). Several participants felt that those serving a life sentence would struggle with the new smoke-free policy as many had smoked their whole adult life and that a cigarette was the only thing left for them to look forward to [2d]. Some took an alternative stance on going smoke-free, seeing the policy as an opportunity to stop smoking which without they would otherwise not be able to achieve [2e,g]. When asked whether prisoners would continue a smoke-free life once released or transferred to a prison which permitted smoking, the majority of prisoners said they would return to smoking [2f], even though some said ideally they would like to remain quit [2g].

Box 2. The role and importance of tobacco in prisoners' lives ('R:' Indicates different contributions made during a focus group discussion)

[2a] A lot of people take great pleasure in having a fag, it's something where they get to be on their own and do what they want to do, and focus on that and nothing else for a couple of minutes at a time and that's being taken away. ***Prisoners (FG12), HMP Dartmoor, pre smoke-free.***

[2b] I enjoy smoking and I've been in a few years and its part of my, it's my days, it's part of my day, it's what I do.
Prisoner (FG8), HMP Channings Wood, pre-smoke-free.

[2c] You see there are people that have smoked all their lives, and the average ages of a prisoner in here is 39 years so he could be smoking for over 20 years so therefore you're saying, right ok you've got to stop smoking within 3 month, that is actually quite difficult for someone.
Prisoner (FG15), HMP Erlestoke, pre-smoke-free.

[2d] R: The prisoners are yeah, you've got people in their 60s, 70s who have smoked since they were 15, 16 maybe younger.
R: It's the only comfort they've got.
R: In 2 weeks' time, if you are doing a life sentence and you've smoked throughout your sentence for the last 42 years in some cases it's a hell of a thing to do.
R: It's a way of life. ***Staff members (FG29), HMP Dartmoor, pre-smoke-free.***

[2e]….I've smoked since I was 11 and I'm 44 and I do want to stop, I do and I don't care what anyone else says, as soon as they take that burn [tobacco] off the canteen, bring it on, I can't do it with a choice, you know what I mean, I can't, I've tried loads of times, while I've still got the choice to buy it, it's there all the time, the temptation is there and it's just so easy, do you know what I mean, as soon as its gone, me personally I don't care about anyone else, as soon as its gone I can't buy it and I ain't got a choice, I've got to get healthy. ***Prisoner (FG14), HMP Dartmoor, pre-smoke-free.***

*[2f] Yeah but if I walked out of prison now, I'd just go to the shop and buy ciggies, you know what I mean, I've just smoked all my life, I'm 31 now and I've smoked since I was 15.****Prisoner (FG4), HMP Dartmoor, post-smoke-free.***

[2g] Yeah I think in the long run it is a good thing because I've been saying for years I should give up and I knew I would never if I was left to my own devices, but whether that's going to translate into when I get out, I carry on, I can't see it myself, I really can't see it.
Prisoner (FG3), HMP Channings Wood, post-smoke-free.

Potential and actual outcomes of going smoke-free

This theme revolves around prisoner and staff fears and anxieties with regards to implementation of a smoke-free policy in prison and then offers insight into whether these were realised or warranted since the introduction of the policy. The theme is divided into two subthemes; disorder (Box 3) and drug use, trading and smoking of other substances (Box 4).

- Disorder

Both prisoners and staff members feared that going smoke-free would lead to an increase in prisoner violence, aggression, and assaults on staff [3a, b]. A small proportion of participants also thought levels of self-harm would rise [3c]. Since going smoke-free, staff members were surprised by how smooth the transitions to smoke-free had been in their establishments [3d], although examples of disruption were given. While staff members acknowledged that incidents (for example, a disturbance at HMP Erlestoke had resulted in all prisoners on two wings being transferred and subsequent closure) had occurred, they felt that although the introduction of the smoke-free policy may have contributed to these occurrences it was not certain that the policy was the sole cause [3e]. Moreover, since the introduction of smoke-free policy a minority of prisoners thought that inmates had become more stressed, frustrated and short tempered. Both groups of participants thought that inner city jails and higher category [that is, higher security] establishments would encounter more difficulties with disorder going smoke-free than the pilot sites [3f, g].

Box 3. Potential and actual outcomes of going smoke-free: disorder ('R:' Indicates different contributions made during a focus group discussion)

[3a] R: It's going to cause more problems than anything.
R: I think there will definitely be a lot more fights and stuff and a lot more stressed out prisoners.
Prisoners (FG9), HMP Channings Wood, pre-smoke-free.

[3b] …I think there's going to be a lot of unrest, and a lot of people injured in the forthcoming changeover [to smoke-free].
Staff member (FG32), HMP Exeter, pre-smoke free.

[3c] …Some people have got mental health issues, in fact quite a few people have, and it might lead to some cutting up and cutting other people up and that could be staff or other prisoners. ***Prisoner (FG10), HMP Dartmoor, pre- smoke-free.***

[3d] It's actually gone a lot easier than I had anticipated, I thought there would have been a lot more protests if you like, but it went remarkably smoothly. ***Staff member (FG19), HMP Dartmoor, post-smoke-free.***

[3e] I mean when we had our disturbance, it was a culmination of factors and mainly caused by the shortage of staff, but I would still say for some of them the top part was that they were as stressed as they were they couldn't have a fag, so, it wasn't the primarily cause but it was an underlying one.
Staff member (FG23), HMP Erlestoke, post-smoke-free.

[3f] In the rougher jails and that, you can have a fight over taking an extra rizzler off someone, a match or a lighter or more baccy than you are supposed to if you ask for a roll up. Down in this jail you probably won't get that, but in the other nicks and that, towards London you will…
Prisoner (FG11), HMP Dartmoor, pre-smoke-free.

[3g] But I think maybe because geographic location we are probably easier, think you do this in London, Liverpool, Manchester, I think it would be a different kettle of fish. ***Staff member (FG24), HMP Exeter, post-smoke-free.***

- Drug use, trading and smoking of other substances

There was apprehension pre-policy that going smoke-free would lead to an increase in or a move to the use of harder drugs [4a, b] by prisoners. Furthermore, prisoners pointed out that they would no longer be able to mix NPS (for example, Spice) with tobacco, potentially resulting in an increase in attacks and severity [4c]. Many staff members felt there had been an initial increase in use of NPS post- smoke-free [4d], but it was difficult to say whether this was directly related to the smoke-free policy. As speculated before the policy was introduced, it was widely accepted post-policy that prisoners were still smoking tobacco in the early adopter prisons and that a 'black market' in tobacco and NRT patches had been created [4e, f]. Post-policy, it was generally acknowledged throughout the focus groups that prisoners had also turned to smoking alternative substances, often the contents of teabags or mowed grass mixed, where possible, with the contents of an NRT patch [4g]. A few prisoners suggested that this practice was more harmful than smoking tobacco [4h]. Several participants spoke about how tobacco was now being smuggled into prison and being sold at highly inflated prices amongst prisoners, in part, leading to more bullying and debt amongst inmates [4e, i].

Box 4. Potential and actual outcomes of going smoke-free: drug use, trading and smoking of other substances. ('R:' Indicates different contributions made during a focus group discussion)

[4a] It's just going to change the prison system completely, with no tobacco people can't smoke weed and stuff like that, people are going to start bringing in a lot more heroin, a lot more Valium, prescription drugs, legal high powders, I thought they were trying to get rid of legal highs in jails and this is going to increase it a lot more. ***Prisoner (FG16), HMP Exeter, pre-smoke –free.***

[4b] Because I think it will personally, because they will substitute the withdrawal of the tobacco with something else. Drugs as an ideal candidate, drugs in all its forms. ***Staff member (SG28), HMP Dartmoor, pre-smoke-free.***

[4c] R: My thing is there's going to be a lot more spice attacks cos, with no tobacco people are just going to be smoking spice straight.
R: Pure, raw!
R: On a pipe or bong whatever and there is loads of spice attacks as there is, let alone people smoking it without tobacco, that is my main concern for people safety. ***Prisoners (FG8), HMP Channings Wood, pre-smoke-free.***

[4d] R: I think our spice attacks went up with the no smoking.
R: A lot of cons were saying they were trying spice instead of, just for a smoke, they didn't care what they were smoking.
Staff member (FG19), HMP Dartmoor, post-smoke-free.

[4e] R: Tobacco is still coming in the prison, for people who really want to smoke you can still get hold of tobacco and it's the top commodity, black market commodity, you know, we are talking £200- £150 per ounce, people buying, a lad we know just paid £75 for half ounce.
R: Going smoke-free has just made it all worst, not just the black market for tobacco, it's dearer, people are getting in more debt.
Prisoners (FG3), HMP Channings Wood, post-smoke-free.

[4f] They are still getting tobacco and they are still smoking it, all it's done is driven it underground just like any other illicit substance in prison, so the price has soared and you've got added bullying associated with it as well. ***Staff member (FG19), HMP Dartmoor, post-smoke-free.***

[4g] R: With the non-smoking thing, what I think is a big craze going through the prison at the moment is where, people are smoking the flavoured tea bags, they are scrapping the nicotine off the back of the patches and sprinkling that into the tea, and smoking that.
R: To get a hit!
R: That is quite common practice. ***Prisoners (FG7), HMP Exeter, post-smoke-free.***

[4h] R: smoking nicotine patches, so you've got all the chemicals and the glue, it's horrible
R: so basically what they are doing is, it's worse than the smoking. ***Prisoners (FG2), HMP Channings Wood, post-smoke-free.***

[4i] The amount of tobacco now that's coming over the fence. Lots of it, and there is proven photographs of what's come over, so it's now become trafficking and the cost of it is phenomenal. ***Staff member (FG20), HMP Erlestoke, post- smoke-free.***

Stopping smoking: cessation services, NRT and electronic cigarettes

Demand for smoking cessation clinics and purchasable stop smoking aids, such as NRT and electronic cigarettes, increased with the introduction of the smoke-free policy, and issues faced accessing or using these are outlined here (Box 5.). Prisoners described long delays in getting onto the smoking cessation clinics (run through the local healthcare provider, offering free NRT and behavioural support), often taking months to get support [5a]. Staff said delays were due to initial uncertainty over NRT funding, lack of equipment (for example, CO monitors) and trained staff members to run the cessation clinics [5b]. Several prisoners thought the cessation clinics were good, though some of these felt that the eight to ten week course of NRT on offer was not long enough [5c]. Some staff members reported that healthcare staff were being intimidated by prisoners to provide NRT, as a consequence of NRT having become a tradable item among prisoners post-policy. Several prisoner groups were shocked by the high cost of NRT products and electronic cigarettes through the canteen provider; especially as there were long waiting lists to access free NRT in cessation clinics [5d]. The purchasable electronic cigarettes (brands; Brio, VIPure, blu Sky) were considered poor quality and not fit for purpose by prisoners [5d, 5e]; often resulting in them being returned to the canteen supplier. Prisoners said they could not afford to buy enough electronic cigarettes to match the equivalent amount of tobacco they were buying pre-policy [5e].

Box 5. Stopping smoking: cessation services, NRT and electronic cigarettes ('R:' Indicates different contributions made during a focus group discussion)

[5a]..Luckily I put it in [an application to healthcare] early enough, I put my app in over three and half months before that [the smoke-free date], so people who left it till the last minute, they had to go without for quite a while which led to a lot of, and obviously some people still had tobacco left and whatever, so that lead to a bit of animosity, you know what I mean, people arguing over what was left because they didn't have any replacements. I think that could have been handled a bit better. ***Prisoner (FG3), HMP Channings Wood, post-smoke-free.***

[5b] R: I think before they went live with it [smoke-free] there was over 300 had signed up to the smoking cessation clinics, that's massive, when you consider 75% of the population smoke, over 300 had signed up to that, so that's nearly all of them I would have thought had signed up to it.
R: Which is good that they did, however I think they had difficulty with keeping up with them, that's the problem, so no I don't think the support is there mainly due to the lack of staff to be able to do it, cos its nursing staff that do it….
R:….300 odd prisoners individually needing support, I mean that's a lot of hours.
R: And that's the only way that they get their patches as well, by going to the cessation, so sometimes it's being missed and they're not getting their patches and going longer than they should, that creates tension. ***Staff members (FG26), HMP Exeter, post-smoke-free.***

[5c] Yeah I've done the, the smoking cessation, they were brilliant and it helped but it's just a 10 week course and who's to say in 10 weeks I've packed up smoking and I don't ever want a cigarette again, they put a cut off, I don't know, you should do like when you go to a doctor, if I've got an illness the doctor will eventually sign me off and say yeah ok, your fine now you don't need me anymore…..And it's ripping me off on the canteen, for something that I wasn't given a choice to do, so they are charging me £18 for 4 packets of mints. ***Prisoner (FG6), HMP Dartmoor, post-smoke-free.***

[5d] R: the decent one [e-cigarette] is £5.99 and it's still crap, it's still the one you get on the market, do you know what I mean, the ones you get in all the petrol stations and that, crap
R: I've seen the February canteen list, smokers patches are on there for £24….who can afford £24, we only get £15 a week anyway so how we going to afford them?
R: so if you've got someone of a standard job and they are only earning £10 a week on it, they are not going to afford no patches, then you are going to get everyone going to healthcare and the queue is going to be out the door and you are going to be sat waiting withdrawal symptoms and then everyone will be having fights cos they are stressed. ***Prisoners (FG17), HMP Exeter, pre-smoke-free.***

[5e] R: Only that the e-cigs are dearer than the tobacco I think
R: Yeah, they are not very good, they are not very good, they only last 2 minutes, I mean in the long run, if you say you smoke, between 2-3 ounces which I think most people did, 2-3 ounces per week on average, I mean, the money you would have to spend on the e-cigs to measure up to that would be 5, 6, 7 fold.
R: If you smoke those e-cigs like you did with a normal cigarette you're going through like 2 or 3 a day, which is like a tenner a day.
Prisoner (FG3), HMP Channings Wood, post-smoke-free.

Changes in the prison environment and health due to the smoke-free policy

The smoke-free policy brought about positive changes for both prisoners and staff members in their working and living conditions and general health (Box 6). It was acknowledged throughout the staff and prisoners focus groups that the prison environment was now cleaner, healthier and with lower levels of SHS since going smoke-free [6a]. Prisoners who had smoked pre-policy recalled how they now felt physically healthier, smelt cleaner and that their sense of smell and taste had returned since stopping smoking [6b]. A few staff members and prisoners raised concerns about personal and second-hand harms from electronic cigarette vapour. A minority of prisoners complained about putting weight on since going smoke-free, as they were now purchasing food with the money they would have previously spent on tobacco. A few prisoners were happy that they were now able to save money previously spent on tobacco or how they could now purchase more expensive items from the prison catalogue [6c].

Box 6. Changes in the prison environment and health due to the smoke-free policy ('R:' Indicates different contributions made during a focus group discussion

[6a] R: That I don't have to see fag butts around the place, I don't have to smell that smoke, it's not in my clothes, I'm not having to go into people cells and do my fabric checks when someone has been smoking in there. ***Staff member (FG20), HMP Erlestoke, post-smoke-free.***

[6b] I won't smoke again I don't think, I think about the smell and it's just not nice, not a nice taste and smell, cos when you don't smoke for a certain amount of time and you can taste the difference, cos you get your taste buds back don't you. ***Prisoner (FG2), HMP Channings Wood, post-smoke-free.***

[6c]…I struggled for ages to buy some trainers, cos you've got to save up on your spends account in here, save money from the week before, it builds up week after week after week, and then as soon as you've got enough, you can put an order in for the catalogue, and I'd be getting to a certain amount of money and then blowing it, you know what I mean. So now, since the smoking ban, I've got a pair of trainers I was after, I've got a radio that I was after and I've got an x-box coming that I was after. As I'm doing a long time, so all the things to make myself comfy.
Prisoner (FG6), HMP Dartmoor, post-smoke-free.

4.5 DISCUSSION

4.5.1 Summary of findings

The questionnaire and focus group data from prisoners and staff before and after the introduction of a comprehensive smoke-free prison policy offer the first empirical insight into the effect and impact of the policy introduction in English prisons. At the outset of the study, smoking prevalence among prisoners was 65%, and among staff members 12%. Data on time to first cigarette after waking indicate that prisoners were highly tobacco dependent. Prisoners also reported taking great pleasure from smoking.

The findings demonstrate that the intention to implement a smoke-free policy was generally perceived to have been clearly communicated throughout the establishments, but that there were widespread concerns pre-policy among staff members and prisoners that going smoke-free would lead to an increase in disorder, self-harm, drug use and trading of tobacco. Post-implementation, over half of the prisoners and staff members surveyed reported an increase in disorder and drug use due to the new policy however to the contrary, focus groups discussions suggested that the introduction of the policy went relatively smoothly. Focus groups discussions suggest that the fears and concern relating to an increase in disorder, violence and drug cited pre-policy were predominantly unfounded. Going into the smoke-free policy, prisoners considered the policy to be a breach of their human right to smoke, and reported lower desire to quit than recorded in previous studies.

In preparing to go smoke-free, 60% of smoking prisoners reported using some form of NRT in an attempt to cut down or quit in advance of policy implementation. However the same proportion of prisoners stated they did not receive enough support from the prison to stop

smoking. The reasons for this disparity are not clear but might include prisoners not wanting to quit, difficulties accessing smoking cessation clinics, the perception that the duration of free NRT prescriptions (eight to ten weeks) was insufficient, and frustration at having to buy electronic cigarettes which were widely reported to be of poor quality.

Support for the future introduction of the smoke-free policy throughout England was much higher among staff members (70%) than prisoners (23%). Only a quarter of former smoking prisoners stated that they would remain smoke-free once released or transferred to a smoking establishment.

4.5.2 Strengths and limitations

This study used a multi-method approach to elicit opinions and other data from individuals directly affected by the smoke-free policy in the four pilot sites in England. Of those completing the questionnaire (and attending a focus group) post-policy, 71% of prisoners and 95% of staff had been living or working at the prison during the implementation period, enabling most participants to give an informed assessment of how they felt the policy was implemented. This, combined with our inclusion of four prisons, data collection both before and after implementation and the addition of air quality monitoring (See Chapter 5) distinguishes the present study from most assessments of smoke-free policy carried out in other countries, which have tended to involve a single prison with either air quality testing or small scale qualitative interviews, and often collecting data only after the smoke-free policy has been implemented (143, 150, 151, 180).

We recognise that participants in this study may not be truly representative of prisoners and staff members living or working at the four pilot sites. We were of necessity limited to

taking opportunistic samples, and to restricting participation to individuals available on the days that the researchers visited. It has been recognised that conducting research in prison settings often dictates the use of an opportunistic sampling (112, 199, 200). Recruitment of staff was also limited to those attending monthly full staff meetings, which not all staff could or chose to attend. Recruitment of prisoners occurred largely from those engaged in purposeful activity throughout the prison, and although efforts were made to visit residential wings to distribute or leave questionnaires for those unemployed, this typically elicited no response. We are therefore likely to have recruited prisoners who were relatively motivated or engaged in prison life, and although this does not *per se* necessarily impinge on the representativeness of our participants in relation to smoking behaviour, we are also aware that many prisoners who declined did so because they did not think a questionnaire about smoking was applicable to them. The SPS survey most recently (2015) achieved a 55% response rate (98), compared to this study which achieved a 18.3% pre- and 14.5% post- response rate. The SPS survey, in its 15th year of circulation, is publicised weeks prior to data collection, gives prisoners an information leaflet the evening before it is issued, distributes the survey to all prisoners and offers translation into four different languages. However, resources precluded us from adopting this more comprehensive approach to recruitment.

It is not possible to verify the accuracy of all self-reported prisoner and staff member questionnaire responses and focus group themes, but their consistency pre- and post-policy, both between focus groups and in relation to questionnaire responses, suggest that they were valid. The researcher did however have access to prison data on the number of prisoners who were current smokers as outlined in prison healthcare records along with the number of prisoners who ordered tobacco from the canteen supplier (DHL) in three of the four establishments around the time of the first survey. All three prisons had higher

smoking prevalence recorded in their healthcare records and a lower number of prisoners buying tobacco than the smoking prevalence observed in this study (for example: HMP Channings Wood, healthcare database, 82% smoking prevalence; canteen sales, 58% of prisoners ordering tobacco; current study, 65% smoking prevalence). These figures confirm what was previously thought, that healthcare and canteen figures are slightly biased in their recording of smoking prevalence. This is thought to arise from tobacco having functioned as a form of currency and being widely trading amongst prisoners, providing prisoners with an incentive to acquire tobacco. Our 33 focus groups, which involved 241 participants, achieved data saturation and hence are likely to be representative of participant opinion. The duration of the focus groups tended to be shorter post-policy, the researcher noted that prisoners and staff did not have as much to contribute in these discussions compared to groups held pre-policy; due to the perceived success of the smoke-free policy some participants reported having little to discuss post-implementation.

As smoking was prohibited at the time of the second round of focus groups, participant discussion topics may have been biased in order to appear compliant with the new policy rather than providing a true account of the smoke-free policy. To try to encourage confidence to speak openly we ensured that most (but not all) prisoner focus groups did not have a staff member present, and that staff member groups were held within job specific groups, thus involving individuals of similar employment rank. Due to prisoners concerns over disclosing their tobacco use post-policy, the question relating to prisoners self-reported smoking was removed from the post-policy survey (see 4.3.2.1 Questionnaires, for further explanation). It is therefore not possible to determine smoking prevalence post-policy from the survey findings however the use of tobacco was discussed during prisoner and staff focus groups discussions post-policy (mainly focussing on the use of ‘homemade’ cigarettes). The findings from the air quality monitoring study (see Chapter

5) aim to independently verify the success of the policy in reducing prisoner smoking post-smoke-free policy. We also plan to obtain objective validation of concerns over violent or other disruptive behaviour, fires, healthcare use and canteen sales from prison records; this analysis has not yet been carried out.

A number of logistic issues hindered of data collection for this study, including: regime changes, episodes of lock down, and re-arranged full staff meetings, but we made every effort to overcome these barriers and to gather as much data as possible within this unpredictable and challenging environment. Typically, prisoners in England are Wales held in closed establishments (Category A-C), are white British males, between 30-39 years of age, serving a sentence of over four years (62). Although this largely fits with the prisoner characteristics of those surveyed in this study, caution should be applied when generalising these findings to other prison settings, for example, Category A establishments and the female prison estate. However, what this study does offer is the first exploratory insight into how a comprehensive a smoke-free policy is introduced in the first cluster of English prisons, in part, evaluating the success and informing the implementation to other prisons in future.

4.5.3 Interpretation in context of other studies

Our smoking prevalence estimate of 65% for prisoners was lower than those quoted in other studies conducted in the UK male prisons (80%) (98, 109, 110) and those reported in staff interviews from Chapter 3 (70-90%, of which two prisons surveyed, HMPs Exeter and Erlestoke, were the same), but remain four times higher than the prevalence of smoking in the general population of England (201). The variation in the smoking prevalence between the four prisons surveyed could be related to the function of the prison and the type of

prisoners residing there. Anecdotally, lower smoking prevalence rates are reported amongst VPs in England compared to the main prisoner population. Of the four prisons surveyed, HMP Dartmoor, which has an integrated regime with around 80% of the population VPs, had the lowest prevalence of smoking recorded pre- policy (57%). The only local prison surveyed, HMP Exeter (holding remand and sentenced prisoners), had the highest smoking prevalence pre- policy (78%). Higher prevalence rates have previously been reported among those awaiting sentencing (109) compared to who have already been convicted. It has also been reported that boredom exacerbated by increased cell time (offenders at HMP Exeter reported the highest amount of in-cell time) plays a role in smoking relapse on entering prison (202). Our finding of high levels of dependence on smoking, and of long smoking histories, is entirely consistent with existing literature relating to prisoners smoking behaviours and practices in prison (109, 118, 121) and with staff member interviews completed in Chapter 3.

Little is known about smoking amongst UK prison staff. One Scottish prison reported smoking prevalence of 75% (125) (report no longer available but referred to in a literature review (107)); however studies conducted in Germany (126) and the US (127) reported 28% and 24% smoking prevalence respectively. In our study, smoking prevalence among staff was lower than all of these figures and indeed, at 12-13%, lower than the general population of England, the South-West region (England 16.9%, South-West 15.5% (201)) and those of the same mean age of staff surveyed in this study (19.5%) (9).

A common theme throughout prisoner and staff data collection prior to the smoke-free policy related the potential negative impact of the policy on the prison, and fears of increases in disorder, stress, drug use, trading, bullying, and self-harm. However, apart from one major disturbance at HMP Erlestoke, to which as described in focus group

discussions, smoke-free was thought to have contributed but not exclusively to have caused, there were no other major incidents reported during this period. Post-policy, staff largely spoke about their surprise at how smoothly the transition went. This discrepancy between anticipated adverse effects and actual occurrences reported had been described previously in mental health and prison settings (49, 50, 181). Despite these findings, the same cannot be said for prisoner and staff survey responses. Of those surveyed post-policy, over two thirds of prisoners and half of staff members felt there had been an increase in incidents and drug use since the implementation of the policy. The discrepancy in the focus group and questionnaire findings may be due to the wording and leading nature of the questions relating to incidents and drug use post-policy (for example, 'Do you think there has been an increase in prisoner incidents due to this prison going smoke-free? yes/no'), therefore findings from the focus group may give a more balanced view on incidents or drug use post- policy. As previously outlined, without routine prison data of reported incidents over this period is it difficult to fully evaluate the impact of the policy on prisoners, and in any case, many prisoner-to-prisoner conflicts go unrecorded. Prisons in New Zealand, Northern Territory's of Australia, and Les Nicolles prison in Guernsey who largely have a very similar prisons system to that in England and Wales, reported no significant increase in disorder, violence or drug use post- smoke-free policy however as previously outlined in the Chapter 1, these evaluations have weak methodologies or are based on opinion and not empirical research (150, 151, 154).

Desire to quit amongst prisoners in the UK has previously been reported as ranging between 79% - 41% (HMP Cardiff 79%, SPS 56%, North-West of England 41%) (98, 111, 131). Our findings fall at the lower end of this scale (39%), an explanation of this figure in the present study is not clear, though it is possible that this reflects the influence of the imminent prospect of enforced quitting, rather than quitting by choice and at some

unspecified point in the future. A high proportion of prisoners surveyed after the introduction of the policy reported using NRT products, cessation clinics and electronic cigarettes to help them cut down and quit and a third reported using no support to stop, but a majority also reported that they felt they did not receive enough support from the prison to help them move towards a smoke-free life. This disparity requires further investigation.

Concerns were raised amongst prisoners and staff relating to the possible first-hand and second-hand harms of smoking alternative substances (for example, the contents of NRT patches mixed with tea leaves). Similar fears in Australia led researchers to conduct some basic testing of these make-shift cigarettes (203). Spectrometry testing showed that it was possible to obtain nicotine from cigarettes made from NRT patches, and that these hand-made cigarettes also generated high levels of other toxins. It was unclear in the one year follow-up of New Zealand's smoke-free prison estate (150) whether these practices were still on-going, and as data from prisons in the Northern Territory of Australia suggests, the misuse of patches could be attributed to their distribution not being monitored and therefore given out freely to prisoners at any time (unlike the English pilot sites where they were distributed singularly either at during morning medication distribution or at their cessation clinics).

4.5.4 Successes and unforeseen issues with the smoke-free prison policy

Almost all prisoners and staff members were aware, in advance of policy implementation that their establishment was going to become smoke-free. The importance of a comprehensive communication strategy with stake holders (such as the courts and the police) has been highlighted in other countries (150, 151). In our study there were some

examples of prisoners being unaware of the smoke-free policy on reception (mainly among those transferred from other prisons) which needs to be addressed in future implementation. Although the introduction of the policy was well publicised there was prisoner uncertainty over why a full comprehensive policy had been planned, and fears regarding possible negative outcomes post- policy. To overcome this a future communication strategy to encompass the reasoning behind, and address anxieties over the introduction of such a policy could be used: for example, education on why the policy is being introduced, and using the pilot sites as case studies to demonstrate smoke-free policy success. As previously outlined, prior to the policy staff members expressed reservations over implementation and the potential impact the policy would have on the day-to-day running of the prison. Nevertheless, nearly two thirds of staff members supported the move to smoke-free pre-policy, and post-policy 70% supported the move to smoke-free throughout the rest of the English prison estate. The importance of staff support during the introduction of a smoking policies has previously been outlined by Cropsey and Kristeller (204), who attributed, in part, low smoke-free compliance to poor staff support.

Three months before the smoke-free implementation there were uncertainties relating to funding and staffing of prison smoking cessation services. This resulted in many prisoners not being able to access smoking cessation services prior to the smoke-free dates. Confirming funding avenues in advance of the announced smoke-free date and potentially a longer lead in time could have alleviated this. A long lead in time (one – two years) with cessation services available throughout this period were judged to have been vital in the success of smoke-free policies in New Zealand and Australia's Northern Territory's (150, 151). A longer lead in time and the introduction of smoke-free wings prior to the implementation could also dilute the opposition towards the complete smoke-free policy

alongside giving those highly addicted lifelong smokers an extended period to cut down before finally quitting. However it is also important to trade these benefits against the adverse health effects of a longer period of smoking for both prisoners and staff.

From the researcher's perspective, having visited the four sites three months prior to implementation, the challenge of going smoke-free appeared to be greater for HMP Exeter. Compared to the other three training prisons in this study, HMP Exeter, as the local prison, had the highest turnover of prisoners, an unsettled population (holding both remand and sentenced prisoners), large waiting lists for healthcare cessation support and had been chosen to be the first to implement smoke-free in England. During the pre- policy field work at HMP Exeter, it soon became clear that there were huge concerns from the healthcare services relating to staffing and funding cessation services at HMP Exeter. Findings from this study would suggest that HMP Exeter was as successful as the other three pilot prisons in implementing smoke-free; having similar levels of NRT usage, improved living conditions and reporting no major incidents. Post-policy, discussions with the healthcare and mental health teams were largely positive, they reported that after the researchers pre-policy visit funds soon became available for smoking cessation (training, staffing and NRT) and although implementation increased their work load, at time to the detriment of their other duties or services, they felt it had been a successful roll-out.

Participants acknowledged that prisoners were now trading and smoking constituents of NRT products. One prison reported intimidation of its staff members for NRT patches, forcing them to cease supply of NRT patches during morning medication distribution to eliminate threatening behaviour to towards its staff and instead only distribute NRT to prisoner during attendance to the smoking cessation clinic. Unlike other international smoke-free polices (151), controlled distribution of NRT products for those registered on

the smoking cessation clinic was reported throughout the early adopter sites. It is hoped, over time, that the practice of illicit NRT use will decline in prisons with stable sentenced populations as fewer prisoners need to access the smoking cessation course, reducing the amount of NRT products prescribed. Local prisons will however always need first line cessation services to deal with those entering prison from the community. It is also important to explore the pricing of NRT, since current supplies available to purchase from the canteen shop are priced above the average prisoner weekly wage.

The use of electronic cigarettes to assist with prison smoke-free policies is rare outside the UK. A report from Guernsey prisons which used purchasable electronic cigarettes to facilitate the transition to smoke-free in 2013 hailed the policy as a success, but there is no specific mention on the role electronic cigarettes played in the implementation (154).

Unsurprisingly, the proportion of prisoners who had ever made an electronic cigarette purchase doubled post- policy to 41.5%, with 35% of smokers stating they had used an electronic cigarette to help cut down on tobacco consumption or quit. This aside, prisoners and staff often spoke about the poor quality and limited usage of the disposable electronic cigarettes available from the canteen supplier. HMP Berwyn, a newly opened smoke-free establishment in Wales, will reportedly be the first prison in the UK to trial prisoners use of a vaporised electronic cigarette with a refillable reservoir (205).

Prisoners and staff reported positive outcomes from the smoke-free policy, both reporting a cleaner and healthier environment to life and work. Prisoners also described physical health and monetary benefits from ceasing tobacco use. In spite of this, post- policy, just 23% of all prisoners supported introducing a smoke-free policy throughout the rest of the English prison estate, and only a quarter of prisoners who had smoked pre-policy stated

they would remain smoke-free in the future (once released or transferred to a prison without a smoke-free policy). For former smokers in smoke-free prisons, high intent to relapse and actual relapse rates have been reported elsewhere (156, 206, 207). One study reported that at three weeks post- release, 84% of former smokers had relapsed, on average having their first cigarette six days after release (206). These studies suggest forced abstinence alone during imprisonment has little impact on post-release smoking status. However work by Clarke and colleagues in the US has found behavioural intervention prior to release greatly improves abstinence after release in to the community (208).

4.5.5 Conclusions

Despite multiple concerns, the implementation of smoke-free policies in the first four English early adopter prisons has proved successful, with improved health, environmental conditions and little evidence of adverse effects. There are lessons for wider implementation, particularly in relation to setting clear timelines, ensuring that prisoners can access cessation services in advance of policy implementation and consideration of current electronic cigarettes brands available to prisoners. These concerns need to be addressed to safeguard the future successful implementation, and in turn these may impact on some of the adverse impacts of smoke-free (smoking constitutes on NRT patches and education on why smoke-free is being implemented).

5 AN EVALUATION OF FOUR EARLY ADOPTER PRISONS BEFORE AND AFTER INTRODUCING A COMPREHENSIVE SMOKE-FREE POLICY: AIR QUALITY MONITORING STUDY

5.1 INTRODUCTION

As previously outlined in Chapter 4, in 2015 NOMS announced the pilot implementation of a comprehensive smoke-free policy in four prisons in the South-West of England from March 2016. The primary purpose of this smoke-free policy was to lower the levels of SHS exposure to all those who live and reside there, and in turn, improve the health of smokers who quit and non-smokers who will no longer be exposed to unsafe levels of SHS.

International air quality studies from New Zealand and the US have shown that comprehensive smoke-free polices (no smoking allowed on the prison site) are effective in substantially reducing SHS concentrations (142-144). All of these studies used markers of SHS, respirable particulate matter (143, 144) and airborne nicotine (142) to sample pre- and post- policy. These studies examining comprehensive smoke-free polices observed a reduction between 57-80% in SHS concentrations pre- to post- policy (142-144). The potential health benefits of introducing a comprehensive smoking ban have been outlined in a study carried out in the US, using time series analysis over 10 years of smoking bans being introduced. The study found that prisons that implemented a smoking ban had a 9% reduction in smoking related deaths, and that bans in place for longer than nine years were associated with a reduction in cancer deaths (140).

Within the UK, all HMYOIs in England and Wales (eight in total and holding only offenders under the age of 18 years) went comprehensively smoke-free prior to July 2007. Two sites (HMYOI Wetherby and HMYOI Ashfield) had a two year lead in to their smoke-free policy and offered cessation support to both prisoners and staff members (157, 209). Isle of Man prison was the first adult prison to go completely tobacco-free in 2008 followed by Guernsey's Les Nicolles prison in 2013. The comprehensive smoke-free policies introduced within all of these prison sites throughout the UK have been previously described as successful (108, 154, 157, 158, 209) however there is little in the way of empirical research evidence to substantiate the claims with most simply offering commentary on how their policy was implemented.

5.2 AIM

As part of an evaluation of the 2016 comprehensive smoke-free policy in four English prisons (which also includes findings presented in Chapter 4), this study will assess indoor air quality on wing landing locations three months before and three months after the introduction of the policy. By measuring concentrations of $PM_{2.5}$, this study intends to determine whether the new policy is sufficient in reducing concentrations of SHS which have previously been recorded as unsafe in English prisons (171, 183). Samples collected post-policy will also be considered alongside the current standards for indoor air quality produced by the WHO, which recommends that $PM_{2.5}$ concentrations alone should not exceed 25 μg/m³ as a 24-hour mean, or 10 μg/m³ as an annual mean (145), to establish whether SHS concentrations post-policy are within these recommended limits.

5.3 METHODS

5.3.1 Study prisons

Data were collected from four male English Prison Service establishments selected to go smoke-free between April and May 2016. For more information on the smoke-free early adopters, to include, category and function, structural design, number of wings, prisoner roll count, data collection dates and smoke-free dates see Chapter 4, 4.3.1 Study prisons and Table 4.1 Study prison surveyed, smoke-free and data collection dates.

All four prisons had a non–smoking policy for staff members within the perimeter wall. Before the smoke-free policy was implemented, prisoners were only allowed to smoke in their cell, though smoking still occurred regularly in the exercise yards. The healthcare unit at HMP Exeter was the only designated 'smoke-free' wing with prisoners only being allowed to smoke outside. The four prisons were visited by two researchers (LJ & CH) for three or four weekdays (depending on staffing availability as escorts), three months pre- and three months post- each prisons smoke-free implementation date. Air quality monitoring data, questionnaire and focus group data (findings in Chapter 4) were collected at the same time by researchers (LJ & CH) during each prison visit. The researchers were assigned a prison officer during their data collection to gain access to all the wings landings for placement of SidePak air monitors and also advise if any areas were currently not-accessible to researchers (normally due to prisoner incidents).

5.3.2 Data collection

$PM_{2.5}$ concentrations were measured using a battery-operated SidePak Personal Aerosol Monitor AM510 (TSI Inc, MN, USA) fitted with a $PM_{2.5}$ impactor and set to a calibration factor of 0.30, as appropriate for tobacco smoke (172, 173). In accordance with manufacturer's instructions, SidePak devices were cleaned, the impactor re-greased, zero-calibrated and the flow rate set at 1.7 l/min before each use. $PM_{2.5}$ measurements were logged at one minute intervals, with each one minute data point being an average of 60 seconds of sample measurements, as in work outlined in Chapter 2 (171). Data were collected over three to four consecutive weekdays, and on the same weekdays days both pre- and post- policy (see Table 4.1 Pilot sites surveyed). Two researchers (LJ & CH) trained in the use of air quality monitors placed the SidePak monitors in static locations on wing landings. Before the complete smoke-free policy was implemented, smoking was only permitted inside prisoners' cells, and although some prison wings were designated smoke-free (that is, prisoners were not allowed to smoke in cell), none of these wings were studied pre-policy.

Researchers kept a log for each air quality sample taken pre-policy detailing the prison ID (for example, EX = HMP Exeter), SidePak monitor serial number, date and day, wing location and position of monitor, time the monitor was switched on and off, any movement or tampering of monitor, and visit number. Each of the datasets collected pre-policy were then given a unique code; for example, prison (EX) unique identifier (12) and visit number 1 (pre) or 2 (post) (for example, EX12V1). Fixed locations on wings landings were chosen to cover a range of wing designs and function. The monitors were usually placed half way down the wing, above head height and away from open outside doors, windows, or cooking equipment. Where possible, researchers placed monitors in discreet

locations to avoid disrupting prisoners' normal behaviour. Officers on each wing were advised where each monitor had been placed and for how long. All monitors at HMP Dartmoor were placed at one end of the unit next to the wing office, as air quality monitors had been taken by prisoners during earlier sampling. Due to the landing design of several wings at HMP Channings Wood, air quality monitors had to be placed in a cupboard which inhibited air flow (samples affected identified in Appendix 7.23). Pre-policy sampling logs and unique codes were used post-policy to guide repeat data collection (for example, EX12V1 paired with EX12V2); where feasible placing SidePak monitors on the same day of the week, wing location, position on landing, start time and duration of sample.

5.3.3 Data analysis

Each set of sampling data was downloaded from the monitor using Trackpro 4.6.1 software and transferred to STATA 13 (alongside the unique ID) to generate descriptive statistics including mean, range, median, interquartile range, and the proportion of time the $PM_{2.5}$ concentration exceeded WHO 24- hour mean $PM_{2.5}$ upper limit of 25 μg/m³ (145) for each data set. Datasets were then matched using their unique ID, and corresponding sample times matched for comparison pre- and post-policy. Data with no matched sample time were discarded, reducing the amount of sampling minutes to compare. For unpaired and paired analyses, the percentage change of $PM_{2.5}$ concentrations were determined by comparing the mean and median $PM_{2.5}$ levels overall and in each prison before and after the smoke-free legislation. The Wilcoxon signed-rank sum test was used to assess statistical significance between paired pre- and post- policy $PM_{2.5}$ concentrations in each establishment. Although $PM_{2.5}$ data distributions were skewed, we present arithmetic mean figures throughout this chapter since these are used by the WHO to define their upper guidance limits.

5.4 RESULTS

5.4.1 Overview of air quality data collected

A total of 200 datasets were collected from 29 wing landings locations throughout the four prisons (for summary data of all individual datasets collected, see Appendix 7.23). One SidePak monitor was destroyed during pre-policy data collection and on 12 occasions monitors were tampered with by prisoners (blocked air inlet hole, monitor turned off, tampering and breakage). After discarding data from monitors that had been damaged or otherwise tampered with, 187 datasets, 113 pre- and 74 post-policy, were available for analysis. The smaller number of datasets collected post-policy arose from damage to monitors pre-policy, and limited access to certain wings on the data collection days post-policy. On sampling days both pre- and post-policy all wings, apart from the CSU, were at or near full capacity, with prisoner occupancy per wing ranging from 19 to 180. Hours of data collected pre-policy were 893.52 (37 days 9hrs 31minutes) and post-policy were 554.3 (23 days 2hrs 18minutes). Samples were predominantly taken during waking hours. Pre- and post-data collection to include the number of wings sampled, datasets collected, total sample time and total mean sample time per wing for each prison pre- and post- smoke-free are summarised in Table 5.1.

Table 5.1 Summary of all data sampled from the four early adopter prison pre- and post- smoke-free policy

	HMP Exeter		HMP Dartmoor		HMP Channings Wood		HMP Erlestoke	
	Pre-policy	**Post-policy**	**Pre-policy**	**Post-policy**	**Pre-policy**	**Post-policy**	**Pre-policy**	**Post-policy**
Wings sampled	5	5	7	7	8	7	9	7~
Datasets collected	33	20	24	14	32	22	24	18
Total sample time (hr:min)	275:49	147:56	194:29	95:40	245:33	193:53	181:40	116:49
Total mean sample time per wing (hr:min)	22:55	16:26	27:47	15:57	20.27	21:33	22:44	16:41

~HMP Erlestoke closed two wings in June 2016, after the smoke-free policy came into effect

5.4.2 Data combined, comparing $PM_{2.5}$ concentrations for unpaired and paired data collected pre- and post-policy

Table 5.2 shows combined data for all four prisons sampled, summarising the overall mean and median $PM_{2.5}$ concentrations for unpaired and paired data alongside the percentage reduction from pre- to post-smoke-free. Although substantially more samples of $PM_{2.5}$ concentrations were compared in the unpaired datasets, summary outcome measures were broadly similar to those in the paired datasets (paired for prison, wing landing location, day of the week and time sampled); paired data will be discussed throughout the rest of this section. Mean $PM_{2.5}$ concentrations on wing landing locations before the introduction of smoke-free were 39.10 µg/m³ and after were 13.42µg/m³, representing a 66% reduction in $PM_{2.5}$ concentrations. After the smoke-free policy, there was a 69% reduction in median $PM_{2.5}$ concentrations (from 26µg/m³ pre-policy to 8µg/m³ post-policy). The mean $PM_{2.5}$ concentration pre- policy exceeded the WHO 24- hour mean $PM_{2.5}$ upper limit of 25 µg/m³, and continuously monitored levels were above this limit for more than half of all sampling time.

Table 5.2 Summary of sampled $PM_{2.5}$ concentrations from four early adopter prisons combined, pre- and post- smoke-free policy for unpaired and paired data

	Unpaired data		Paired data	
	Pre-policy	**Post-policy**	**Pre-policy**	**Post-policy**
Number of datasets (total sample time hr:min)	113 897:31	74 554:18	74 380:20	74 380:20
Arithmetic mean (and range) of $PM_{2.5}$ concentrations (µg/m³)	29.60 (0-1359)	12.27 (0-3073)	39.10 (0-1359)	13.42 (0-3073)
Arithmetic mean percentage reduction from pre- to post-policy	59%		66%	
Median (and IQR~) of $PM_{2.5}$ concentration (µg/m³)	20 (10-36)	7 (4-14)	26 (15-46)	8 (4-15)
Median percentage reduction from pre- to post-policy	65%		69%	
Percentage of time above 25 µg/m³^	40%	11%	51%	11%

^ WHO 24- hour mean $PM_{2.5}$ upper limit or 25 µg/m³

~IQR: Interquartile range

5.4.3 Within-prison comparison of $PM_{2.5}$ concentrations for paired data pre- and post-smoke-free policy

Paired data compared within the four establishments sampled (Table 5.3) demonstrate that all but HMP Dartmoor (see 5.3.2 Data collection, for problems with SidePak placement at HMP Dartmoor) had mean $PM_{2.5}$ concentrations pre-policy over the WHO 24- hour mean upper limit, and all had mean post-policy concentrations below this limit. All four prisons saw a statistically significant reduction in the $PM_{2.5}$ concentration pre-to post-smoke-free- policy ($p<0.001$). Figure 5.1 shows box plots of the distribution of $PM_{2.5}$ concentrations measured in each prison before and after the smoke-free policy. The horizontal line in each box represents the median value and the top and bottom of the box represent the 25th and 75th percentile, with the lines extending from the top and bottom of the boxes widening to the 5th and 95th percentile of the distribution. For ease of use Figure 5.1 has $PM_{2.5}$ concentrations over 500 $\mu g/m^3$ removed (these samples only fall outside of the 95th percentile for HMP Erlestoke and HMP Exeter).

HMP Exeter had the highest mean and median $PM_{2.5}$ concentrations pre-policy and the largest percentage reduction post- policy for these samples (mean reduction = 79% and median reduction = 81%). Excluding HMP Dartmoor, the three prisons lowered the time spend over the WHO 24- hour mean $PM_{2.5}$ upper limit from 13-20% to 3-5%. An example of the reduction in $PM_{2.5}$ concentration pre- to post-policy is presented in Figure 5.2, an example of the paired datasets sampled on a main residential wing at HMP Channings Wood.

Table 5.3 Summary of sampled $PM_{2.5}$ concentrations from each of the four early adopter sites pre- and post-smoke-free policy (paired data only)

	HMP Exeter		**HMP Dartmoor**		**HMP Channings Wood**		**HMP Erlestoke**	
	Pre-policy	**Post-policy**	**Pre-policy**	**Post-policy**	**Pre-policy**	**Post-policy**	**Pre-policy**	**Post-policy**
Number of paired datasets	20		14		22		18	
(total matched sample time hr:min)	97:57		70:57		125:50		85:36	
Arithmetic mean (and range) of $PM_{2.5}$ concentrations (µg/m³)	66.41 (2-678)	14.00 (0-635)	12.85 (0-121)	6.44 (0-30)	34.57 (0-1359)	14.62 (2-227)	36.14 (1-1058)	16.78 (0-3075)
Arithmetic mean percentage reduction from pre- to post-policy	79%		50%		58%		54%	
Median (and IQR~) of $PM_{2.5}$ concentrations (µg/m³)	42 (27-76)	8 (4-16)	11 (6-17)	6 (2-9)	27 (17-44)	9 (5-17)	29 (18-44.5)	8 (4-18)
Median percentage reduction from pre- to post-policy	81%		45%		67%		72%	
Percentage of time above 25 µg/m³^	20%	3%	1%	0%	18%	5%	13%	3%

^ WHO 24- hour mean $PM_{2.5}$ upper limit of 25 µg/m³

~IQR: Interquartile range

Figure 5.1 Box plots of $PM_{2.5}$ distributions in each of the four pilot prisons pre- and post-smoke-free policy. $PM_{2.5}$ concentrations sampled over 500 µg/m³ (only recorded at HMP Erlestoke and HMP Exeter) have been removed for the purposes of this figure

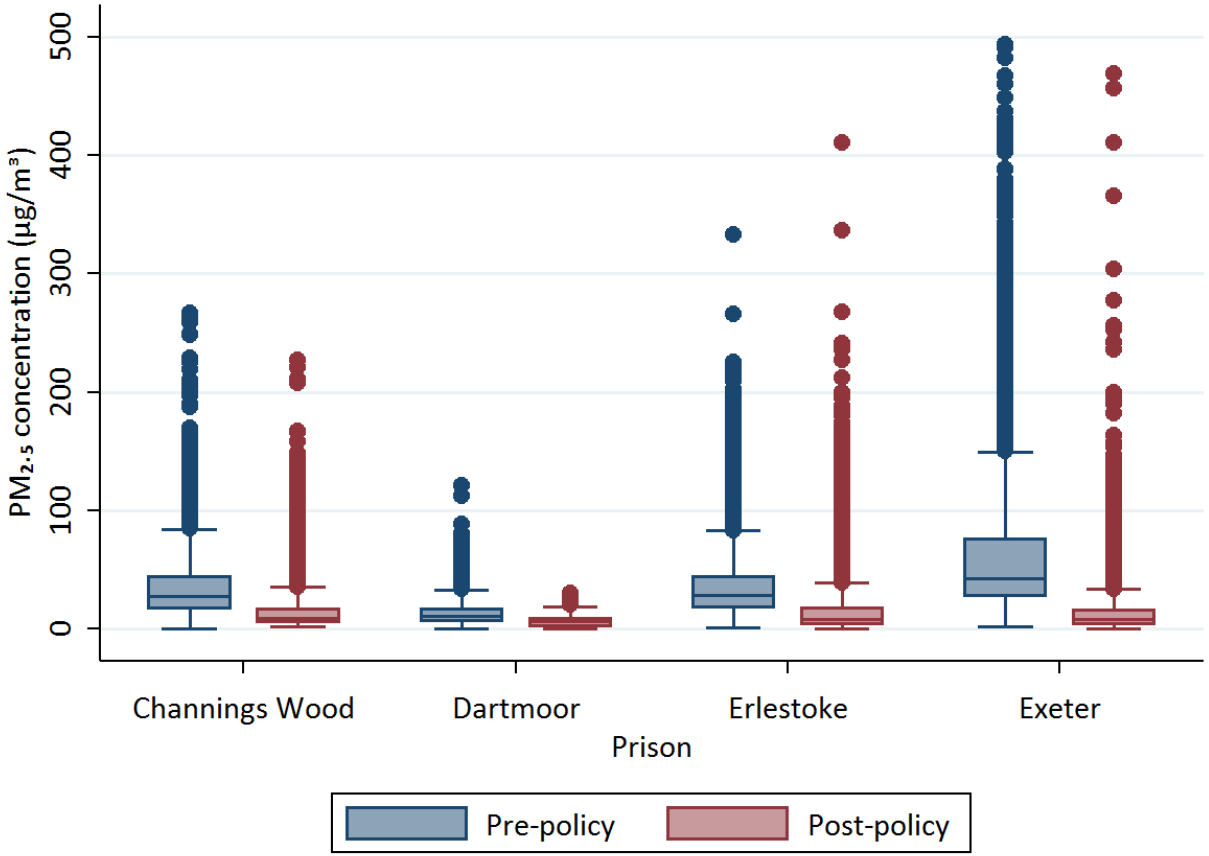
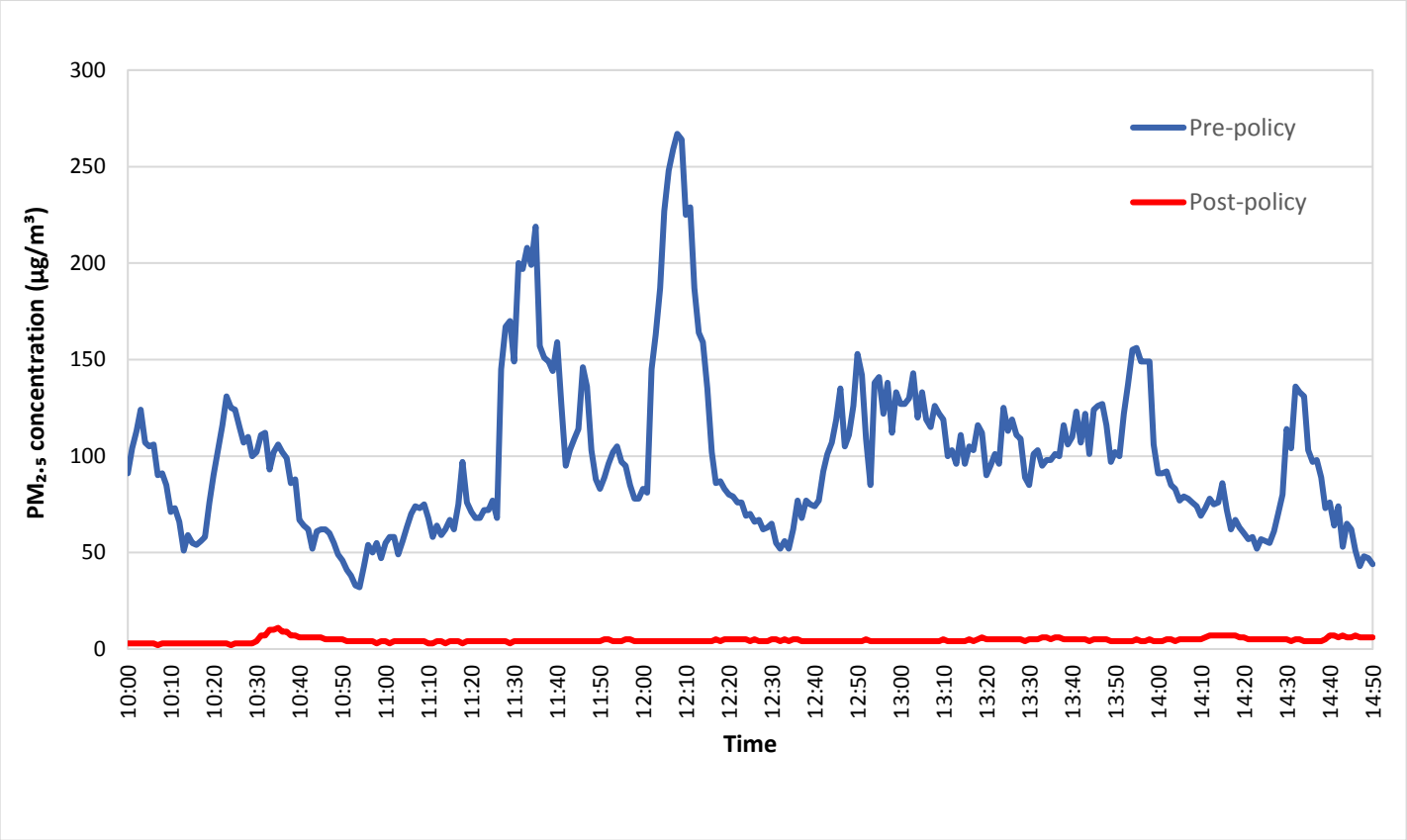


Figure 5.2 Concentrations of $PM_{2.5}$ sampled at HMP Channings Wood (Fleet wing) pre- and post-smoke-free policy



5.5 DISCUSSION

5.5.1 Summary of findings

This is the only study to compare particulate pollution on living locations in the first four prisons to go smoke-free in England, before and after the comprehensive policy. Our air quality measures, which used concentrations of $PM_{2.5}$ as a proxy for SHS, confirmed pre-policy levels well in excess of the WHO 24- hour mean $PM_{2.5}$ upper limit, with half of all sampling time over this recommended guidance level. There was a 69% median and a 66% mean reduction in $PM_{2.5}$ concentrations three months after the smoke-free policy had been introduced, compared to samples taken three months prior. All four prisons individually saw a statistically significant reduction in $PM_{2.5}$ concentration pre-to post-smoke-free- policy ($p<0.001$).

5.5.2 Strengths and limitations

Study limitations relating to the use of SidePak monitors (for example, battery life limits) and the validity of $PM_{2.5}$ concentrations as a marker for SHS (since SHS is not the only source of $PM_{2.5}$) in a prison environment have been detailed elsewhere (see Chapter 2 (171)). There were restrictions on where SidePak monitors were placed at HMP Dartmoor and HMP Channings Wood due to security concerns and the design of the wings (outlined in 5.3.2 Data collection). The readings from these SidePak monitors located indirectly may have underestimated the true $PM_{2.5}$ concentration on the wing locations pre-smoke-free policy. Nevertheless, reductions in $PM_{2.5}$ concentrations were still observed in the majority of these samples post-policy. Similar issues with placement of SidePak monitors on wing locations were described in work carried out in a New Zealand prison, but that study also

reported a significant reduction in $PM_{2.5}$ concentration post- smoke-free [10]. A study in Ireland examining levels of SHS in workplaces exempt from their smoke-free legislation (prisons, psychiatric hospitals, nursing homes) stated that the use of SidePak monitors in prison settings was not logistically possible due to issues over equipment safety and instead used officers' exhaled breath CO (141). As previously reported in Chapter 4, a number of logistical issues hindered data collection, on occasions, regime changes or episodes of lock-down due to prisoner incidents meant researchers could not access certain wings to take samples of air quality. This was particularly limiting post-policy when researchers wanted to repeat the sampling completed pre-policy, therefore if the wing location they wanted to sample post-policy was not accessible they could not collect repeated data.

As an inevitable consequence of the smoke-free implementation dates in the four prisons, pre-policy air quality samples were taken during the winter months and post-policy during the summer months. It is possible that greater ventilation through windows and doors opened in the summer months contributed to the reduction in particulate levels between these two time points. Although it is important to acknowledge this, the majority of landing windows open during the summer months were vented (so had limited air flow) and wings doors tended to open out into other indoor areas of the prison, SidePak monitors were also placed towards the centre of the wings and away from any open windows or doors during sampling. It is recognised that our estimated proportion of time spent above the WHO $PM_{2.5}$ upper guidance limit of 25 µg/m³ as a 24-hour mean are not truly representative because we were only able to place our SidePak monitors onto the wings during daytime hours. Since smoking does not occur during sleep, particulate levels are likely to have been considerably lower during the night. However our data do give a very good estimation, in view of the large amount of data collected pre- and post- policy

(over 60 days), of SHS pollution during times when non-smokers would be exposed during waking hours.

5.5.3 Interpretation in context of other studies

In my earlier study (Chapter 2 (171)) completed in four English prisons, (of which two prisons are the same as the pilot smoke-free sites sampled here) $PM_{2.5}$ concentrations sampled on wing landings where prisoners were permitted to smoke in their cells were higher than those sampled in this study three months prior to the smoke-free dates (arithmetic mean 43.87 µg/m³ and median 32.86 µg/m³ compared to this study, arithmetic mean (unpaired) 29.60 µg/m³ and median 20 µg/m³). A possible explanation for this is that the majority of samples taken in the current study were derived from days leading up to the weekly delivery of tobacco to prisoners from the prison shop (data were collected Monday-Friday, with canteen delivery typically Friday midday) when many prisoners are running out of tobacco, whereas my earlier study included samples taken at the weekend (after tobacco delivery). We have previously reported that $PM_{2.5}$ concentrations were higher immediately after canteen delivery days. It is also possible however that three months before going smoke-free, prisoners were already starting to reduce their tobacco consumption or had been on the smoking cessation course at the prison in light of the impending policy (pre-policy 92% of prisoners surveyed had seen communication relating to the prison going smoke-free).

The percentage reductions in $PM_{2.5}$ concentrations in this study were similar to those recorded in other countries who had introduced a comprehensive (not partial) smoking ban (142-144). The reduction in mean $PM_{2.5}$ concentrations pre – to post- policy in a study in the US were 77% (143), and in New Zealand 57% (144) (compared with 66% in the paired

datasets in this study), though the time frames for data collection pre- and post-smoke-free legislation were different in all of these studies. Questionnaire responses in the earlier study (Chapter 4) provide confirmation that reported SHS levels had fallen, with 86% of all staff members (including those with no direct prisoner contact) reporting that their SHS exposure at work had reduced after the smoke-free policy and 40% of all prisoners thought their health had improved as a result of smoke-free policy. Both prisoners and staff members also discussed how the living environment was cleaner and healthier since their prison went smoke-free during focus groups.

Findings from this study suggest prisoners were still smoking after the introduction of smoke-free, $PM_{2.5}$ concentrations post- policy ranged from 0-3073 μg/m³, consistent with continued smoking in some areas. Hammond and colleagues, measured nicotine concentrations before and after prisons in California, US went smoke-free, they concluded that a smoking ban was effective in reducing SHS exposure but did not eliminate it (142). Survey responses (outlined in Chapter 4) from all participants indicate that over 70% were aware of post-policy smoking occurring in the prisons, along with further evidence from focus group discussions which indicated that tobacco had becoming a highly priced commodity since the ban, consistent with continued use. An ethnographic case study conducted in ten prisons in the US after implementing a complete smoking ban described the lengths prisoners would go to in order to acquire, exchange and smoke tobacco, and how tobacco had now become a more lucrative commodity to sell due to big demand and higher profit margin than illicit drugs (121). The study concluded that although prisoners smoked less post-policy, the emergent black-market created by banning tobacco had a negative impact on inmates. Similar negative impacts of a smoke-free policy were discussed in our focus groups and were highlighted in negative written comments outlined in the findings from Chapter 4. An initial rise in tobacco contraband and increased prices

for black market tobacco were also observed in prisons in New Zealand shortly after their smoking ban; however reports suggest that this waned after methods of checking and stopping contraband were improved two months into the smoke-free policy (150). Like New Zealand, the emergence of a tobacco black market was also observed in the Northern Territory's of Australia when prisons went smoke-free (151), and like the four prisons evaluated here, both studies described the use of tobacco substitutes (NRT patches, grass leaves, Bible paper) after smoke-free policy.

The multi-method approach (to include the findings outlined in Chapter 4), the inclusion of four prisons, data collection both before and after implementation and the addition of air quality monitoring distinguishes the present study from most assessments of prison smoke-free policy carried out in other countries, which have tended to involve single prisons with either air quality testing or small scale qualitative interviews, and often collecting data only after the smoke-free policy has been implemented (143, 150, 151, 180).

5.5.4 Conclusions

Indoor air quality improved as a result of a comprehensive smoking-free policy introduced in four English prisons. These findings suggest that the policy has successfully restricted the number of prisoners smoking and so resulted in an environment with lower levels of SHS exposure for prisoners and staff members. Akin to other UK studies (171, 183), mean $PM_{2.5}$ concentrations pre-policy were above the WHO 24-hour indoor air quality guidelines (145). Post-policy, mean $PM_{2.5}$ concentrations fell below the WHO upper guidance limit of 25 $\mu g/m^3$ per 24-hour, however the range of concentrations sampled suggest that prisoners were still smoking on occasions under the smoke-free policy. Research evidence

recommends that there is no safe level of exposure to SHS (13, 145). This study only examined the impact of the smoke-free policy after three months of implementation, the long-term health impact of this policy for these prisons, plus the rest of the prison estate in England and Wales, are far reaching and have the potential to minimise the huge health inequalities found in this population.

6 MAIN FINDINGS, REFLEXIVE STATEMENT AND RECOMMENDATIONS FOR FUTURE RESEARCH

6.1 MAIN FINDINGS AND IMPLICATIONS

This PhD project adds to evidence that tobacco use is prevalent at around four times the national average and embedded in prison culture, that prisoners use tobacco as a coping mechanism and a form of stress relief, are highly tobacco dependent, and have long smoking histories. Tobacco is also a form of currency in prison and compounds issues around bullying, debt and drug use. Although these findings are widely accepted in the literature, this knowledge can play a vital role in our understanding of why prisoners are still smoking illicit tobacco in prison and exploration of prisoners who return to tobacco on release or transfer from a smoke-free prison.

This thesis reports the first study of particulate pollution from SHS in English prisons. The concentrations of SHS sampled on wing landings and in prisoner's cells in this thesis were often above the WHO indoor air quality guidelines. The partial smoking restrictions outlined in the current PSI does therefore not offer protection to non-smokers from the harms associated with SHS. It also highlighted the risks associated with SHS exposure to pregnant prisoners and staff members. Qualitative interviews with prison officers reinforced these air quality monitoring findings, confirming times of the day and duties undertaken where they felt most at risk from SHS. Prison officers outlined how the current PSI was often unworkable day-to-day, conceding that prisoners would ignored the smoking restrictions in place.

In response to air quality monitoring data collected as part of this PhD (and after commissioning of an independent organisation to confirm the findings (183)) and a medical opinion provided by Professor John Britton (210), NOMS announced the pilot implementation of a comprehensive smoke-free policy in four prisons in the South-West of England from March 2016. Using a mixed methods approach, this thesis offers the first empirical evaluation of the effect of introducing prison smoke-free policies in England. It suggests that within the current instability of the prison estate and despite multiple concerns, the implementation of smoke-free policies has proved successful, with marked reductions in tobacco use, improved indoor air quality, healthier living and working conditions and little evidence of adverse effects (for example, prisoner disorder). Due to the success of the pilot sites in England, NHS England's Health and Justice commissioning intentions for 2017/18 have set out the next tranche of 12 prisons that are preparing to go smoke-free (to include all prisons solely holding VP prisoners in England) from October 2016 (211). Scotland are also currently conducting a scoping exercise to inform their move to a smoke-free prison estate (212).

There are lessons for wider implementation, particularly in relation to setting clear timelines, ensuring that prisoners can access cessation services in advance of policy implementation and consideration of current electronic cigarette brands available. As with other countries which have implemented smoke-free prison polices, there were some unintended consequences highlighted by prisoners and staff post-policy. These included smoking of other substances (the contents of NRT patches, tea leaves and lawn grass) and the creation of a black market for tobacco trading amongst prisoners.

Prison can provide a prime opportunity to address health inequalities amongst this hard-to-reach group, by engaging them with health services and specific health promotion,

treatment and prevention interventions (69, 74). Prisoners are also highly disengaged from health services; a smoke-free policy could provide education on the harms of smoking and highlight the benefits of a lifetime without smoking, or at best a reduction in harm by switching to the use of electronic cigarettes. There is a potential here for this knowledge to impact on the smoking behaviours of prisoners' family and friends in the community. Within the UK, providing a safe and effective smoke-free policy has a multitude of potential benefits, for HMPPS, the NHS and society.

6.2 REFLEXIVE STATEMENT

It is important that researchers reflect on the ways in which they may have impacted upon research responses elicited throughout their studies (213). In collaboration with supervisors and NOMS, the author (LJ) used previous research experience working within HM Prison Service to design this PhD protocol. The author had a deep understanding of how prisons work operationally and had a number of years of experience conducting research in this setting. On reflection, this experience was vital in successfully organising prison visits and collecting a range of data (air quality, questionnaire, and focus group data) in the short time frame permitted.

For this thesis, data were collected from six English prisons, all but two being visited by a researcher on more than one occasion for data collection. Due to the secure closed nature of prisons, visitors, especially those visiting areas of the prison where the majority of prisoners and staff are located (wings and workshop/education locations), are quickly identified and acknowledged by staff and prisoners. In the main, the researchers visiting the prisons (LJ and CH) had little in common with the prisoners or the staff members who lived and worked in the establishments, which may have inhibited the participation and

openness of participants. The gap between the researchers past and current life experiences, compared with the prisoners participating throughout this study cannot be denied. However, the researchers adopted a friendly, warm stance towards all participants and were forthcoming, informally discussing who they were and the research with prisoners and staff within all establishments. It was hoped this would facilitate participation and build trust within the short time frame available. As a result we developed a relationship with each of the prisons and were known throughout (more so by staff members than prisoners) at the end of the post-policy data collection. Similar relationships have been discussed in a paper reflecting on data collection by Liebling and her research team (214) who conducted a similar pre- and post-policy study in English prisons. Commenting on the strong relationship their research team built with the study prisons and the intensity of data collection in these settings, it was clear that this had an impact on their approach to interviews, the response rate they achieved, the level of openness amongst participants, and gave their researchers a rare shared position having seen the prison change pre- to post-policy. The relationship Liebling discussed and its impact on the data were largely similar to the experience of this thesis. The relationships which developed during data collection visits built trust and understanding with those participating, and enabled researchers to have a shared position post- smoke-free policy having previously visited the prisons before the policy and acknowledging the effort and endeavours faced in going smoke-free.

Almost everyone the researchers came into contact with during data collection (whether they choose to participate or not) had an opinion on smoke-free prisons, and more often than not were open to debate the policy introduction and impact. Researchers were regularly asked about their viewpoint on such a policy, and although the researchers tried not to discuss this with staff and prisoners, questions asked about the research study itself

(for example, which prison sites were participating, who is funding the study) and the current evidence around the topic area (for example, on the harms of smoking and exposure to levels of SHS, the experience of smoke-free prisons in other countries, concentrations of SHS sampled in prison settings, and the use of electronic cigarettes) were willingly answered. This slightly distant and impartial viewpoint was also adopted during focus group discussions to facilitate consensus and disagreement within the discussion groups.

It is possible the author could have introduced an element of bias within the interview/focus group guide development, participant interview/focus group responses and modes of qualitative analysis used throughout this thesis. However, the author's supervisors (ER and RM) were independent to the data collection throughout this PhD project, and they were therefore utilised to improve the validity of the staff interviews and prisoner and staff focus groups outlined in this thesis. Their input with developing the interview/focus group guides, and secondary analysis of transcripts were all validation measures taken to limit any potential bias.

6.3 SUGGESTIONS FOR FUTURE RESEARCH

Further research is needed into the longer-term impact of smoke-free policy, including unintended consequences, health effects, and relapse to smoking after release. These will now be discussed in turn.

6.3.1 Unintended consequences

The main unintended consequences of smoke-free policy found in this thesis were smoking of alternative substances, increased drug (specifically NPS) and alcohol use, the creation of a tobacco black market and related bullying and debt, and the smuggling of tobacco**.** These findings have since been confirmed by independent assessments of the four pilot smoke-free sites by the Independent Monitoring Board (IMB) (an organisation which monitor day-to-day life in prison to ensure people in custody have a decent standard of care and treated with respect) and the HM Inspectorate of prisons. After visiting the new smoke-free sites both of these independent agencies have acknowledged the success of the policy implementation and the potential health benefits it brings to prisoners and staff, noting that the anticipated negative outcomes had not materialised (71, 215-218). An IMB report on HMP Dartmoor outlined a sharp increase in NPS use which had led to near fatal casualties, along with some violent disorder on wings (217), while unannounced inspections of HMP Exeter and HMP Channings Wood reported prisoners smoking of other substances (tea leaves, contents of NRT patches, dried grass, paper from books), turning to alcohol and other drugs, and damage to electric cables which prisoners were using to create a spark to light illicit cigarettes (215, 216). Unintended consequences of the smoke-free policy (including those outlined in this work, smoking of alternative substances, drug and alcohol use, the creation of a tobacco black market and related bullying and debt, and the smuggling of tobacco) need to be examined further and, where possible, addressed to safeguard the future successful implementation throughout the rest of the English prison estate. This would build into on-going work looking at objective validation of disruptive behaviour, fires, healthcare use and canteen sales from prison records; some of this data has been collected however analysis has not yet been carried out.

6.3.2 Long-term health outcomes

Chapter 5 outlines the improvements in air quality observed three months after the introduction of the smoke-free prison policy. However what this thesis does not consider are the future health gains from former smokers and non-smokers who work and reside in these four sites, and the potential impact this policy will have once implemented across the rest of the English estate. International reviews on smoke-free legislation, although not prison-specific, have reported a positive impact on cardiovascular health since such polices have been introduced (29, 37). A retrospective time series analysis carried out in prison populations in the US (up to 10 years after smoke-free legislation was introduced) found that smoking bans resulted in a 9% reducing in mortality, including a significant reducing in cardiovascular deaths. Similar research accessing prisoner's health records could provide this data. With the rise in the number of older prisoners in England and Wales (63, 211) reduced mortality in this population would be interesting to explore further.

6.3.3 Relapse to smoking after release

Questionnaire findings after smoke-free policy implementation suggest only a quarter of prisoners who had smoked stated they would remain smoke-free after release or transfer to a prison without a smoke-free policy. For former smokers in smoke-free prisons in other countries, high intent to relapse and actual relapse rates have also been reported (156, 206, 207). A review of smoke-free prison policies in the US found that smoke-free legislation had little impact on prisoner smoking behaviours, with prisoners typically resuming smoking shortly after release from prison (103). One study reported that at three weeks after release, 84% of former smokers had relapsed, on average having their first cigarette six days after release (206). These studies suggest forced abstinence alone during

imprisonment has little impact on post-release smoking status. However work by Clarke and colleagues in the US has found behavioural intervention prior to release greatly improves abstinence after release in to the community (25% abstinence with intervention v. 7% abstinence in control group, 3 weeks post- release) (208, 219). Although researchers have found that retaining ex-prisoners in longitudinal, health-focused studies is challenging, it is not impossible (220). NOMS have outlined their commitment to introduce smoke-free polices throughout the rest of the English prison estate over the coming years (162, 211). With this comes a clear need for further research to identify effective strategies for reducing relapse to smoking after release from smoke-free prisons.

7 APPENDICES

APPENDIX 7.1 Prison map of England and Wales 2017

APPENDIX 7.2 Information sheet for prisoners air quality monitoring

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Suzy Dymond-White & Leah Jayes

VOLUNTEER INFORMATION SHEET

Researcher to talk through points listed below with participants.

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. If you wish, one of the researchers will go through all the information below. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part or not.

☐ **Background**
Prisons are one of the last places in England and Wales where people can smoke inside. This study aims to test the level of exposure to second hand smoke of those who live and work in a few prisons in England and Wales.

☐ **What is the purpose of the study?**
We want to place air monitors on the wings, in the cells of prisoners who do and do not smoke and attached to prison officers during a shift. These air monitors record the level of second hand smoke in the air around you over a period of time. We would like to see if there is a difference in the levels of second hand smoke at different times of the day and on different wing locations at this prison.

☐ **Why have I been invited?**
We have asked a few prisoners at HMP [insert name] to take part in the project depending if they are smokers or non-smokers. Prisoners from a few living accommodations in the prison will be invited to take part.

☐ **Do I have to take part?**
You do not have to take part, however the more people we get to take part the better we can understand and levels of second hand smoke at this prison.

☐ **What will happen if I take part and what will I have to do?**
By volunteering to take part you will be asked to have an air monitor in your cell once, for up to 12 hours. One of the researchers will show you what one of the air monitors looks like before you agree to take part.

☐ **What if I have trouble reading/English is not my first language?**
The researchers are here to help anyone who needs help to read the information sheet provided and if they wish to take part will help them to fill in the consent form.

☐ **Will I get paid extra wages?**
Unfortunately you will not get paid any extra wages for taking part in the study.

☐ **What if I decide I no longer want to take part in the study?**
If you decide you do not want to take part in the study please say as soon as possible and we will not place an air monitor in your cell. If the air monitor is already in your cell please ring your cell bell and one of the wing officers will come along and give you instructions to turn it off or remove it from your cell completely. You do not have to answer any of the researcher's questions if you do not wish; this will not compromise you in any way. Please say at the earliest convenience if you no longer would like to take part.

☐ **Will information collected remain anonymous and confidential?**
All information collected by the air monitor will remain anonymous and confidential. However, if you talk to one of the researchers about behaviour that is against prison rules, is an illegal act, or behaviour that is potentially harmful to yourself (e.g self-harm) or someone else this will be reported to the security department.

☐ **What will happen to the results of the research study?**
In the future some prisons in England and Wales will go tobacco and smoke free, we hope that the information you provide here will help us make this change easier for prisoners in the future.

☐ **What if something goes wrong?**
If you have any concerns about any aspect of the project, you should ask to speak to the researchers who will do their best to answer your questions. If you wish to speak to someone at the prison after the session about any distress or anxieties caused please contact your Smoke Free Lead [insert name].

If you are not satisfied with the outcome then you can get in touch with the Chairperson of the University of Nottingham Ethics Committee which has approved this project. Please contact the Ethics Committee Secretary, at the following address:

Division of Therapeutics and Molecular Medicine
D Floor, South Block
Queen's Medical Centre
Nottingham
NG7 2UH

If you have any requests for information, complaints or queries about the research please forward these to the prison directly.

☐ **Who is organising and funding the research?**
This research is funded The UK Centre for Tobacco and Alcohol Studies, University of Nottingham.

☐ **Who has reviewed the study?**

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee. All research in The National Offender Management Service (NOMS) goes through an application process which involves consultation with the area psychologist, who has agreed to this study.

☐ **I would like to take part, what shall I do next?**
Please fill in the form on the next page and post it into your applications box on the wing/unit. A member of the research team will then come and see you to arrange a time for the air monitor to be placed in your cell.

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Suzy Dymond-White & Leah Jayes

□ **I would like to take part, what shall I do next?**

If you would like to take part in the research please complete the following information and drop this sheet into your applications box on the wing/unit. A research will then come and see you.

Name :……...…

Wing Name & Cell Number……

Thank you for reading this information sheet and considering participation in our research!

****If lost please return to one of the researchers named above or your Smoke Free Lead (insert name).**

APPENDIX 7.3 Information sheet for staff member air quality monitoring

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Suzy Dymond-White & Leah Jayes

STAFF INFORMATION SHEET

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you.

☐ **Background**
Prisons are one of the last places in England and Wales where people can smoke inside. This study aims to test the level of exposure to second hand smoke of those who live and work in a few prisons in England and Wales.

☐ **What is the purpose of the study?**
We want to place air monitors on the wings, in the cells of prisoners who do and do not smoke and attached to prison officers during a shift. These air monitors record the level of second hand smoke in the air around you over a period of time. We would like to see if there is a difference in the levels of second hand smoke at different times of the day and on different wing locations at this prison.

☐ **Why have I been invited?**
We are trying to get staff members located on as many different wings/units as possible to take part.

☐ **Do I have to take part?**
There will be no advantage or disadvantage as a result of your decision to participate or not in the research. There is no obligation to take part in the study, however the more people we get to take part the better we can understand and help in the switch to a tobacco and smoke free environment.

☐ **What will happen if I take part and what will I have to do?**
By volunteering to take part you will be asked to carry an air monitor during part of your work shift for up to 8 hours. Alongside this, you will be asked to carry out a carbon monoxide breath test at the start and end of your shift, this will help to validate the air monitor readings and will help us to see if your level of second hand smoke has increased or decreased during your working shift. The air monitor will be attached to your belt and a tube is then attached leading from the monitor to your shirt collar. The researcher will show you the air monitor and how it is attached and a carbon monoxide reader before you agree to take part in the study.

☐ **I don't have time to take part in this research?**
This prison has been selected to be a potential early adopter of smoke free policy in the future. The data we collect here will go towards this move and is invaluable in becoming a smoke free prison in the future.

☐ **What if I decide I no longer want to take part in the study?**
If you decide you do not want to take part in the study once you have the air monitor attached please remove it from your belt and ring your Smoke Free Leads extension number (insert name), either a researcher or the Smoke Free Lead will come and collect the monitor from you. You do not have to answer any of the researcher's questions if you do not wish, this will not compromise you in any way. Please say at the earliest convenience if you no longer would like to take part.

☐ **Will information collected remain anonymous and confidential?**
All information collected will remain anonymous and confidential. The data you provide will be securely archived within the University of Nottingham for 7 years after it has been collected.

☐ **What will happen to the results of the research study?**
The study team will publish the results of the study as widely as possible. You will not be identified in any report or publication.

☐ **What if something goes wrong?**
If you have any concerns about any aspect of the project, you should ask to speak to the researchers who will do their best to answer your questions. If you wish to speak to someone at the prison after the session please contact your Smoke Free Lead [insert name].

If you are not satisfied with the outcome then you can get in touch with the Chairperson of the University of Nottingham Ethics Committee which has approved this project. Please contact the Ethics Committee Secretary, Mrs Louise Sabir at the following address:

Division of Therapeutics and Molecular Medicine
D Floor, South Block
Queen's Medical Centre
Nottingham
NG7 2UH

☐ **Who is organising and funding the research?**
This research is funded The UK Centre for Tobacco and Alcohol Studies, The University of Nottingham

☐ **Who has reviewed the study?**

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee. All research in The National Offender Management Service (NOMS) goes through an application process which involves consultation with the area psychologist, who has agreed to this study.

Thank you for reading this information sheet and considering participation in our research!

APPENDIX 7.4 Individual datasets collected from wing landing: wing function and design, sampling times, arithmetic mean values, range and percentage of sampling time over 25 µg/m³ (non-smoking locations in *italic*)

Sample location				**$PM_{2.5}$ (µg/m³)**	
Day, date, dataset ID	**Wing function**	**Wing design**	**Sampling start time (duration hr:min)**	**Arithmetic mean (range)**	**Time (hr:min) over 25µg/m³(%)**
HMP Eastwood Park					
Wednesday 23/07/14 W101	Substance misuse/IDTS	Corridor. Trickle vent windows	11:40 (4:34)	28.26 (14-200)	2:09 (47.08%)
Wednesday 23/07/14 W102	Main	Gallery. Fully opening windows	18:21 (7:49)	26.05 (8-89)	2:54 (37.10%)
Wednesday 23/07/14 W103	Main, first night	Gallery. Fully opening windows	18:21 (7:49)	9.24 (5-33)	00:01 (0.21%)
Thursday 24/07/14 W104	Substance misuse/IDTS	Corridor. Trickle vent windows	08:32 (8:05)	52.87 (16-254)	7:06 (87.84%)
Thursday 24/07/14 W105	Main, first night	Gallery. Fully opening windows	14:37(2:18)	10.18 (6-27)	00:01 (0.72%)
Thursday 24/07/14 W106	*Mother & baby*	*Corridor. Fully opening windows*	*14:52 (1:50)*	*2.67 (0-22)*	*00:00 (0%)*
T Thursday 24/07/14 W107	Substance misuse/IDST	Corridor. Trickle vent windows	17:06 (9:49)	30.78 (11-86)	5:35 (56.88%)
Friday 25/07/14 W108	Drug recovery/free	Narrow corridor. Fully opening windows	08:17 (8:27)	59.78 (8-712)	5:00 (59.17%)
Friday 25/07/14 W109	Mental health assessment	Corridor. Trickle vent windows	08:38 (8:12)	33.30 (10-946)	3:42 (45.12%)
Friday 25/07/14 W110	Category C regime	Narrow corridor. Fully opening windows	10:27 (5:56)	46.28 (14-321)	3:24 (57.30%)
Saturday 26/07/14 W111	Substance misuse/IDTS	Corridor. Trickle vent windows	09:23 (7:03)	50.04 (14-453)	5:01(71.16%)
Saturday 26/07/14†	Mental health assessment	Corridor. Trickle vent windows	09:49 (4:49)	37.82 (12-766)	2:33 (51.17%)

W112					
Saturday 26/07/14 W113	Drug recovery/free	Narrow corridor. Fully opening	13:29 (3:03)	97.24 (13-461)	2:33 (83.61%)
HMP Erlestoke					
Thursday 31/07/14 R101	Family interventions	Narrow corridor. Fully opening windows	10:25 (6:04)	81.41 (15-475)	5:14 (86.26%)
Thursday 31/07/14 R102	Main, enhanced	Corridor. Fully opening windows	10:59 (5:47)	14.25 (6-70)	00:34 (9.80%)
Friday 01/08/14 R104	Main	Triangular gallery. Fully opening windows	08:09 (7:50)	32.86 (7-107)	4:28 (57.02%)
Friday 01/08/14 R105	*Care & Separation*	*Corridor. Trickle vent windows*	*08:30 (5:35)*	*5.71 (3-18)*	*0:00 (0%)*
Friday 01/08/14 R106	Enhanced	Narrow corridors. Fully opening windows	13:54 (2:13)	17.50 (9-66)	00:12 (9.02%)
Friday 01/08/14 R107	Main	Triangular gallery. Fully opening windows	17:46 (7:49)	42.45 (20-135)	7:13 (92.32%)
Saturday 02/08/14 R108	Induction	Gallery. Trickle vent windows	08:24 (7:42)	36.96 (14-85)	6:29 (84.12%)
Saturday 02/08/14 R109	Main, enhanced	Corridor. Fully opening windows	08:57 (7:06)	32.37 (6-439)	2:55 (41.08%)
HMP Exeter					
Thursday 14/08/14 X101	Main	Gallery. Perspex window covers	10:45 (5:35)	24.20 (7-151)	1:48 (32.35%)
Thursday 14/08/14 X102	Care & Separation	Corridor. Trickle vent windows	11:00 (5:22)	8.03 (3-29)	00:01(0.31%)
Thursday 14/08/14 X103	Main	Gallery. Perspex window covers	11:16 (5:03)	20.97 (6-54)	1:31 (30.03%)
Thursday 14/08/14 X104	Main	Gallery. Perspex window covers	17:46 (8:49)	12.89 (4-85)	00:21(3.97%)
Friday 15/08/14 X105	Enhanced	Narrow corridor. Trickle vent windows	07:59 (8:14)	23.83 (6-334)	2:27 (29.76%)
Friday 15/08/14 X106	Induction	Corridor. Trickle vent windows	08:09 (8:10)	23.23 (4-164)	2:14 (27.35%)
Friday 15/08/14 X107	*Healthcare/ Palliative care*	*Corridor. Fully opening windows*	*08:19 (5:11)*	*3.09 (2-7)*	*00:00 (0%)*

Friday 15/08/14 X108	Main	Gallery. Perspex window covers	17:46 (8:59)	36.61 (8-121)	4:00 (44.53%)
Saturday 16/08/14 X109	Enhanced	Narrow corridor. Trickle vent windows	09:07 (7:24)	183.18 (10-1124)	6:35 (88.96%)
Saturday 16/08/14 X110	Vulnerable prisoners	Gallery. Perspex window covers	09:16 (7:29)	18.95 (5-92)	1:06 (14.70%)
Saturday 16/08/14 X111	Main	Gallery. Perspex window covers	09:29 (7:18)	31.22 (12-452)	3:30 (47.95%)
Saturday 16/08/14 X112	Centre hub	No windows	09:39 (3:41)	17.06 (6-44)	00:14 (6.33%)
HMP Holme House					
Thursday 02/10/14 H101	Main	Gallery. Trickle vent windows	11:41 (5:14)	26.87 (6-79)	2:02 (38.85%)
Thursday 02/10/14 H102	*Main, part-time education and work*	*Gallery. Trickle vent windows*	*11:44 (5:10)*	*5.57 (3-16)*	*00:00 (0%)*
Thursday 02/10/14 H103	Main	Gallery. Trickle vent windows	17:06 (8:39)	40.73 (12-129)	6:32 (74.10%)
Thursday 02/10/14 H104	*Main, part-time education and work*	*Gallery. Trickle vent windows*	*17:06 (8:39)*	*8.35 (3-17)*	*00:00 (0%)*
Friday 03/10/14 H105	Main, workers	Gallery. Trickle vent windows	07:55 (8:40)	26.38 (6-97)	2:46 (31.92%)
Friday 03/10/14 H107	Care and separation	Gallery. Trickle vent windows	10:49 (4:40)	6.28(2-25)	00:00 (0%)
Friday 03/10/14 H108	*Healthcare*	*Corridor. Trickle vent windows*	*10:56 (4:28)*	*6.29 (4-15)*	*00:00 (0%)*
Friday 03/10/14 H109	Main, category C regime	Squared gallery. Trickle vent windows	17:36 (8:49)	23.11 (7-38)	3:39 (41.40%)
Saturday 04/10/14 H110	Main, category C regime	Squared gallery. Trickle vent windows	08:27 (8:06)	35.08 (5-356)	3:17 (40.53%)
Saturday 04/10/14 H111	Drug recovery	Gallery. Trickle vent windows	08:37 (7:51)	126.90 (22-273)	7:40 (97.66%)
Saturday 04/10/14 H112	Induction	Gallery. Trickle vent windows	11:27 (5:13)	15.75 (1-44)	1:07(21.41%)
Thursday 27/11/14 H113	Therapeutic Community	Gallery. Trickle vent windows	10:47 (4:46)	83.31 (59–118)	4:46 (100%)

Thursday 27/11/14 H114	Drug recovery	Gallery. Trickle vent windows	10:50 (4:41)	138.64 (72-806)	4:40 (100%)
Thursday 27/11/14 H115	Drug recovery	Gallery. Trickle vent windows	16:51 (8:49)	47.02 (1-194)	4:37 (52.36%)
Friday 28/11/14 H116	Drug recovery	Gallery. Trickle vent windows	09:10 (5:38)	147.16 (74-188)	5:38 (100%)

† Located outside a gated cell

IDTS (Integrated Drug Treatment System)

Canteen days: HMP Eastwood Park, Thursday; HMP Erlestoke and HMP Exeter, Friday; HMP Holme House, Thursday or Friday depending on wing location.

APPENDIX 7.5 Individual datasets collected from prisons cells: wing function and design, cell type, sampling times, arithmetic mean values, range and percentage of sampling time over 25 µg/m³ (cells with non-smoking residents in *italic*)

Sample location					**$PM_{2.5}$ (µg/m³)**	
Day, date, dataset ID	**Wing function**	**Wing design**	**Cell type**	**Sampling start time (duration hr:min)**	**Arithmetic mean (range)**	**Time (hr:min) over 25µg/m³(%)**
HMP Eastwood Park						
Wednesday 23/07/14 W201	Main	Gallery. Fully opening windows	Double	12:10 (4:16)	162.90 (21-1409)	3:51 (90.23%)
Thursday 24/07/14 W202	Main	Gallery. Fully opening windows	Single	12:08 (4:47)	62.31 (9-360)	2:54 (60.63%)
Friday 25/07/14 W203	*Drug recovery/ free*	*Narrow corridor. Fully opening windows*	*Double*	*08:22 (8:23)*	*27.52 (14-89)*	*4:09 (49.50%)*
Saturday 26/07/14 W204	*Main, first night*	*Gallery. Fully opening windows*	*Double*	*08:46 (7:56)*	*13.39 (8-52)*	*0:06 (1.30%)*
HMP Erlestoke						
Thursday 31/07/14 R201	Family interventions	Narrow corridor. Fully opening windows	Single	10:38 (5:57)	144.76 (10-932)	5:16 (88.52%)
Thursday 31/07/14 R202	*Main, enhanced*	*Corridor. Fully opening windows*	*Single*	*10:53 (5:57)*	*7.13 (4-32)*	*0:01 (0.28%)*
Saturday 02/08/14 R203	*Main*	*Narrow corridor. Fully opening windows*	*Single*	*08:41(4:56)*	*31.00 (11-102)*	*2:05 (42.23%)*
HMP Exeter						
Friday 15/08 X201	*Enhanced*	*Narrow corridor. Trickle vent windows*	*Single*	*12:24 (3:51)*	*5.77(2-14)*	*0:00 (0%)*
Friday 15/08/14 X202	Vulnerable prisoners	Gallery. Perspex window covers	Double	13:39 (2:52)	434.74 (14-1513)	2:34 (89.53%)
Saturday 16/08/14 X203	*Main*	*Gallery. Perspex window covers*	*Double*	*13:44 (3:08)*	*2.89 (2-10)*	*0:00 (0%)*
HMP Holme House						

Friday 03/10/14 H201	Main. Workers	Gallery. Trickle vent windows	Single	11:50 (4:41)	429.27 (8-2684)	4:01 (85.77%)
Saturday 04/10/14 H203	*Therapeutic Community*	*Gallery. Trickle vent windows*	*Double*	*12:17 (3:10)*	*2.35 (0-101)*	*0:56 (29.47%)*
Friday 28/11/14 H204	*Drug Recovery*	*Gallery. Trickle vent windows*	*Single*	*09:00 (3:35)*	*223.06 (107- 1242)*	*3:35 (100%)*

Canteen day: HMP Eastwood Park, Thursday; HMP Erlestoke and HMP Exeter, Friday; HMP Holme House Thursday or Friday depending on wing location.

APPENDIX 7.6 Individual datasets collected by personal monitoring of staff members: wing function and design, sampling times, arithmetic mean values, range and percentage of sampling time over 25 µg/m³ (non-smokers in *italics*)

Sample location				**$PM_{2.5}$ (µg/m³)**	
Day*, date, dataset ID	**Wing function**	**Wing design**	**Sampling start time (duration hr:min)**	**Arithmetic Mean (range)**	**Time (hr:min) over 25µg/m³(%)**
HMP Eastwood Park					
Wednesday 23/07/14 W301	*Mental health assessment*	*Corridor. Trickle vent windows*	*11:12 (4:48)*	*23.78 (7-340)*	*00:41 (14.24%)*
Wednesday 23/07/14 W302	*Substance misuse/IDST*	*Corridor. Trickle vent windows*	*11:27 (4:41)*	*16.21 (7-169)*	*00:28 (9.96%)*
Wednesday 23/07/14 W303	*Main*	*Gallery. Fully opening windows*	*11:59 (4:22)*	*15.79 (8-199)*	*00:23 (8.78%)*
Wednesday 24/07/14 W304	*Mental health assessment*	*Corridor. Trickle vent windows*	*07:56 (4:14)*	*25.61(10-297)*	*00:39 (15.35%)*
Thursday 24/07/14 W305	*Main*	*Gallery. Fully opening windows*	*08:02 (3:49)*	*17.36 (7-295)*	*00:09 (3.93%)*
*Thursday 24/07/14 W306^*	*Substance misuse/IDTS*	*Corridor. Trickle vent windows*	*08:43 (3:42)*	*19.04 (11-66)*	*00:17 (7.66%)*
Friday 25/07/14 W307†	Substance misuse/IDTS	Corridor. Trickle vent windows	08:01 (3:59)	17.79 (4-77)	00:46 (19.25%)
*Saturday 26/07/14 W308^*	*Main*	*Gallery. Fully opening windows*	*08:40 (3:54)*	*21.28 (7-137)*	*1:00 (25.64%)*
Sunday 26/07/14 W309	*Substance misuse/IDTS*	*Corridor. Trickle vent windows*	*09:33 (6:48)*	*21.82 (11-362*	*1:27 (21.33%)*
HMP Erlestoke					
Thursday 31/07/14 R301	*Interventions and programmes*	*Corridor. Fully opening windows*	*11:13 (3:43)*	*9.98 (2-166)*	*00:12 (5.38%)*
*Friday 01/08/14 R302^*	*Interventions and programmes*	*Corridor. Fully opening windows*	*07:34 (5:57)*	*12.59 (4-130)*	*00:23 (6.44%)*

*Friday 01/08/14 R303^*	*Enhanced and main*	*Thin corridors and Triangular gallery. Fully opening windows*	*07:47 (8:13)*	*13.62 (4-161)*	*00:38 (7.71%)*
Saturday 02/08/14 R304	Main	Thin corridors. Fully opening windows	08:44 (3:50)	9.62 (4-41)	00:02 (0.69%)
HMP Exeter					
Thursday 14/08/14 X301	*Main*	*Gallery. Perspex window covers*	*10:42 (0:58)*	*22.17 (3-218)*	*00:13 (22.41%)*
Thursday 14/08/14 X302^	Main	Gallery. Perspex window covers	11:09 (1:21)	11.05 (3-29)	00:02 (2.47%)
*Friday 15/08/14 X303^*	*Enhanced*	*Narrow corridor. Trickle vent windows*	*07:54 (4:08)*	*13.34 (2-142)*	*00:28 (11.29%)*
Saturday 16/08/14 X304	*Vulnerable prisoners*	*Gallery. Perspex window covers*	*13:49 (2:47)*	*28.05 (3-498)*	*00:33 (19.76%)*
HMP Holme House					
Thursday 02/10/14 H301	Main, category C regime	Squared gallery. Trickle vent windows	12:10 (4:31)	20.43 (3-218)	1:09 (25.46%)
Friday 03/10/14 H302	*Main. Workers*	*Gallery. Trickle vent windows*	*07:49 (3:45)*	*25.58 (5-159)*	*00:59 (26.23%)*
Friday 03/10/14 H303	*Main, category C regime*	*Squared gallery. Trickle vent windows*	*19:36 (4:49)*	*34.01 (7-72)*	*4:14 (87.89%)*
*Saturday 04/10/14 H304^*	*Drug Recovery and Therapeutic Community*	*Gallery. Trickle vent windows*	*11:16 (5:07)*	*74.32 (2-307)*	*4:32 (88.60%)*
*Saturday 27/11/14 H305^*	*Drug Recovery*	*Gallery. Trickle vent windows*	*14:13 (1:25)*	*127.39 (12-608)*	*1:23 (97.65%)*

*W=Wednesday, T=Thursday, F=Friday, S=Saturday.

† Healthcare assistant

Canteen day: HMP Eastwood Park, Thursday; HMP Erlestoke and HMP Exeter, Friday; HMP Holme House Thursday or Friday depending on wing location.

^ Completed a semi-structured interview.

APPENDIX 7.7 Information sheet for staff member interviews

Title of Project: Air Quality Monitoring

Name of Researchers: Suzy Dymond-White & Leah Jayes

STAFF INTERVIEW INFORMATION SHEET

We would like to invite you to take part in a qualitative interview. Before you decide we would like you to understand why this piece of research is being done and what it would involve for you.

☐ **Background**
Prisons are one of the last places in England and Wales where people can smoke inside. Air quality monitoring was completed last year in the prison you work at and you volunteered to wear a monitor during part of your shift.

☐ **What is the purpose of the study?**
It became apparent whilst collecting air quality data that it would be beneficial to include interviews with the staff members who volunteered to wear an air monitor. These interviews with staff members will enable the research team to add further depth to the air monitor data already collected and will include questions about your views on second hand smoke exposure at work and the potential of smoke free prisons in the future.

☐ **Why have I been invited?**
You kindly volunteered to wear an air monitor during one of your shifts at HMP [insert prison]. We would like to get your opinions on wearing the air monitor and the levels of second hand smoke you felt exposed to whilst wearing one during this time and more generally.

☐ **Do I have to take part?**
There will be no advantage or disadvantage as a result of your decision to participate or not in the interview. There is no obligation to take part, however the more people we talk to the more informed we can be in going forward towards a tobacco and smoke free environment to work in.

☐ **What will happen if I take part and what will I have to do?**
Once you have agreed to take part in an interview, the researcher (L.Jayes) will send you a consent form to sign and return and then a date and time to carry out the interview will be arranged. The interview will be held over the telephone at a time which is most convenient to you. The interview will be carried out by the researcher who recruited you into the study and asked you to wear an air monitor (L.Jayes). Interviews will last around 30-45 minutes and will be recorded by the researcher at the end of the telephone. The recorded interviews will be stored safely with the research team and encrypted under Prison Service Policy. Any identifiable information (eg. names) will be removed from the transcripts before analysis. Only the research team at The University of Nottingham will have access to the transcripts.

☐ **I do not have time to take part in this research?**
The data we collect here will go forward and help inform the move towards smoke free prisons in the future. Your Governor has agreed that these can take place in work time. Interviews can be held on any day and at any time, please advise the research team what arrangements would be best for you in order for you to take part.

☐ **What if I decide I no longer want to take part in the study?**
If you decide you do not want to take part in the study once you completed your interview please contact one of the research team (S.Dymond-White or L.Jayes – leah.jayes@nottingham.ac.uk) to withdraw. Please advise the research team by the end of September 2015 if you would like your data removed, after this time the interviews will be analysed. Your decision to withdraw will not compromise you in any way.

☐ **Will information collected remain anonymous and confidential?**
All information collected will remain anonymous and confidential. Any identifiable information (eg. names) will be removed from the transcripts before analysis. The data you provide will be securely archived within the University of Nottingham for 7 years after it has been collected.

☐ **What will happen to the results of the research study?**
The study team will publish the results of the study as widely as possible. You will not be identified in any report or publication.

☐ **What if something goes wrong?**
If you have any concerns about any aspect of the project, you should ask to speak to the researchers who will do their best to answer your questions. If you wish to speak to someone at the prison after the session please contact [insert name].

If you are not satisfied with the outcome then you can get in touch with the Chairperson of the University of Nottingham Ethics Committee which has approved this project. Please contact the Ethics Committee Secretary, at the following address:

School of Medicine Education Centre
B Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
NG7 2UH

☐ **Who is organising and funding the research?**
This research is funded The UK Centre for Tobacco and Alcohol Studies, The University of Nottingham.

☐ **Who has reviewed the study?**

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee. All research in The National Offender Management Service (NOMS) goes through an application process which involves consultation with the area psychologist, who has agreed to this study.

Thank you for reading this information sheet and considering participation in our research!

APPENDIX 7.8 Semi-structured interview guide for staff members

Interview Guide

Title: Air Quality Monitoring

Ethics Ref: G06062013 CHS EPH

Introduction

- Introduce myself
- Explain purpose of the interview in general:
- I would like to talk to you about your participation in recent air quality monitoring and your thoughts on second hand smoke exposure in the prison service.
- Check consent form has been signed and check still happy to take part
- Confidentiality, right to withdraw, recording of interview.

We would like to reassure you that all the data relating to yourself will be kept strictly confidential by the research team. The recording of this interview and any quotes used in the study report will not identify you in any way. Your participation is entirely voluntary and you are free to stop the interview at any time without giving a reason. If you decide to withdraw, data collected up to that point may still be used in analysis. You have the right to withdraw your data up to the end of December 2014, after this time your data will form part of the wider analysis.

- Ask if any questions before starting the interview
- May ask obvious questions about procedures or ask you to explain something further, just to people from a non-prison back ground understand.
- I may look at my interview guide or jot things down along the way, only to remind myself.

Background

1. What is your job title?
2. How long have you worked in HMP (Prison)?
a. Have you ever worked at any other establishments? Same function?
b. What houseblock do you work on?
3. Can you describe the sorts of tasks expected of you during a typical shift?
a. During a typical shift, how much prisoner contact do you have?
b. How much of your shift is spent on the landings/in prisoner's cells?

Smoking in prison and current practices

1. Could you estimate how many prisoners at HMP (Prison) smoke?
a. To what extent would this estimate differ depending on unit/wing function?

2. If a prisoner approached you and asked for help to stop smoking, what would you do?
a. Do you know what help is available from prison healthcare for those who want to stop smoking – probe, NRT, behavioural support?
3. Do you know if the prison offers any support for staff members who wish to stop smoking?
a. If yes, do you know what help is available?
b. If no, do you think having some support available would be beneficial? - probe, NRT, behavioural support?
4. To what extent do you think smoking in prison is a problem?
5. Can you describe what the current advice is for prison officers who need to enter cells where prisoners are/have recently been smoking?
a. Where has this advice come from? Headquarters/Governor/colleagues?
b. Do you feel this advice is effective in practice?
c. Can you suggest anything else that could be done to protect prison officers going into smokers cells?

Carrying an air monitor and understanding of second-hand smoke

1. You agreed to carry an air monitor; can you tell me what you understood about why you were asked to wear a monitor?
a. Do you know what it was trying to measure?
b. Why did you agree to wear one?
c. Describe what it was like to wear one?
2. Can you tell me what second hand smoke or passive smoke is?
a. Probe – understanding of harms associated with it?

Perceptions of second hand smoke exposure at work and health impacts

1. Thinking about all the tasks you undertake during a typical shift (day or night), are there times when you feel your exposure to second-hand smoke is higher/lower?
a. Probe - Any other units/days/establishments you have worked where exposure to second hand smoke has been higher/lower? Give examples.
2. At the end a typical shift, do you feel you have been exposed to second hand smoke?
a. If yes, how can you tell you have been exposed? Give examples, probe - breathing/smell of clothes?
b. If yes, are there certain shifts where you feel more/less exposed to second hand smoke? Probe - day/night, weekday/weekend, different units/wings
c. If no, have you ever heard colleagues speak about second hand smoke exposure, and if so, how is their daily exposure different from yours?
3. For those who state they do feel exposed to second hand smoke at work, do you feel this exposure has any impact on your physical health?
a. Do you feel this is a direct result of your exposure at work?
b. What, if anything, are you doing about any negative health impacts you have outlined – seeing professional help/doing your own health promotion (i.e keeping fit)/making an application to move prisons/change your job role?
4. Thinking back to the short period you were asked to wear a monitor, did you feel you were exposed to second-hand smoke during this time?

a. Could you give any times/examples of tasks you carried out where exposure was higher/lower?

Smoke-free prisons

1. What is your understanding of the current position from the prison service on going smoke free in the future?
c. Where has this information come from? Headquarters/Governor/Staff members?
2. What is your view on the prison service going smoke free in the future?
a. Do you have any concerns over this policy being rolled out in future?
b. Can you think of any positive outcomes from the prison service going smoke free? Probe- personal/prisoners/prison service.
3. Thinking about the potential roll out of smoke free in the future, are there any areas within the prison service which you feel should be prioritised from the outset? Probe – subgroups of prisoners/certain prisons/groups of prison officers/departments – security.
a. Could you offer any suggestions/examples of what the prison service could do to make the transition to smoke-free as seamless as possible?
Probe – activities/training/ education

Smoking status and dissemination of air quality results

1. Are you a smoker?
a. If no, have you ever smoked? Why/how did you stop smoking? How long were you smoking for?
b. If yes, for how long have you smoked?
2. Are you exposed to second hand smoke out of work, i.e. do you live with a smoker?
3. Would you like to know the results of the air quality data we collected from your prison?
a. If so, how would you like this to be done? A presentation/a paper to read in your own time/email.

Closing remarks

1. Finally is there anything we have not talked about regarding second hand smoke exposure or smoke free prisons that is important that you would like to add?
2. Demographic purposes can I ask your age?
3. Any questions?
4. Thank participant for their time.

APPENDIX 7.9 Final codebook from staff member interviews

Prison Officer Interviews – Codebook

8 interviews conducted in total (2x HMP Exeter, 2x HMP Erlestoke, 2x HMP Holme House, 2x HMP Eastwood Park)

BACKGROUND INFORMATION

- Prison: prisoners, function, roll count
- Job: job title, years in service, wing information, tasks expected, location of tasks, amount of prisoner contact
- Smoking status

CURRENT SMOKING PRACTICES/POLICIES

Staff members
- % smokers
- where can they smoke in the prison
- cessation services available
- e-cig use

Prisoners
- % smokers
- where can they smoke in the prison/prisoners breaking these rules/cell door open – closed policy/time spent policing tobacco related issues – smoking out of cells, bullying
- cessation services available/waiting lists
- e-cig use, newly introduced
- use of tobacco as currency/used to bully, intimidation.

SECOND-HAND SMOKE – KNOWLEDGE, EXPOSURE AND PROTECTION

- Knowledge of what SHS is and the associated harms of being exposed to it.

- Areas of the prison where prisoners and staff members are exposed (cells/landings – SHS drifting from cells onto landings – doors open).

- Times of the day/tasks undertaken/wings/times of the year when exposure is high or low (high - unlock, evenings, cell searching, fabric checks, closed wings, ventilation issues in winter, door designs, no. of prisoners smoking in one cell, cat c regime)

- How staff members know they have been exposed to SHS (smell it, see it 'haze/air blue', clothes smell).
- Realisation of potential long-term damage SHS is having

(unsure what this exposure is doing to their bodies, examples of colleagues illnesses related to SHS)

- Policy/Prison Service Order or Instructions (PSO/PSI) does not protect prisoners and staff members from second-hand smoke
(unworkable in prison environment when often need to react quickly and enter cells without warning prisoners first)
- SHS exposure accepted as part of their job
(have to be exposed to SHS and do it as part of their role and duties, rarely question it)

- Attempts made by staff to protect themselves and avoid prolonged or intensive exposure to SHS (shortening breath, leaving smoke filled cells to ventilate and returning later to check, asking ps to put out cigarettes and close doors to prevent venting onto the landings)
- Ideas on how officers can protect themselves from SHS – simply to bring in smoking ban…

SMOKE-FREE POLICY – INFORMATION, ATTITUDES AND IDEAS FOR THE FUTURE

- How and what information has been received regarding the introduction of smoke-free prisons. Reasons why smoke-free prisons have not been introduced sooner (fears over disturbances, lack of staff, changing incentive and earned privileges (IEP) scheme)

- For and against the introduction of a smoke-free policy – do not want to be exposed to SHS, prison service concern over legal action from prisoners and staff members

- Positive and negative impacts of a smoke-free policy
Negatives: tobacco stress release/crutch for prisoners, initial discipline problems, assaults, self-harm, contraband/smuggling tobacco.
Positives: Health benefits for all, currency taken away – acknowledge currency will move on to something else, reduce offending outside if people know prisons are now smoke-free, nicer environment.

- Concerns/ideas on how to go smoke-free
(Need more staff members, enough patches for all prisoners and other forms of NRT, education on benefits of going smoke-free, long lead in date to the smoke-free date/enough notice to prisoners, cessation, women with self harm issues, cross over time with e-cigs, prisoners involvement, getting staff engaged in the move to smoke-free)

EXPERIENCE OF AIR QUALITY MONITORING

- Understanding of why air quality monitoring was being carried out and why they wanted to take part in it.

- Understanding of what the SidePak was measuring.

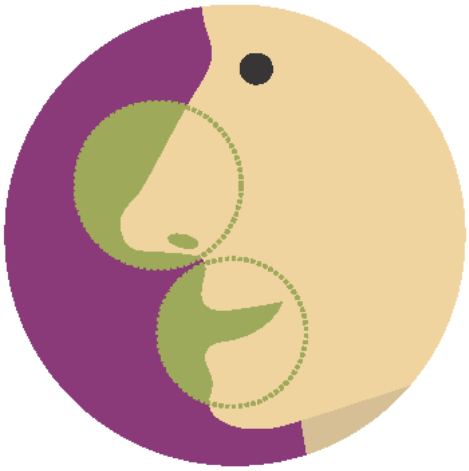
- Experience of holding a SidePak for a duration of time
(questions from prisoners, abuse, did not bother staff having to carry it).

- Interest in seeing the results of the air quality monitoring.

APPENDIX 7.10 Two posters displayed pre-policy in the four early adopter prisons announcing the smoke-free implementation to prisoners

APPENDIX 7.11 Two posters displayed pre-policy in the four early adopter prisons highlighting the health impact of quitting smoking to prisoners

National Offender Management Service



After 48 hours
there is no nicotine in the body, and taste and smell is improved.

SMOKE Free is coming, be ready for it

Speak to staff for help quitting

National Offender Management Service

Just 3 days
after your last cigarette your lung capacity will start to improve

SMOKE Free is coming, be ready for it

Speak to staff for help quitting

APPENDIX 7.12 Prisons Service Headquarters information sheet to staff members working in the four early adopter prisons pre-policy

Staff Information

This is a brief overview of the smoke free prison project in England. It is designed to explain why we are undertaking this policy change, to ensure accurate information is provided to others and it can be used to inform discussions with staff, prisoners, providers, or visitors to the prison.

Why is this prison going smoke free?

NOMS recently completed air quality testing in ten prisons which indicated higher levels of exposure to SHS in communal areas than had previously been known.

We have a duty of care to protect staff, prisoners and visitors from the harmful effects of second hand smoke (SHS).

Which prisons are going smoke free?

It was announced earlier this year that prisons in Wales would be going smoke-free from February 2016 and four early adopter prisons in England (Exeter, Channings Wood, Dartmoor and Erlestoke) would be going smoke free from March 2016.

All open prisons in England went partially smoke free in October, when smoking inside buildings was prohibited, including in cells.

What about the rest of the estate?

Voluntary smoke free areas will be provided in the remainder of the closed prison estate from February 2016

How is this being done in a way that keeps the prison safe?

Safety and security is our priority and we will not put this at risk.

Each prison has been asked to set up a project board to plan for the changes as they apply to their establishment.

Regional Operational Delivery Boards are overseeing and monitoring these arrangements.

Before going smoke-free all prisons will undertake regular operational and health readiness checks to confirm their state of readiness.

If at any point it is felt there are too many risks in going smoke-free, the roll out will be paused while issues are resolved.

What smoking cessation support will be on offer for prisoners?

E-cigarettes are available to buy from the canteen; the number of e-cigarettes a prisoner can buy in one go has been increased from two to 10, the number held in possession has also been increased.

In the Early Adopter prisons we are also trialling the sale of Nicotine Replacement Therapy, (NRT), through the canteen.

In response to prisoner feedback we have improved the information we issue to prisoners on how to use e-cigarettes and NRT to help prisoners use the products more effectively.

Health providers in prison offer stop smoking services to prisoners who wish to give up smoking.

Providers of services to prisoners, such as gym, education and library, are being asked to consider how they can help support prisoners to give up smoking, for example through provision of self-help materials and other supportive activities.

Advice on how to deal with cravings and the side effects of quitting will be provided for prisoners.

Why have you chosen these brands of e-cigarettes?

Disposable e-cigarettes were chosen on the grounds of safety and good order. Concerns have been raised in the community about using refillable e-cigarettes to ‘vape’ illicit items and there is also the potential to use the recharging equipment to recharge other items. As a result only disposable e-cigarettes were trialled during 2015 and of these the Brio brand proved the most popular and so was chosen for national sale.

Why can't prisoners have re-chargeable e-cigarettes?

Aside from the concerns regarding the misuse of recharging equipment, there is also a risk from recharging an e-cigarette incorrectly. Incidents recorded in the community have shown that e-cigarettes can catch fire or explode if they are not recharged correctly. We are currently exploring the possibility of providing a safe rechargeable device.

What support will be provided to staff who are smokers as part of this change?

Staff and contractors will be allowed to bring into the prison an electronic cigarette but will not be allowed to bring in a charger.

There will be a number of designated external e-cig points identified around the prison where staff will be permitted to 'vape'.

Staff can access smoking cessation services through their GP. There are also a number of pharmacies that will prescribe NRT support without the need for a GP referral.

APPENDIX 7.13 DHL canteen products (NRT and electronic cigarettes) available from HMP Exeter prior to the smoke-free implementation

Week Green

Prices charged From: 17/01/16
To: 23/01/16

Exeter

Note: Available Spend Cannot Be Manually Amended

Price	Item	IC	Qty
	PHONE & STAMPS		
£1.00	Phone Credit	PC	
£0.63	1st Class Stamp	096207	
£0.54	2nd Class Stamp	096208	
£0.10	10p Postage Stamp	125683	
£0.01	1p Postage Stamp	125678	
	TOBACCO		
£2.77	Red Bull Tobacco 12.5g	093128	
£4.31	Gold Leaf 12.5g	106736	
£4.45	Marlboro Gold 12.5g	182772	
£4.73	Amber Leaf 12.5g	108859	
£8.24	Gold leaf 25g	106737	
£5.82	Bayside Tobacco VBlend 25g	090586	
£6.02	Rodeo Tobacco 25g	092678	
£7.61	Turner Tobacco 25g	092682	
£8.99	Amber Leaf 25g	974940	
£1.07	Hamlet Cigar sgl	420281	
£4.46	Mayfair KS 10s	975550	
£0.88	Lighter Child Restant	081863	
£0.69	Bbrand U/Slim Fltr Tips (box)	116394	
£0.20	BBrand Rolling Pper Green	128632	
£0.38	Swan Papers Liquorice	552970	
£0.25	Rizla Papers Green	028316	
£2.19	Swan Rolling Machine	084561	
	VAPING		
£3.99	Brio Class 18mg Approx300puff	193065	
£3.99	Brio Menth 9mg Approx300puff	199895	
	BATTERIES		
£1.49	Panasonic Battery AAA(4's)	098196	
£1.99	Panasonic Battery AA(4's)	098195	
£3.49	Duracell AAA Battery (4's)	045558	
£3.49	Duracell AA Battery (4's)	045554	
	TOILETRIES & HEALTH		
£1.13	Branded Toothbrush	165366	
£1.59	Whitening Toothpaste 100ml	181417	
£1.65	Afresh Trpl Protection 100ml	194833	
£1.89	Wisdom Sensitive T/paste 75ml	198243	
£1.00	F/Mint Mouthwash 500ml(VE)	104705	
£1.99	Dental Floss Sticks	132575	
£2.59	Fixodent Denture Crm	110063	
£1.40	Steradent Tablets Org 30s	960336	
£0.81	IKB Medicated Soap Bar	100593	
£0.65	IL Soap 100g	125649	
£0.89	Dove Soap Bar	797415	
£1.30	Dettol Antibac Bar Soap x2	124366	
£2.49	Lynx Excite Roll On	128929	
£1.53	Vaseline Roll-On 50ml	112076	
£0.79	IL Roll On Deodorant 50ml	099999	
£1.99	Sure Roll On 50ml	084857	
£1.00	Tango Shower Gel 400ml	193472	
£1.69	Radox Shower Gel 250ml	276121	
£2.20	Original Sce S/Gel 250ml (VE)	185859	
£1.09	IL Shower Gel For Men 250ml	187109	
£2.99	H&S 2 in 1 Classic Clean	186836	
£1.29	Enliven Shampoo App&Rsp	094801	
£1.29	Enliven Cond Ap&Ras	094803	
£2.69	Palmers Coco Oil Cond 150g	093414	
£4.24	African Prde Shamp&Cond	094606	
£0.89	Hair Gel Firm 250ml	071507	
£3.05	Dax Pomade	094602	
£0.99	Hair Brush Vented	102294	
£1.00	Afro Comb	093358	
£1.32	Cyclax Aprict Face Scrub	093403	
£1.39	Nivea Crème 50ml	298071	
£1.89	Johnsons Baby Lotion 200ml	770520	

Price	Item	IC	Qty
£4.49	E45 Cream 125g	130636	
£4.25	Palmers Coco Lotion 250ml	093244	
£1.00	3 Blade Dispose Razors 6s	183683	
£1.30	Blue II Dispose Fixed 3's	180526	
£7.99	Gillette Mach3 Blades 4s	131039	
£5.00	Gillette Mach3 Razor	180306	
£1.69	Shave Cream Tube 100g	096205	
£3.59	Gillette Shave Balm 100ml	097944	
£0.99	Face Cloth	125987	
£0.60	Sponge	187049	
£0.69	Cotton Buds 100's	100168	
£1.01	Toe Nail Clipper	102948	
£0.66	Soap Box	112525	
£1.02	Ear plugs (Pair)	105204	
£2.01	Multi Vits Tablets 60s(V)	095742	
£1.90	Cod Liver Oil Tabs 90s(GF)	097872	
£2.40	C150 Vitamin Tabs 60's(V)	099896	
£4.07	M/Vit Tabs wth Iodine 90s(VE)	108915	
£1.00	Economy Wet Wipes	180410	
£0.50	Economy Box Tissues 100s	181316	
£1.69	Imperal Leather Talc 300g	350512	
£1.79	Johnsons Baby Powder 200g	328369	
£0.65	Paracetamol Tubs 16s	102709	
£1.85	Rennie Peppermint 12s	115957	
£0.67	Lucozade Energy Tablets	122335	
£1.79	Savlon Antiseptic Cream30g	207050	
£1.49	Lypsyl Original	192403	
£1.39	Nair Hair Remover Sensi 100g	196013	
	SWEETS & SNACKS		
£1.00	Foxs Glacier Fruit Bag(V)	128772	
£1.00	Foxs Glacier Dark Bag(V)	128759	
£1.00	Skittles Fruit Treat Bag	145569	
£1.00	Starburst Fruit Treat Bag	145572	
£0.50	Haribo Giant Strawberrys	129212	
£1.00	Haribo Starmix Bag (GF)	138466	
£1.00	Haribo Tangfastics Bag(GF)	138632	
£1.00	Taveners Toffees(V,GF,H)	178577	
£1.00	Cad Choc Eclair Bag(V,GF)	144696	
£1.00	Haribo Phantasia 100g (H)	178983	
£1.59	Werthers Sugar Free Bag	113925	
£1.00	Maltesers Treat Bag(V,H,K)	147395	
£0.60	ES Milk Chocolate 100g	193246	
£0.60	ES Chocolate Frt&Nut 100g	193245	
£0.60	ES White Chocolate 100g	193242	
£0.60	ES Plain Chocolate 100g	193220	
£1.00	Galaxy Cookie Crumble Bar	145287	
£0.35	HS Caramel Bar (V)	142626	
£0.35	HS Caramel & Peanuts (V)	142625	
£0.35	HS Caramel & Biscuit (V)	142627	
£0.63	Mars Bar Std(V,K,H)	146899	
£0.59	Snickers Bar Std(V,K,H)	146947	
£0.63	Twix Twin Bar Std(K,H)	141652	
£0.65	Cadbury Crunchie (V)	032557	
£0.65	Boost Bar (V)	143187	
£0.59	Bounty Milk Std (H,K,V)	057010	
£0.15	Maoam Giant Stripes	124817	
£0.10	Haribo Tangfastics 10p	972530	
£0.50	Maoam Fruit Chews 4s	132534	
£0.47	XXX Mints Extra Strong	097499	
£0.43	Extra Ice S/F Mints(V,H,K)	003548	
£0.58	Lockets Honey & Lemon	177231	
£0.75	Halls Mentholyptus SF(V)	159831	
£0.49	KP Ready Salted Crisps(V)	401778	
£0.20	Space Raiders P/Onion	179884	
£0.20	Space Raiders Beef (V)	179902	

Price	Item	IC	Qty
£0.69	McCoys Chdar & Onion 50g(V)	145526	
£0.69	McCoys F/Grilled Steak 50g(V)	145525	
£0.69	McCoys Salt & Vinegar 50g(V)	145527	
£0.59	Burtons Fish&Chips SltVin(V)	181462	
£0.59	Prgles Sour C/Onion 40g(V)	127536	
£0.57	Doritos Chilli 40g(V)	100641	
£0.75	Jalepeno Pot Sticks(VE)	092929	
£0.65	Salted Peanuts 50g (V)	107624	
£0.65	Dry Roasted Peanuts 50g(V)	107626	
£0.65	Lichfields Chilli Peanuts 50g	168905	
£2.49	Salted Peanuts 500g (VE,K)	131293	
£1.75	Roast SaltCashew 75g(VE,K)	122524	
£1.59	Tropical Fruit&Nut 350g(V)	126933	
£0.69	Bombay Mix 80g (VE)	122522	
£0.25	Cofresh Sesame Bites(VE,K)	189246	
£0.69	Caramel Peanuts 80g (VE,K)	096009	
£1.00	Bk Sweet Popcorn (V,GF)	135153	
£0.79	Peperami Hot Sgl	746230	
	DRINKS		
£0.13	Nescafe Decaf 1 Stick(V,H)	131759	
£0.13	Nescafe Orgl 1 Stick(V,H)	131758	
£1.09	Lyons Coffee Pouch 70g	182919	
£2.99	Lyons Gld Rst Frz Coffee 150g	182918	
£3.29	Kenco Smooth Refill 100g	142472	
£3.99	Nescafe Orig 150g (V,H)	124363	
£0.90	Typhoo Eco Pack 40s	127592	
£1.39	Yorkshire Tea Bags 40s	178812	
£0.69	Economy Tea Bags 80's	116022	
£1.00	Typhoo Peppermint Tea 20s	142725	
£1.00	Typhoo Earl Grey Tea 20s	142724	
£1.39	Ridgway Red Berries Tea 20's	125117	
£1.90	Tetley Green Tea Lemon 50's	100662	
£1.69	Horlicks Traditional 200g	175342	
£2.19	Marvel 198g	144299	
£1.49	Coffee Mate 200g (V)	748681	
£0.39	Cadbry Highlight Sachet(V)	131654	
£1.79	Cadbury Choco Break 284g (V)	177255	
£0.59	Economy UHT Semi-Skim(V)	989150	
£0.65	Economy UHT Milk Whole(V)	989170	
£0.55	Economy UHT Skimmed(V)	989140	
£1.19	Soya Milk Unsweet 1Ltr(VE)	179313	
£0.70	Eco Orange Squash 1L (V)	178133	
£0.70	Eco Lemon Squash 1L (V)	178089	
£0.70	Eco NAS Apple&Black 1L(V)	178132	
£1.29	Jucee Summer Fruits 1.5 Lr	144484	
£1.29	Jucee NAS Orange & Mango 1.5L	194503	
£0.75	Economy Apple Juice 1ltr	126027	
£0.69	Economy Tropical Juice 1L	183672	
£0.85	Enonomy Mango Juice 1Ltr	135502	
£1.19	Pineapple Juice	101250	
£0.85	Economy Orange Juice 1ltr	126028	
£0.66	Cherryade NAS 2ltr(VE,GF)	986331	
£0.66	Cola NAS 2ltr(VE,GF)	986364	
£0.66	Carters Orangeade NAS 2ltr	986356	
£0.66	Lemonade 2Ltr(VE,GF)	986372	
£0.66	Diet Lemonade 2Ltr(VE,GF)	986323	
£1.71	Pepsi Max 1.5Ltr (VE)	089492	
£1.71	Pepsi Regular 1.5Ltr(VE)	089468	
£0.49	Economy Limeade SF 1Ltr	120479	
£0.50	Sunkist Lemon Can 330ml	144692	
£0.50	Sunkist Orange Can 330ml	248070	
£0.85	Coca Cola Can 330ml (VE)	282574	
£0.85	Coke Diet Can 330ml (VE)	282673	
£0.75	Irn Bru Can 330ml (VE)	408385	
£0.49	Ginger Beer Can 330ml(VE)	133392	

V - Vegetarian Ve - Vegan H - Halal Ft - Fair Trade Gf - Gluten Free Sf - Sugar Free Ho - Healthy Option K - Kosher

APPENDIX 7.14 Article published in the May 2016 edition of *Inside Times* relating to the use of electronic cigarettes for prisoners

Enquiries from women in prison

PRISON REFORM TRUST

Ryan Harman
Advice and Information Service Manager

Our advice and information service receives over 6000 contacts a year from people with a variety of prison related questions and concerns. However, only a small number of these contacts come from prisoners held in the female estate. In 2015 we received 154 enquiries from women which amounted to less than 2.5% of all enquiries received. With women accounting for about 5% of the total prison population in England and Wales, currently at around 3800, it is clear that women are underrepresented in our service.

There are a number of reasons why this may be the case. Our service predominantly receives calls from people serving longer sentences as opposed to those on short sentences or remand. Figures show that women are more likely to be serving short sentences compared to men, and so this might fit with the general pattern of use of our service. We also expect, and hope, that women are accessing advice and information elsewhere, perhaps from services which are specifically tailored to their needs. However, there may also be wider reasons for this difference.

A learning lessons paper produced by the Prisons and Probation Ombudsman (PPO) in March 2015 asked the question 'why do women and young people in custody not make formal complaints?' As part of this investigation, participants were asked how they usually resolved complaints. Female participants reported less use of the formal complaints system, and a preference for trying to resolve issues informally themselves. A general lack of confidence in the complaints system and the feeling that the process is too slow also contributed to this - views which are often echoed by people who contact us from across the prison system as a whole. More concerning is the fear some women reported of being seen as disruptive and this having a negative impact on decisions such as HDC or Parole.

When reviewing the contacts we have had with women throughout the last year, a few noticeable trends were apparent. Release on Temporary Licence (ROTL) has been by far the most common subject of enquiry, which is consistent of our service as a whole for this period. Family contact is unsurprisingly a reoccurring theme, with enquiries including family visits, inter-prison visits, and the sending and receiving of letters and other items.

The most notable aspect in our contact with women is the difference in the use of our service. The majority of our contacts are single enquiries with little follow up from the prisoner. They tend to be straightforward requests for information or advice with few expectations or requests for further involvement on our part. Although we cannot draw firm conclusions, this could be indicative of a greater reluctance to ask for help or been seen to be disruptive, as suggested by the PPO findings, or it could indicate that some women prefer to try to resolve issues themselves.

It certainly seems likely that there is an overlap with the PPO findings and the reasons for underrepresentation in our own service. We would be interested in finding out more and we encourage any women in prison who are in need of information or advice to contact us. We can provide you with information and advice about common concerns such as ROTL procedures and visits including accumulated and inter-prison visits, as well as more women specific areas such as access to Mother and Baby Units (MBUs). Our service is confidential and we only contact prisons on your behalf in exceptional circumstances and with your authorisation.

The issues and concerns raised through our advice and information service also help to inform the Prison Reform Trust's work with government and make sure we call for changes that matter most to women in the criminal justice system. We have long called for a reduction in women's imprisonment in the UK and a step change in how the criminal justice system responds to the needs of women, and your input could be a valuable contribution to this.

You can contact the Prison Reform Trust's advice team at FREEPOST ND6125 London EC1B 1PN. Our free information line is open Monday, Tuesday and Thursday 3.30-5.30. The number is 0808 802 0060 and does not need to be put on your pin.

A more satisfying vape

Electronic cigarettes are available in prisons and will soon be the alternative to tobacco for those wishing to continue to use nicotine in a much safer manner. Inside Time's John Roberts asked Andy Morrison of the New Nicotine Alliance, a charity concerned with improving public health through a greater understanding of 'new' (risk-reduced) nicotine products, to provide readers with some useful information.

"I'm delighted that e-cigarettes are to be introduced to prisons as a first step towards tobacco harm reduction.

On a personal note, I was an out and out smoker of 20 per day, and nobody was going to stop me. I enjoyed it, it was a part of my life and I left a very high profile job solely on the basis that the company I worked for were going to ban smoking. That was back in 1999 and I continued to smoke but on a self-employed basis where nobody could tell me what to do.

In December 2011, I decided to try one of these 'fake cigarettes' for a laugh, but to my surprise I saw the potential they held. It took a few weeks, but then there was no looking back. So I'm now well over 4 years smoke free - and you can do it too if you give it a chance.

The device to be introduced is known as a 1st generation e-cigarette (commonly known as a cig-a-like because of their resemblance to cigarettes as opposed to the more modern tank systems that we see in the streets today) which has additional features in order to be accepted for use in a secured environment. 1st generation devices have limitations as to their effectiveness, but, for many, it should prove to be useful when used in the correct manner

It is important to know that the technique of vaping can be different to smoking in several aspects. Here's what to expect, and the best ways to use one of these devices according to the observations that I made when I first encountered these products:

1. The taste will be different to that of a normal cigarette. It's practically impossible to mimic the exact taste of combusted tobacco, but stick with it even if it seems alien at first.

> *"Take a long slow draw into the mouth and then inhale. Exhale through both the mouth and nose in order to maximise the flavour perception"*

2. Drawing technique is different. Expect to be taking a 4 second puff from an e-cigarette as opposed to a 2 second puff from a cigarette. Take a long slow draw into the mouth and then inhale. Exhale through both the mouth and nose in order to maximise the flavour perception. Everyone is different - you will find what is right for you in time.

3. Whilst vaping is deemed to be at least 95% safer than smoking according to Public Health England, there are a few things that you might look out for. Because they are glycerine based, this can dry up the saliva in the mouth at times - this is easily resolved by sipping water. Initially you may experience a dry or scratchy throat - again, have water at hand and this will pass as you get used to vaping - it's similar to changing to a different brand of cigarette. If you get a headache, then this will be down to over-use. It will pass quickly if you stop vaping for an hour or so.

4. Don't believe the claims that one e-cigarette is the equivalent of x number of cigarettes. Puff machines are used to determine this and in my opinion they don't mimic real world human use. Calibrated machines help compare one product to another but as with smokers, vapers are all different and will get varying results. Same as car makers' mpg claims, they're good for comparing one car with another but you might not get the mpg quoted. A 20 per day smoker vaping in the same way they smoke a cigarette can maybe expect to go through one e-cigarette per day. On the plus side, using an e-cigarette correctly, grazing and putting it down rather than smoking a whole cigarette at once you will see the benefits.

5. Finally, share your experiences with others who are making the switch to vaping. A lot can be learned from those who have successfully made the switch. Be prepared to exchange views on drawing technique in particular - once you master the best way for you, then you are well on the road to being smoke free."

APPENDIX 7.15 DHL canteen products (NRT and electronic cigarettes) available from HMP Exeter after smoke-free implementation

Blue

Exeter

Note: Available Spend Cannot Be Manually Amended

Prices charged From: 10/07/16
To: 16/07/16

Price	Item	IC	Qty
	PHONE & STAMPS		
£1.00	Phone Credit	PC	
£0.54	1st Class Stamp	096207	
£0.55	2nd Class Stamp	096208	
£0.10	10p Postage Stamp	125683	
£0.01	1p Postage Stamp	125678	
	VAPING		
£2.50	Brio Class 18mg Approx300puff	193065	
£2.50	Brio Menth 9mg Approx300puff	199895	
£1.45	VIPure Class 14mgApprx200Puff	200846	
£1.45	VIPure Menth 14mgApprx200Puff	200847	
£5.99	blu Sky Menth 18mgAppr300Puff	177685	
£5.99	blu Sky Class 18mgAppr300Puff	177682	
	NRT		
£11.99	Nicorette Loz Mint 2mg 80s	200235	
£3.29	Nicorette Loz Mint 2mg 20s	200236	
£11.99	Nicorette Loz Mint 4mg 80s	200222	
£15.99	Nicorette Inhalator 15mg 20s	200224	
£4.49	Nicorette Inhalator 15mg 4s	200223	
£10.99	Nicorette Inv Patch 10mgStep3	200205	
£10.99	Nicorette Inv Patch 15mgStep2	200209	
£10.99	Nicorette Inv Patch 25mgStep1	200234	
	BATTERIES		
£1.49	Panasonic Battery AAA(4's)	098195	
£1.99	Panasonic Battery AA(4's)	098195	
£3.49	Duracell AAA Battery (4's)	045558	
£3.49	Duracell AA Battery (4's)	045554	
	TOILETRIES & HEALTH		
£1.13	Branded Toothbrush	165366	
£1.59	Whitening Toothpaste 100ml	181417	
£1.65	A/fresh Tpl Protection 100ml	194833	
£1.00	Colgate Cavity Protect 75ml	199326	
£2.85	K/sher T/Paste 100ml(VE)	165165	
£1.00	F/Mint Mouthwash 500ml(VE)	104705	
£1.99	Dental Floss Sticks	201783	
£2.59	Fixodent Denture Crm	110063	
£1.40	Steradent Tablets Org 30s	960336	
£0.61	IKB Medicated Soap Bar	100593	
£0.65	IL Soap 100g	125649	
£0.89	Dove Soap Bar	797415	
£1.30	Dettol Antibac Bar Soap x2	124366	
£1.53	Vaseline Roll-On 50ml	112076	
£0.79	IL Roll On Deodorant 50ml	099999	
£1.99	Sure Roll On 50ml	084857	
£1.09	IL Shower Gel 250ml	187152	
£1.00	Radox SG Flavoured 250ml	196505	
£2.20	Original Sce S/Gel 250ml (VE)	185859	
£1.09	IL Shower Gel For Men 250ml	187109	
£2.99	H&S 2 in 1 Classic Clean	186836	
£1.00	Enliven Shampoo App&Rep	094801	
£1.00	Enliven Cond Ap&Ras	094803	
£2.69	Palmers Coco Oil Cond 150g	093414	
£4.24	African Pride Shamp&Cond	094606	
£0.89	Hair Gel Firm 250ml	071507	
£3.05	Dax Pomade	094602	
£0.99	Hair Brush Vented	102294	
£1.00	Afro Comb	093358	
£1.32	Cyclax Aprict Face Scrub	093403	
£1.39	Nivea Crème 50ml	298071	
£1.89	Johnsons Baby Lotion 200ml	770520	
£4.25	Palmers Coco Lotion 250ml	093244	
£1.00	3 Blade Dispose Razors 6s	183683	
£1.30	Blue II Dispose Fixed 3's	180526	
£7.99	Gillette Mach3 Blades 4s	131039	
£5.00	Gillette Mach3 Razor	200768	
	#1 = 3 for £1		

Price	Item	IC	Qty
£1.69	Shave Cream Tube 100g	096205	
£3.59	Gillette Shave Balm 100ml	097944	
£0.99	Face Cloth	125987	
£0.60	Sponge	187049	
£0.69	Cotton Buds 100's	100168	
£1.01	Toe Nail Clipper	102948	
£0.66	Soap Box	112525	
£1.02	Ear plugs (Pair)	105204	
£2.97	B Complex Vitamins 100s	203905	
£2.01	Multi Vits Tablets 60s(V)	095742	
£1.90	Cod Liver Oil Tabs 90s(GF)	097872	
£2.40	C150 Vitamin Tabs 60's(V)	099896	
£4.07	M/Vit Tabs wh Iodine 90s(VE)	108915	
£1.00	Economy Wet Wipes	180410	
£0.50	Economy Box Tissues 100s	204299	
£1.69	Imperial Leather Talc 300g	350512	
£1.79	Johnsons Baby Powder 200g	328369	
£0.65	Paracetamol Tubs 16s	102709	
£1.85	Rennie Peppermint 12s	115957	
£0.67	Lucozade Energy Tablets	122335	
£1.79	Savlon Antiseptic Cream30g	207050	
£1.49	Lypsyl Original	192403	
£1.39	Nair Hair Remover Sensi 100g	196013	
£6.99	Ambre Solaire Milk SPF30	133816	
	SWEETS & SNACKS		
£1.00	Foxs Glacier Fruit Bag(V)	128772	
£1.00	Foxs Glacier Dark Bag(V)	128759	
£1.00	Skittles Fruit Treat Bag	145569	
£1.00	Starburst Fruit Treat Bag	145572	
£0.50	Haribo Giant Strawberrys	129212	
£1.00	Haribo Starmix Bag (GF)	138466	
£1.00	Haribo Tangfastics Bag(GF)	138632	
£1.00	Taveners Toffees(V,GF)	210822	
£1.00	Maynard Wine Gums Bag	144697	
£1.00	Cad Choc Eclair Bag(V,GF)	144696	
£1.00	Maynard Midget Gems Bag	144698	
£1.00	Maynard Sports Mix Bag	144713	
£1.00	Haribo Phantasia 100g (H)	178983	
£1.59	Werthers Sugar Free Bag	113925	
£1.00	Maltesers Treat Bag(V,H,K)	202714	
£1.00	Cadbury Dairy Milk 95g (V)	199453	
£0.50	ES Milk Chocolate 100g	114353	
£0.60	ES Chocolate Frt&Nut 100g	193245	
£0.50	ES White Chocolate 100g	133593	
£0.50	ES Plain Chocolate 100g	133578	
£1.00	Galaxy Cookie Crumble Bar	145287	
£0.35	#1 HS Caramel Peanut Bar (V)	201054	
£0.35	#1 HS Choco Caramel Bar (V)	201055	
£0.35	#1 HS Caramel Biscuit Bar (V)	201052	
£0.63	Mars Bar Std(V,K,H)	146899	
£0.59	Snickers Bar Std(V,K,H)	146947	
£0.63	Twix Twin Bar Std(K,H)	141652	
£0.65	Cadbury Crunchie (V)	032557	
£0.65	Boost Bar (V)	143187	
£0.59	Bounty Milk Std (H,K,V)	057010	
£0.15	Maoam Giant Stripes	124817	
£0.10	Haribo Tangfastics 10p	972530	
£0.50	Maoam Fruit Chews 4s	132534	
£0.47	XXX Mints Extra Strong	097499	
£0.43	Dbimnt Peppermint S/F Ml	201846	
£0.58	Lockets Honey & Lemon	177231	
£0.75	Halls Mentholyptus SF(V)	159831	
£0.69	McCoys R Salted Grab Bag(V)	201552	
£0.20	Space Raiders P/Onion	179884	
£0.20	Space Raiders Beef (V)	179902	
	#1 = 3 for £1		

Price	Item	IC	Qty
£0.20	Space Raiders BBQ (V)	179904	
£0.55	McCoys Thick Cut Cheddar & Onion	202458	
£0.59	Pringles Sour C/Onion 40g(V)	127536	
£0.57	Doritos Chilli 40g(V)	201636	
£0.75	Jalepeno Pot Sticks(VE)	092929	
£0.65	Salted Peanuts 50g (V)	107624	
£0.65	Dry Roasted Peanuts 50g(V)	107626	
£2.49	Salted Peanuts 500g (VE,K)	131293	
£1.75	Roast SaltCashew 75g(VE,K)	122524	
£1.59	Tropical Fruit&Nut 350g(V)	126933	
£0.69	Bombay Mix 60g (VE)	122522	
£0.25	Cofresh Sesame Bites(VE,K)	189246	
£0.69	Caramel Peanuts 80g (VE,K)	096009	
£1.00	Bk Sweet Popcorn (V,GF)	135153	
£0.79	Peperami Hot Sgl PM79	203129	
£0.69	Hummus Chip S/Salt (VE,K,GF)	193555	
£0.69	Quinoa Chip SourCrm (VE,K)	193558	
	DRINKS		
£0.13	Nescafe Decaf 1 Stick(V,H)	131759	
£0.13	Nescafe Orgl 1 Stick(V,H)	131758	
£1.09	Lyons Coffee Pouch 70g	182919	
£2.99	Lyons Gld Rst Frz Coffee 150g	182918	
£3.29	Kenco Smooth Refill 100g	142472	
£3.99	Nescafe Orig 150g (V,H)	124363	
£0.90	Typhoo Eco Pack 40s	127562	
£1.35	PG Tips Pyramid 40s	179733	
£0.69	Economy Tea Bags 80's	116022	
£1.29	Lichfields Earl Grey Tea 20s	130234	
£1.29	Red Berries Tea 20s	130219	
£1.90	Tetley Green Tea Lemon 50's	100662	
£1.69	Horlicks Traditional 200g	175342	
£2.19	Marvel 198g	144299	
£1.49	Coffee Mate 200g (V)	748661	
£0.39	Cadbry Highlight Sachet(V)	131654	
£1.79	Cadbury Choco Break 284g (V)	177255	
£0.59	Economy UHT Semi-Skim(V)	989150	
£0.65	Economy UHT Milk Whole(V)	989170	
£0.55	Economy UHT Skimmed(V)	989140	
£1.19	Soya Milk Unsweet 1Ltr(VE)	179313	
£0.70	Eco Orange Squash 1L (V)	176133	
£0.70	Eco Lemon Squash 1L (V)	176089	
£0.70	Eco NAS Apple&Black 1L(V)	176132	
£1.29	Jucee Summer Fruits 1.5 Lr	144484	
£1.29	Jucee NAS Orange & Mango 1.5L	194503	
£0.75	Economy Apple Juice 1ltr	126027	
£0.69	Economy Tropical Juice 1L	183672	
£0.85	Enonomy Mango Juice 1Ltr	135502	
£1.50	Princes Juice Pineapple	234039	
£1.19	Sunpride Tomato Juice	216961	
£0.85	Economy Orange Juice 1ltr	126028	
£0.66	Cherryade NAS 2ltr(VE,GF)	986331	
£0.66	Cola NAS 2ltr(VE,GF)	986364	
£0.66	Carters Orangeade NAS 2ltr	986356	
£0.66	Lemonade 2Ltr(VE,GF)	986372	
£0.66	Diet Lemonade 2Ltr(VE,GF)	986323	
£1.71	Pepsi Max 1.5Ltr (VE)	089492	
£1.29	Coca Cola 1.25Ltr(VE)	200835	
£0.50	Sunkist Lemon Can 330ml	144692	
£0.50	Sunkist Orange Can 330ml	246070	
£0.85	Coca Cola Can 330ml (VE)	282574	
£0.85	Coke Diet Can 330ml (VE)	282673	
£0.59	Dr Pepper Can 330ml	168809	
£0.49	KA Blk Grp Can 330ml(VE)	116446	
£0.49	Ginger Beer Can 330ml(VE)	133392	
£0.49	KA Fruit Punch Can(VE)	116098	
	#1 = 3 for £1		

V - Vegetarian Ve - Vegan H - Halal Ft - Fair Trade Gf - Gluten Free Sf - Sugar Free Ho - Healthy Option K - Kosher

APPENDIX 7.16a Questionnaire for prisoners pre-policy

UKCTAS
UK Centre for Tobacco & Alcohol Studies

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Leah Jayes & Chris Hill

VOLUNTEER QUESTIONNAIRE

Please take a few minutes to answer these questions. We would like to gather your views on this prison going tobacco and smoke-free.

Put a cross in the box you feel expresses your view best.

If you do not understand any questions or need help with reading or writing please ask one of the researchers and they will be able to help you.

SECTION 1

ALL PARTICIPANTS TO COMPLETE THIS SECTION

---

1. Which wing do you currently live on (A,B,D,E,F,G)?

_____

2. What is your age?

_____

3. How would you describe your ethnic group?

[ ] White – British
[ ] White – Irish
[ ] Other white background
[ ] Mixed - white and black Caribbean
[ ] Mixed - white and Asian
[ ] Other mixed background
[ ] Asian or Asian British – Indian
[ ] Asian or Asian British – Pakistani
[ ] Asian or Asian British – Bangladeshi
[ ] Other Asian background
[ ] Black or black British – Caribbean
[ ] Black or black British – African
[ ] Other black background
[ ] Chinese
[ ] Other. Please specify:

_____

4. Are you currently on remand or are you sentenced?

[ ] Remand
[ ] Sentenced

5. How long have you been in prison for on your current sentence or period of remand?

[ ] Less than one week
[ ] 1 week - 1 month
[ ] 1 – 3 months
[ ] 3 - 6 months
[ ] 6 months - 1 year
[ ] 1 – 3 years
[ ] 3 – 10 years
[ ] Over 10 years

6. Have you been on an Assessment Care in Custody and Teamwork (ACCT) document in the last year?

[ ] Yes
[ ] No

7. Do you spend most of your daytime period (Monday – Friday 9am – 5pm) in your cell?

[ ] Yes (go to question 8)
[ ] No (go to question 7a)

7a. If 'No' where do you spend most of your daytime period? (Monday – Friday, 9am-5pm)?
(You can tick more than one box)

[ ] Offender Behaviour Programme
[ ] Education
[ ] Work/workshop
[ ] Orderly (eg. Gym/Cleaner/Chaplaincy)
[ ] Listener/Insider/Mentor
[ ] Other. Please specify: _____

8. Do you currently share a cell with another prisoner/s?

[ ] Yes (go to question 8a)
[ ] No (go to question 9)

8a. If 'Yes' do they smoke

[ ] Yes
[ ] No

9. Have you ever ordered an e-cigarette off the canteen sheet whilst in prison?

[ ] Yes (go to question 9a)
[ ] No (go to question 10)

9a. If 'Yes', do you now use an e-cigarette regularly (order one at least one a month)?

[ ] Yes - what brand/s? _____
[ ] No

10. On average, how much loose tobacco do you buy from the canteen per week?
(A standard pack/pouch of tobacco is 12.5 grams)

[ ] None
[ ] 0 - 12.5 grams per week (standard pouch)
[ ] 12.5 - 25 grams per week]
[ ] More than 25 grams per week

11. On reception into this prison, did you receive a smoker, non-smoker, or e-cigarette reception pack?

[ ] Smokers pack
[ ] Non-smoker pack
[ ] E-Cigarette pack
[ ] I do not receive any of the above

12. Have you seen any communication (notices to prisoners/posters/leaflets) relating to this prison going tobacco and smoke-free in the future?

[ ] Yes (go to question 12a, 12b & 12c)
[ ] No (go to question 13)

12a. If 'Yes' which of the following have you seen?
(you can tick more than one box)

[ ] Notice to prisoners
[ ] Leaflets
[ ] Posters
[ ] Other _____

12b. If 'Yes' where did you see them?
(you can tick more than one box)

[ ] Reception
[ ] Healthcare
[ ] Wing landings
[ ] Before you came into prison
[ ] At another prison
[ ] Other _____

12c. If 'Yes' how useful and informative did you find this communication?

[ ] Good
[ ] Average
[ ] Poor

13. What is your current tobacco smoking status?

[ ] Smoker (Go to **Section 2**)
[ ] Ex-Smoker (quit smoking over 3 months ago) (go to **Section 3**)
[ ] Non-Smoker (go to **Section 3**)

SECTION 2

PLEASE ONLY COMPLETE THIS SECTION IF YOU ARE A CURRENT TOBACCO SMOKER

---

1. On average, how many cigarettes do you smoke per day?

_____per day

2. When you came into prison on your current sentence or period of remand were you a smoker, an ex-smoker or a non-smoker?

[ ] Smoker
[ ] Ex-Smoker (quit smoking over 3 months ago)
[ ] Non-Smoker

3. How long have you smoked tobacco for?

[ ] 0-5 years
[ ] 6-10 years
[ ] 11-20 years
[ ] 21-30 years
[ ] More than 30 years

4. How soon after waking do you smoke your first cigarette of the day?

[ ] Within 5 minutes
[ ] Between 6 and 30 minutes
[ ] Between 31 and 60 minutes
[ ] After 60 minutes

5. Are you currently using an e-cigarette alongside smoking tobacco?

[ ] Yes
[ ] No

6. Would you like to stop smoking tobacco?

[ ] Yes
[ ] No
[ ] Unsure

7. Have you ever tried to stop smoking tobacco before (inside or outside of prison)?
[ ] Yes (go to question 7a)
[ ] No (go to question 8)

7a. If 'Yes' how many times have you tried to stop smoking tobacco?

_____

8. In the run up to this prison going tobacco and smoke-free would you like any help to cut down or stop tobacco smoking?
[ ] Yes
[ ] No
[ ] Unsure

9. Which of the following would help you to cut down or quit smoking in the move towards going tobacco and smoke-free?
(you can tick more than one box)
[ ] Information leaflets/booklets
[ ] Health & Wellbeing Days
[ ] Help to support self-management
[ ] Nicotine Replacement Therapy (NRT) (eg. Patches/lozenges/Inhalator/Mouth Strips)
[ ] Behaviour support from healthcare staff
[ ] Support from prison staff trained in smoking cessation (eg. wing/gym staff)
[ ] Support from prisoners who could be trained in smoking cessation (eg. mentors)
[ ] Support from family members
[ ] Support from friends/fellow prisoners
[ ] Telephone quit line
[ ] E-Cigarette
[ ] More activities
[ ] No help
[ ] Other. Please specify: _____

SECTION 3

ALL PARTICIPANTS TO COMPLETE THIS SECTION

---

1. Do you want this prison to go completely tobacco and smoke-free?
   [ ] Yes
   [ ] No
   [ ] Unsure

2. Can you write down any positive outcomes from this prison going tobacco and smoke-free?

1._____

2._____

3._____

_____

3. Can you write down any negative outcomes from this prison going tobacco and smoke-free?

1._____

2._____

3._____

_____

4. What could the prison do to make the move towards becoming tobacco and smoke-free easier for prisoners and staff members?

_____

_____

_____

_____

Thank you for completing the questionnaire

APPENDIX 7.16b Questionnaire for prisoners post-policy

UKCTAS
UK Centre for Tobacco & Alcohol Studies

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Title of Project: Tobacco and Smoke-Free Prisons

Name of Researchers: Leah Jayes & Chris Hill

VOLUNTEER QUESTIONNAIRE

Please take a few minutes to answer these questions. We would like to gather your views on this prison going tobacco and smoke-free.

Leave any questions you do not want to answer blank. Do not put your name on the form. Put a cross in the box you feel expresses your view best. We will have a chance to discuss your views further at the end.

If you do not understand any questions or need help with reading or writing please ask one of the researchers and they will be able to help you.

Put a cross in the box you feel expresses your view the best

SECTION 1

ALL PARTICIPANTS TO COMPLETE THIS SECTION

---

1. Which wing/unit do you currently live on (eg. A,B,C, Silbury, Alfred, Avon, Humber etc)?

_____

2. What is your age?

_____years

3. How would you describe your ethnic group?

[ ] White – British
[ ] White – Irish
[ ] Other white background
[ ] Mixed - white and black Caribbean
[ ] Mixed - white and Asian
[ ] Other mixed background
[ ] Asian or Asian British – Indian
[ ] Asian or Asian British – Pakistani
[ ] Asian or Asian British – Bangladeshi
[ ] Other Asian background
[ ] Black or black British – Caribbean
[ ] Black or black British – African
[ ] Other black background
[ ] Chinese
[ ] Other. Please specify:

_____

4. Are you currently on remand or sentenced?

[ ] Remand
[ ] Sentenced

5. How long have you been in prison for on your current sentence or period of remand?

[ ] 0 - 3months
[ ] 3 - 6 months
[ ] 6 months - 1 year
[ ] 1 – 3 years
[ ] 3 – 10 years
[ ] Over 10 years

6. Have you been on an Assessment Care in Custody and Teamwork (ACCT) document in the last year?

[ ] Yes
[ ] No

7. Do you spend most of your daytime period (Monday – Friday 9am – 5pm) in your cell?

[ ] Yes (go to question 8)
[ ] No (go to question 7a)

7a. If 'No' where do you spend most of your daytime period? (Monday – Friday, 9am-5pm)? (You can tick more than one box)

[ ] Offender Behaviour Programme
[ ] Education
[ ] Work/workshop
[ ] Orderly (eg. Gym/Cleaner/Chaplaincy)
[ ] Listener/Insider/Mentor
[ ] Other. Please specify: _____

8. Have you ever ordered an e-cigarette off the canteen sheet whilst in prison?

[ ] Yes (go to question 8a)
[ ] No (go to question 9)

8a. If 'Yes', do you now use an e-cigarette regularly (order one at least one a month)?

[ ] Yes - what brand/s? _____
[ ] No

9. On reception into this prison, did you receive a smoker, non-smoker, or e-cigarette reception pack?

[ ] Smokers pack
[ ] Non-smoker pack
[ ] E-Cigarette pack
[ ] I did not receive any of the above

SECTION 2

ALL PARTICIPANTS TO COMPLETE THIS SECTION

---

1. Are you aware of prisoners smoking tobacco in this prison since it went tobacco smoke-free on [insert date] 2016?

[ ] Yes
[ ] No

2. Have you smoked tobacco in this prison since it went smoke-free on [insert date] 2016?

[ ] Yes
[ ] No

3. Do you think there is enough support available at HMP [insert name] for prisoners to remain smoke-free until release or transfer?

[ ] Yes
[ ] No
[ ] Unsure

4. Do you think there has been an increase in prisoner incidents (e.g aggression, self-harm) due to this prison going smoke-free?

[ ] Yes
[ ] No
[ ] Unsure

5. Do you think there has been an increase in prisoner drug use due to this prison going smoke-free?

[ ] Yes
[ ] No
[ ] Unsure

6. How do you feel going smoke-free at HMP [insert name] has had any impact on your health?

My health has got:

[ ] Better
[ ] The same
[ ] Worse

7. Do you think other prisons throughout England should go completely smoke-free in the future?

[ ] Yes
[ ] No
[ ] Unsure

8. Can you write down any positive outcomes of this prison now being smoke-free?

_____

_____

_____

9. Can you write down any negative outcomes of this prison now being smoke-free?

_____

_____

_____

10. Were you living at HMP [insert name] on [insert date] 2016, the date the prison went tobacco and smoke-free?

[ ] Yes – **GO TO SECTION 3**
[ ] No – **GO TO SECTION 4**

SECTION 3

ONLY COMPLETE IF YOU WERE LIVING AT THIS PRISON BEFORE THE DATE IT WENT SMOKE-FREE [insert date] 2016

1. Do you feel enough notice and publicity was given to inform prisoners that this prison was going smoke-free?

[ ] Yes
[ ] No
[ ] Unsure

2. Do you think the communication (notice to prisoners, posters) gave enough information about the process of going smoke-free and outlined the stop smoking services available at the prison?

[ ] Yes
[ ] No
[ ] Unsure

3. Before the prison went smoke-free on [insert date] 2016, what was your smoking status?

[ ] Smoker - **COMPLETE SECTION 5**

[ ] Ex-Smoker (quit smoking over 3 months ago)
[ ] Non-Smoker

SECTION 4

ONLY COMPLETE IF YOU STARTED LIVING AT THIS PRISON AFTER THE DATE IT WENT SMOKE-FREE, [insert date] 2016

1. How did you find out that HMP [insert name] was a smoke-free prison?

[ ] Staff member
[ ] Poster/leaflet
[ ] Prisoner
[ ] Family member
[ ] Other _____

2. What was your smoking status when you first arrived at HMP [insert name]?

[ ] Smoker - **COMPLETE SECTION 5**

[ ] Ex-Smoker (quit smoking over 3 months ago)
[ ] Non-Smoker

SECTION 5

ONLY COMPLETE IF YOU WERE A SMOKER BEFORE THE SMOKE-FREE POLICY

1. Did you want to stop smoking before this prison went smoke-free?
   - [ ] Yes
   - [ ] No
   - [ ] Unsure

2. Did you use any of the following to help you cut down or stop smoking in the run up to this prison going tobacco and smoke-free? (You can tick more than one box)
   - [ ] Nicotine Replacement Therapy (eg. patch, lozenges)
   - [ ] E-Cigarette
   - [ ] Information leaflets/booklets
   - [ ] Behaviour support from healthcare staff
   - [ ] Support from prison staff trained in smoking cessation (eg. wing/gym)
   - [ ] Support from prisoners trained in smoking cessation (eg. mentors)
   - [ ] Support from family members
   - [ ] Support from friends/fellow prisoners
   - [ ] More activities
   - [ ] No help
   - [ ] Other. Please specify: _____

   2a. If you used Nicotine Replacement Therapy (NRT), which products did you use? (You can tick more than one box)
      - [ ] Patch
      - [ ] Inhalator
      - [ ] Mouth strips
      - [ ] Lozenges
      - [ ] Other. Please specify:_____

3. Do you feel you received enough help from HMP [insert name] to support your move towards smoke-free?
   - [ ] Yes
   - [ ] No
   - [ ] Unsure

4. Instead of tobacco, what do you now spend your canteen money on?
(you can tick more than one box)
   - [ ] Food
   - [ ] E-Cigarette – which brand/name:_____
   - [ ] Telephone Credit
   - [ ] Toiletries
   - [ ] Clothes
   - [ ] Other. Please specify _____

5. Will you remain smoke-free once you are transferred or released from this prison?
   - [ ] Yes
   - [ ] No
   - [ ] Unsure

APPENDIX 7.17a Questionnaire for staff members pre-policy

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Leah Jayes & Chris Hill

STAFF QUESTIONNAIRE

Please take a few minutes to answer these questions. We would like to gather your views on this prison going tobacco and smoke-free. If you do not want to answer any question please leave it blank. Do not put your name on the form.

We are holding focus groups with staff members between [insert names] 2016 to collect further information about your thoughts and feelings towards this prison going tobacco and smoke-free. They will last around 15 minutes, if you are interested in attending one of these sessions please contact the researcher (leah.jayes@nottingham.ac.uk) or our contacts at the prison (insert name of smoke-free champion/SPOC). These sessions are run by researchers from the University of Nottingham and are completely confidential.

Put a tick in the box you feel expresses your view best.

SECTION 1

ALL PARTICIPANTS TO COMPLETE THIS SECTION

---

1. What is your sex?

[ ] Male
[ ] Female

2. What is your age?

_____

3. How would you describe your ethnic group?

[ ] White – British
[ ] White – Irish
[ ] Other white background
[ ] Mixed - white and black Caribbean
[ ] Mixed - white and Asian
[ ] Other mixed background
[ ] Asian or Asian British – Indian
[ ] Asian or Asian British – Pakistani
[ ] Asian or Asian British – Bangladeshi
[ ] Other Asian background
[ ] Black or black British – Caribbean
[ ] Black or black British – African
[ ] Other black background
[ ] Chinese
[ ] Other. Please specify:_____

4. How would you best describe your job role?

[ ] Uniformed officer (including OSG grade)
[ ] Line Manager/Senior Officer
[ ] Senior Management Team
[ ] Administrative
[ ] Healthcare
[ ] Contractor
[ ] Support services
[ ] Other. Please specify: _____

5. How long have you been employed by the prison service (including other establishments)?

_____ years

6. In your role, do you have direct prisoner contact?

[ ] Yes (go to question 6a)
[ ] No (go to question 7)

6a.If 'yes', on average is this:

[ ] Up to 25% of your time
[ ] Between 26%-50% of your time
[ ] Between 51%-75% of your time
[ ] Over 76% of your time

7. Would you like this prison to go tobacco and smoke-free?

[ ] Yes
[ ] No
[ ] Unsure

8. Will the new tobacco and smoke-free policy have any impact on your day-to-day work load?

[ ] Yes, very much
[ ] Yes, a little
[ ] No, not at all

9. Whilst at work do you feel like you are ever exposed to any second-hand tobacco smoke (passive smoke)?

[ ] Yes
[ ] No
[ ] Unsure

10. Do you regularly use an e-cigarette?

[ ] Yes
[ ] No

11. Have you seen any communication aimed at staff (notices to staff/posters/leaflets) relating to this prison going tobacco and smoke-free in the future?

[ ] Yes (go to question 11a &11b)
[ ] No (go to question 12)

11a. If 'Yes' which of the following have you seen?
(you can tick more than one box)

[ ] Notice to staff
[ ] Leaflets
[ ] Posters
[ ] Other _____

11b. How useful and informative did you find the communication aimed at staff members?

[ ] Good
[ ] Average
[ ] Poor

12. What is your current tobacco smoking status?

[ ] Smoker (Go to **Section 2**)
[ ] Ex-Smoker (quit smoking over 3 months ago) (go to **Section 3**)
[ ] Non-Smoker (go to **Section 3)**

SECTION 2

PLEASE ONLY COMPLETE THIS SECTION IF YOU ARE A CURRENT TOBACCO SMOKER

---

1. On average, how many cigarettes do you smoke per day?

_____per day

2. How long have you been a smoker for?

[ ] 0-5 years
[ ] 6-10 years
[ ] 11-20 years
[ ] 21-30 years
[ ] More than 30 years

3. How soon after waking do you smoke your first cigarette of the day?

[ ] Within 5 minutes
[ ] Between 6 and 30 minutes
[ ] Between 31 and 60 minutes
[ ] After 60 minutes

4. Are you currently using an e-cigarette alongside smoking tobacco?

[ ] Yes
[ ] No

5. Would you like to stop smoking tobacco?

[ ] Yes
[ ] No
[ ] Unsure

6. Have you ever tried to give up tobacco smoking before?

[ ] Yes (go to question 6a)
[ ] No (go to question 7)

6a. If 'Yes' how many times have you tried to give up before?_____

7. If this prison offered staff members help to stop smoking (e.g. Nicotine Replacement Therapy, behavioural support) would you access it?

[ ] Yes
[ ] No
[ ] Unsure

8. When this prison goes tobacco and smoke-free will you change your smoking patterns (how often you smoke/come much you smoke/where you smoke)?

[ ] Yes
[ ] No
[ ] Maybe

9. Do you currently leave the prison to smoke on your breaks during working hours (eg. lunch)?

[ ] Yes
[ ] No

10. Do you use any form of Nicotine Replacement Therapy (NRT) whilst at work? (eg. Patches, lozenges, Inhalator, Mouth Strips)

[ ] Yes (go to question 10a)
[ ] No

10a. If 'Yes' what form of NRT do you use?

[ ] Patches
[ ] Lozenges
[ ] Inhalator
[ ] Oral/Mouth Strips
[ ] Mouth spray/ quick mist
[ ] Nasal spray

SECTION 3

ALL PARTICIPANTS TO COMPLETE THIS SECTION

---

1. In your current role, do you think it would be useful for you to receive training on how to support prisoners who would like to stop smoking?

[ ] Yes
[ ] No
[ ] I do not come into contact with prisoners

2. In the run up to this prison going tobacco and smoke-free what do you think would be the best support to offer prisoners who need to go tobacco-free? (you can tick more than one box)

[ ] Information leaflets/booklets
[ ] Health & Wellbeing Days
[ ] Help to support self-management
[ ] Nicotine Replacement Therapy (NRT) (eg. Patches/lozenges)
[ ] Behaviour support from healthcare staff
[ ] Support from prison staff trained in smoking cessation (eg. wing/gym)
[ ] Support from prisoners who could be trained in smoking cessation(eg.mentors)
[ ] Support from family members
[ ] Support from friends/fellow prisoners
[ ] Telephone quit line
[ ] E-Cigarette
[ ] More activities
[ ] No help
[ ] Other. Please specify: _____

3. Do you think there will be an increase in prisoner incidents (e.g aggression, self-harm) due to this prison going tobacco and smoke-free?

[ ] Yes
[ ] No
[ ] Unsure

4. Can you write down any positive outcomes from this prison going tobacco and smoke-free?

1._____

2._____

3._____

5. Can you write down any negative outcomes from this prison going tobacco and smoke free?

1._____

2._____

3._____

6. What could the prison do to make the move towards becoming smoke-free easier for prisoners and staff members?

_____

_____

_____

_____

_____

_____

Thank you for completing the questionnaire

APPENDIX 7.17b Questionnaire for staff members post-policy

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Leah Jayes & Chris Hill

STAFF QUESTIONNAIRE

Please take a few minutes to answer these questions. We would like to gather your views on this prison going smoke-free. Leave any questions you do not want to answer blank. Do not put your name on the form.

We are holding focus groups with staff members between [insert dates] 2016 to collect your thoughts and attitudes on how this prison rolled out its smoke-free policy. They will last around 20 minutes, if you are interested in attending one of these sessions please contact the researcher (leah.jayes@nottingham.ac.uk) or our contacts at the prison [smoke-free champion/SPOC]. These sessions are run by researchers from the University of Nottingham and are completely confidential.

Put a cross in the box you feel expresses your view the best

SECTION 1

ALL PARTICIPANTS TO COMPLETE THIS SECTION

---

1. What is your sex?

[ ] Male
[ ] Female

2. What is your age?

_____years

3. How would you describe your ethnic group?

[ ] White – British
[ ] White – Irish
[ ] Other white background
[ ] Mixed - white and black Caribbean
[ ] Mixed - white and Asian
[ ] Other mixed background
[ ] Asian or Asian British – Indian
[ ] Asian or Asian British – Pakistani
[ ] Asian or Asian British – Bangladeshi
[ ] Other Asian background
[ ] Black or black British – Caribbean
[ ] Black or black British – African
[ ] Other black background
[ ] Chinese
[ ] Other. Please specify:_____

4. How would you best describe your job role?

[ ] Uniformed officer (including OSG grade)
[ ] Line Manager/Senior Officer
[ ] Senior Management Team
[ ] Support services (teacher, SMS team)
[ ] Administrative
[ ] Healthcare
[ ] Contractor
[ ] Other. Please specify: _____

5. How long have you been employed by the prison service (including other establishments)?

_____ years

6. In your role, do you have direct prisoner contact?

[ ] Yes (go to question 6a)
[ ] No (go to question 7)

6a.If 'yes', on average is this:

[ ] Up to 25% of your time
[ ] Between 26%-50% of your time
[ ] Between 51%-75% of your time
[ ] Over 76% of your time

7. Do you regularly use an e-cigarette?

[ ] Yes
[ ] No

8. Were you working at HMP [insert name] during the roll out of the smoke-free policy (insert date 2016)?

[ ] Yes (go to **Section 2**)
[ ] No (go to **Section 3**)

SECTION 2

ONLY COMPLETE IF YOU WERE WORKING AT HMP [insert name] DURING THE INTRODUCTION OF THE SMOKE-FREE POLICY (insert date 2016)

---

1. Do you feel enough notice and publicity was given to inform staff members that this prison was going smoke-free?

[ ] Yes
[ ] No
[ ] Unsure

2. Do you feel enough notice and publicity was given to inform prisoners that this prison was going smoke-free?

[ ] Yes
[ ] No
[ ] Unsure

3. Do you think the communication (notices to prisoners and staff, posters) gave enough information about the process of going smoke-free and outlined the stop smoking services available at the prison?

[ ] Yes
[ ] No
[ ] Unsure

4. Do you think tobacco smoking prisoners at HMP [insert name] were given enough help and support to stop smoking in the run up to going smoke–free?

[ ] Yes
[ ] No
[ ] Unsure

5. What is your current tobacco smoking status?

[ ] Smoker (go to **Question 6**)
[ ] Ex-Smoker – (Quit longer than 3 months ago - go to **Section 4**)
[ ] Non-Smoker (go to **Section 4**)

6. On average, how many cigarettes to you smoke per day?

_____per day

7. How long have you been a smoker for?

[ ] 0-5 years
[ ] 6-10 years
[ ] 11-20 years
[ ] 21-30 years
[ ] More than 30 years

8. How soon after waking do you smoke your first cigarette of the day?

[ ] Within 5 minutes
[ ] Between 6 and 30 minutes
[ ] Between 31 and 60 minutes
[ ] After 60 minutes

9. Would you like to stop smoking tobacco?

[ ] Yes
[ ] No
[ ] Unsure

10. Have you ever tried to give up tobacco smoking before?

[ ] Yes
[ ] No

11. Do you think staff members who smoke tobacco were given enough help and support in the move towards this prison going smoke–free?

[ ] Yes
[ ] No
[ ] Unsure

12. Did the new tobacco and smoke-free prison policy make you think about stopping smoking or trigger a quit attempt?

[ ] Yes
[ ] No

13. Do you think your smoking patterns have changed as a result of this prison going tobacco and smoke-free?

[ ] Yes
[ ] No
[ ] Unsure

14. Do you use an e-cigarette alongside smoking tobacco?

[ ] Yes
[ ] No

15. Do you use any form of Nicotine Replacement Therapy (NRT) whilst at work? (eg. Patches, lozenges, inhalator)

[ ] Yes
[ ] No

SECTION 3

ONLY COMPLETE IF YOU CAME TO WORK AT HMP [insert name] AFTER THE SMOKE-FREE POLICY WAS INTRODUCED (insert date 2016)

---

1. Before coming to work at HMP [insert name], did you know it was a smoke-free prison?

[ ] Yes
[ ] No

2. What is your current tobacco smoking status?

[ ] Smoker (go to **Question 3**)
[ ] Ex-Smoker - (Quit longer than 3 months ago - go to **Section 4**)
[ ] Non-Smoker (go to **Section 4**)

3. On average, how many cigarettes to you smoke per day?

_____per day

4. How long have you been a smoker for?

[ ] 0-5 years
[ ] 6-10 years
[ ] 11-20 years
[ ] 21-30 years
[ ] More than 30 years

5. How soon after waking do you smoke your first cigarette of the day?

[ ] Within 5 minutes
[ ] Between 6 and 30 minutes
[ ] Between 31 and 60 minutes
[ ] After 60 minutes

6. Would you like to stop smoking tobacco?

[ ] Yes
[ ] No
[ ] Unsure

7. Have you ever tried to give up tobacco smoking before?

[ ] Yes
[ ] No

8. Has the new tobacco and smoke-free prison policy made you think about stopping smoking or triggered a quit attempt?

[ ] Yes
[ ] No

9. Do you think your smoking patterns have changed as a result of working in a tobacco and smoke-free prison?

[ ] Yes
[ ] No
[ ] Unsure

10. Do you use an e-cigarette alongside smoking tobacco?

[ ] Yes
[ ] No

11. Do you use any form of Nicotine Replacement Therapy (NRT) whilst at work? (eg. Patches, lozenges, inhalator)

[ ] Yes
[ ] No

SECTION 4

ALL PARTICIPANTS TO COMPLETE THIS SECTION

---

1. In your current role, have you received any smoking cessation training?

[ ] Yes (go to **question 1a**)

[ ] No (go to **question 2**)

1a. Do you know what training you received? (eg. NCSCT, level 1)

_____

2. In your current role, how much has the smoke-free policy impacted on you day-to-day work load?

[ ] Very much

[ ] A little

[ ] Not at all

3. Are you aware that prisoners have been smoking tobacco in this prison since it went tobacco smoke-free on [insert date] 2016?

[ ] Yes

[ ] No

4. Do you think there is enough support available at HMP [insert name] for prisoners to remain smoke-free until release or transfer?

[ ] Yes

[ ] No

[ ] Unsure

5. Do you think there has been an increase in prisoner incidents (e.g aggression, self-harm) due to this prison going smoke-free?

[ ] Yes

[ ] No

[ ] Unsure

6. Do you think there has been an increase in prisoner drug use due to this prison going smoke-free?

[ ] Yes

[ ] No

[ ] Unsure

7. Do you feel exposed to higher, the same, or lower levels of second-hand smoke at work since the introduction of the smoke-free policy?

[ ] More second-hand smoke
[ ] The same
[ ] Less second-hand smoke

8. Do you think the smoke-free policy has improved your working environment?

[ ] Yes
[ ] No
[ ] Unsure

9. Do you feel going smoke-free at this prison has had any impact on your physical health?

My health has got:

[ ] Better
[ ] The same
[ ] Worse

10. Do you think other prisons throughout England should roll out a smoke-free policy in the future?

[ ] Yes
[ ] No
[ ] Unsure

11. Can you write down any positive outcomes of this prison now being smoke-free?

_____

_____

_____

12. Can you write down any negative outcomes of this prison now being smoke-free?

_____

_____

_____

Thank you for completing the questionnaire

APPENDIX 7.18 Focus group guides for prisoners pre- and post- policy

Title of Project: Tobacco and smoke free prisons: an evaluation of early adopter sites in England & Wales

Name of Researcher: Leah Jayes

Prisoner Focus Group Guides

Aims and Objectives

1. How the use of tobacco affects prisoners' day to day life.

2. Explore how well prisoners were informed and kept abreast of the information relating to the introduction of the smoke free policy.

3. Explore what prisoners think about the introduction of a smoke free policy.
- *What it will mean for them*
- *Have attitudes changed over time.*

4. Allow prisoners to evaluate how the prison brought in the smoke free policy and how it has been enforced
- *How prisoners could improve this in future.*

Introduction

- Explain the purpose of the focus group in general.
- We would like to hear your honest views and opinions about the prison going tobacco and smoke free
- We want to hear about what you have been told about the policy, what you think of it and how the prison can help in making the move go as smoothly as possible.
- Whilst we would like to hear your honest views and opinions, at the same time we want you to feel comfortable, so please do not feel that you have to say anything if you don't want to.
- Statement on confidentiality, right to withdraw consent, voice recording of the focus group.

We would like to reassure you that any personal information you provide will be kept strictly confidential by the research team. The voice recording of this focus group and any quotes that we might use in project reports will not identify you in any way. It is OK for you to stop taking part at any time without giving a reason. However, anything you have said up to this point will still be used.

- Ask if participants have any questions before starting the focus group.
- Check prisoners are still happy to take part and that consent form has been signed.

Focus Group Guide: Three Months Before Implementation of Policy

Smoking in the Prison

1. Do you think smoking is a problem in this prison?
- Probe about both prisoners and staff.
- Do you ever hear staff members referring to their own smoking habit/ talk to prisoners about their smoking behaviour?
- have prisoners ever witnessed staff members smoking at the prison?

2. Do you have any rough ideas about how many prisoners smoke in this prison?
- are there situations where smokers share a cell with a non-smoker?

3. Are there certain areas/places within the prison where you are exposed to higher levels of passive smoke (smoke from others cigarettes)
-(probe around how they feel about the high areas)

4. Are there times/situations where prisoner smoke more or less?
- if more, when – give examples (stress/boredom/bad news)
- if less, when – give examples (out at work in the daytime/less money for tobacco)

5. Can you tell me about the culture of smoking within this prison?
- do prisoners use it as a means of currency?
- does tobacco have any impact on relationships between prisoners and staff members
- (bullying, fights, staff using it as a way of punishment/reward).

6. What help has been available for smokers wishing to quit?

Information Received About the Tobacco and Smoke Free Policy.

7. What do you know about the prison going tobacco and smoke free?
- who told you?
- when were you told about the new policy?
- has the information you have received about the new policy been clear? – Probe if not, how would you suggest prisoners are told about the policy introduction in future, with examples?

8. Have those prisoners who smoke been offered any help to stop smoking before the policy is introduced, if so
- What help is available and how would you/they get it - NRT, behavioural support?

9. Do you know who your Smoke Free Champion is?
- do you know what their job role is?
- do you feel this person is well placed to answer your questions about the policy?

Impact of the Tobacco and Smoke Free Policy
We are interested to hear about what you think to the tobacco and smoke free policy and how it will impact on your day-to-day lives - whether you are a smoker or non smoker.

10. How do you feel about this prison going tobacco and smoke free?
- what were your initial thoughts on hearing then news?
- have your thoughts changed since you first heard the news?

11. Can you think of any positive/good outcomes from the new policy? (physically/socially/culturally/financially)
- improved health/more money to spend on other items on the canteen – telephone calls/less arguments over tobacco.

12. Can you think of any negative/bad outcomes from the new policy? (physically/socially/culturally/financially)
- Prisoners loss of a coping mechanism/turn to harder drugs/increase in flights/tobacco being smuggled in.

13. What do you think the staff members think about the tobacco and smoke free prison?
- Have any of you spoken to staff about the policy?
- Are staff members positive or negative about the policy/do they think it's a good thing?

Going Tobacco and Smoke free

14. What do you think is the best way for the prison to initially (the couple of days before and couple of days after) enforce the smoke free policy?
- Take prisoners tobacco away/ let prisoners use up their remaining tobacco/have prisoners hand over all of their tobacco.

15. Can you think of anything the prison can do to make the move to a smoke free prison easier for prisoners?
- Organise activities to keep prisoners occupied/mind off not being able to smoke?
- Have a prisoner point of contact to go to for help?

16. For those who smoke, what is your plan for going smoke free?
- For example, will they seek help from the prison (behavioural/NRT), try and quit alone, not try to quit and see how they get on, still try and smoke once policy is introduced.
- Probe around how they feel about the personal impact on them, particularly if smokers e.g. are they stressed/worried/confidence in ability to quit.

Closing questions/remarks

- Is there anything that we haven't talked about that you want to add about your feelings regarding this prison going smoke free or perhaps smoking in prison in general?
- Any questions?
- Thank participant for their time.

Focus Group Guide: Three Months After Implementation of Policy

(this guide will be subject to change depending on the outcomes/themes gathered from the focus groups three months before the policy is enforced. If there are any significant changes to this guide, the Ethics Committee will be consulted).

Smoking in the Prison

1. Do you think smoking is a problem in this prison?
Probe about both prisoners and staff.

2. Do you have any rough ideas about how many prisoners smoke in this prison?

3. Is tobacco still being used in the prison since the smoke free policy was introduced?
- Do you feel this is a happening regularly/rarely?
- Are staff members aware tobacco is still being used in the prison?
- Is tobacco use causing conflict between prisoners?

4. What is the prison doing to ensure the tobacco ban is being followed?
- How are they punishing those in possession of tobacco?
- How do staff members police the smoking policy? Probe around how effective efforts are.

Information Received About the Tobacco and Smoke Free Policy.
I understand not all of you have been at this prison during the time it has become tobacco and smoke free. However, for those who have, we are going to ask you to think about the information you received before the policy and whether this information you received matched what you have since experienced.

5. What information did you receive/see about the prison going tobacco and smoke free?

6. What did you think of this information?
-How clearly did the information explain how the prison was going to tobacco and smoke free? Probe whether policy was implemented and enforced as outlined
- Timing of information
- Format, could it be improved/done differently

7. How important was the Smoke Free Champion, in relation to providing support about the policy?
- has anyone approached them for help?

Impact of the Tobacco and Smoke Free Policy
We are interested to hear about what you now think to the tobacco and smoke free policy and how it has impacted on your day to day life- whether you are a smoker or non-smoker.

8. What do you now think about the introduction of tobacco and smoke free prisons?
- Have your views changed over the introduction of the policy – from three months before the policy to three months after the policy?

- Do you think all prisons in England and Wales should move towards becoming tobacco and smoke free? if not, why not.
- Can you think of any reasons/situations why some prisons should not become smoke free?

9. What have been the positive/good things to come out of the prison going tobacco and smoke free? (physically/socially/culturally/financially)
- improved health/more money to spend on other items on the canteen – telephone calls/less arguments over tobacco.

10. What have been the negative/bad things to come out of the prison going tobacco and smoke free? (physically/socially/culturally/financially)
- prisoners loss of a coping mechanism/turn to harder drugs/increase in flights/tobacco being smuggled in.

11. During the transition to smoke free, do you feel staff members have been generally positive or negative about the move?
- Has staff attitudes had any impact on how you feel about the policy?
- Has there been any sense of 'we are all in this together' over the time the policy was introduced.

Going Tobacco and Smoke free
Again, some of you may not have been in this prison when the prison went tobacco and smoke free, however your views on ideas for the future will be useful to us.

12. What do you think to the way the prison initially (the couple of days before and couple of days after) went smoke free?
- Explain what happened the few days before and after the policy came into force.
- Do you think this was a good way to introduce the policy, any suggestions for other prisons going smoke free in the future?

13. What were the experiences of those who sought help from the prison to stop smoking?
- How easily did you access help, were there waiting lists?
- What help did you receive (behavioural/NRT)?
- How easy was it to get NRT prescribed to you?

14. Can you think of anything the prison could have done to make the move to a smoke free prison easier for prisoners?
- Organise activities to keep prisoners occupied/mind off not being able to smoke?
- Have a prisoner point of contact to go to for help?

15. Do you think the tobacco and smoke free policy has made the prison a better place to live?
- Would the fact that a prison is smoke free affect your views/requests about going to that prison in the future?

Closing questions/remarks

- Is there anything that we haven't talked about that you want to add about your feelings regarding this prison going smoke free or perhaps smoking in prison in general?
- Any questions? Thank participant for their time.

APPENDIX 7.19 Focus group guides for staff members pre- and post- policy

Title of Project: Tobacco and smoke free prisons: an evaluation of early adopter sites in England & Wales

Name of Researcher: Leah Jayes

Staff Member Focus Group Guides

Aims and Objectives

1. The use of tobacco amongst staff members and prisoner.

2. Explore how well staff members were informed and kept abreast of the information relating to the introduction of the smoke free policy.

3. Explore what staff members think about the introduction of a smoke free policy?
- *What it will mean for them*
- *Have attitudes changed over time.*

4. Allow staff members to evaluate how the prison brought in the smoke free policy and how it has been enforced
- *Suggestions on how this could be improved in the future.*

Introduction

- Explain the purpose of the focus group in general.
- We would like to hear your honest views and opinions about the prison going tobacco and smoke free
- We want to hear about what you have been told about the policy, what you think of the policy and how the prison can help in making the move go as smoothly as possible.
- Whilst we would like to hear your honest views and opinions, at the same time we want you to feel comfortable, so please do not feel that you have to say anything if you don't want to.
- Statement on confidentiality, right to withdraw consent, voice recording of the focus group.

We would like to reassure you that any personal information you provide will be kept strictly confidential by the research team. The voice recording of this focus group and any quotes that we might use in project reports will not identify you in any way. It is OK for you to stop taking part at any time without giving a reason. However, anything you have said up to this point will still be used.

- Ask if participants have any questions before starting the focus group.
- Check staff members are still happy to take part and that consent form has been signed.

Focus Group Guide: Three Months Before Implementation of Policy

Smoking in the Prison

1. Do you think smoking is a problem in this prison?
- Probe about both prisoners and staff members.

2. How many staff would you estimate smoke in this prison?

3. What is the current practice for those who want to smoke here at the prison?
- Where can you/they smoke?

4. For those who are current smokers or recent ex-smokers, can you describe how your job impacts your smoking behaviour?
- Do the shifts/hours you work affect your smoking patterns?
- Do you feel you smoke more/less whilst working?

5. Are there situations where work matters impact on your level of tobacco use?
– Probe e.g. does stress at work lead to increased tobacco use?

6. Do you think smoking plays a part in the culture of this prison amongst staff members and prisoners?
- Is it a social norm amongst staff members?
- Do prisoners use it as a means of currency?
- Does tobacco have any impact on relationships between prisoners and staff members – examples if possible.

7. How many of you have daily contact with prisoners e.g. work on the landings/wings? How often are you exposed to prisoners' passive smoke?
- When are you most likely to be exposed to passive smoke from prisoners?
- Are there certain times of the day when you are exposure to more/less passive smoke in the prison?
- Have you ever felt passive smoke has had an impact on your physical health? / how do you feel about this SHS exposure? So the general question that I have suggested in comment 4.

Information Received About the Tobacco and Smoke Free Policy

8. What do you know about the prison going tobacco and smoke free?
- who told you?
- when were you told about the new policy?
- has the information you have received about the new policy been clear? – Probe if not, how would you suggest prisoners are told about the policy introduction in future, with examples?

9. Have those staff members who smoke been offered any help to stop smoking before the policy is introduced, if so

- What help is available and how would you get it – NRT, behavioural support?

10. Do you know who your Smoke Free Champion is?
- do you know what their job role is?
- do you feel this person is well placed to answer your questions about the policy?

11. How confident would you feel about dealing with prisoners that are withdrawing from tobacco?
- do you think it would be useful for staff to receive some basic training about the effects of smoking, withdrawal and benefits?

12. How confident do you feel about enforcing the new policy?

Impact of the Tobacco and Smoke Free Policy
We are interested to hear about what you think about the tobacco and smoke free policy and how it will impact on the day to day running of the prison.

13. How do you feel about this prison going tobacco and smoke free?
- what were your initial thoughts on hearing the news?
- have your thoughts changed since you first heard the news?

14. Can you tell me if you think there will be any positive/good outcomes from the new policy? (physically/socially/culturally/financially)
- improved health/ greater staff productivity/less problems to deal with relating to tobacco use of prisoners?

15. Can you tell me if you think there will be any negative/bad outcomes from the new policy? (physically/socially/culturally/financially)
- More staff member time spent enforcing the ban/ more prisoner incidents over tobacco/issues around prisoner withdrawal of tobacco – e.g highly agitated.

16. What impression (good or bad) do you get from prisoners about the tobacco and smoke free prison?
- Has anyone spoken to prisoners about the policy?

Going Tobacco and Smoke free

17. How do you think the prison can introduce the smoke free policy effectively?

18. How do you think the prison can enforce the smoke free policy?
- Take prisoners' tobacco away/ let prisoners use up their remaining tobacco/have prisoners hand over all of their tobacco.

19. Can you think of anything the prison can do to make the move to a smoke free prison easier for prisoners?
- Organise activities to keep prisoners occupied/mind off not being able to smoke?
- Have a prisoner point of contact to go to for help?

.20. For those here who smoke, what are your plans for when the prison goes smoke free?
- For example, will they seek help from the prison (behavioural/NRT), try and quit alone, not try to quit, smoke once policy is introduced.
- If not, how will you go about not smoking during work hours – will you be using any NRT?

Closing questions/remarks

- Is there anything that we haven't talked about that you want to add about your feelings regarding this prison going smoke free or perhaps smoking in prison in general?
- Any questions?
- Thank participant for their time.

<u>Focus Group Guide: Three Months After Implementation of Policy</u>

(this guide will be subject to change depending on the outcomes/themes gathered from the focus groups three months before the policy is enforced. If there are any significant changes to this guide, the revised guide will be submitted to the Ethics Committee).

Smoking in the Prison

1.Do you think smoking is a problem in this prison?
- Probe about both prisoners and staff.

2. Are you aware of tobacco still being used in the prison since the smoke free policy was introduced?
- Do you feel this is a happening regularly/rarely?
- Is tobacco use causing conflict between prisoners?
- have there been any occasions where prisoners have attempted to smuggle tobacco into the prison.

3. What is the prison doing to ensure the tobacco ban is being followed?
- What tactics is the prison using to catch those still in possession of tobacco?
- How are they punishing those in possession of tobacco? Probe around how effective efforts are.

Information Received About the Tobacco and Smoke Free Policy.
We are going to ask you to think about the information you received before the policy and whether this information you received matched what you have since experienced.

4. What information did you receive/see about the prison going tobacco and smoke free?

5. What did you think of this information?
-How clearly did the information explain how the prison was going to tobacco and smoke free? Probe whether policy was implemented and enforced as outlined
- Timing of information
- Format, could it be improved/done differently

6. How important was the Smoke Free Champion, in relation to providing support about the policy?
- has anyone approached them for help?

Impact of the Tobacco and Smoke Free Policy
We are interested to hear about what you now think to the tobacco and smoke free policy and how it has impacted on the day to day life.

7. What do you now think about the introduction of tobacco and smoke free prisons?
- Have your views changed over the introduction of the policy – from three months before the policy to three months after the policy?
- Do you think all prisons in England and Wales should move towards becoming tobacco and smoke free? if not, why not.
- Can you think of any reasons/situations why some prisons should not become smoke free?

8. What have been the positive/good things to come out of the prison going tobacco and smoke free? (physically/socially/culturally/financially)
- improved health of staff members/ less arguments over tobacco.

9. What have been the negative/bad things to come out of the prison going tobacco and smoke free? (physically/socially/culturally/financially)
- more work for staff enforcing the ban/prisoners harder to control/prisoners turning to harder drugs/increase in flights/tobacco being smuggled in.

10. During the transition to a smoke free, do the feel the prisoners have been generally positive or negative about the move?
- Has there been any sense of 'we are all in this together' amongst staff and prisoners over the time the policy was introduced.

Going Tobacco and Smoke free

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11. What do you think to the way the prison initially (the couple of days before and couple of days after) went smoke free?
- Explain what happened the few days before and after the policy came into force.
- Do you think this was a good way to introduce the policy, any suggestions for other prisons going smoke free in the future?

12. Did you encounter any difficulties, in terms of supporting prisoners withdrawing from tobacco?
- were you able to support them?
- did you feel you were trained to do so?
- if not, what could be done in future to prepare staff members?

13. For those of you who are smokers, how has the ban impacted on your smoking behaviour?
- Quit/cut down/smoked more
- Smoking around work time? Use of NRT?

14. Did anyone who smoked before the ban access help to cut down or quit during the introduction on the policy?
- If so where from?
- What help did you receive (behavioural/NRT)?
- How easy was it to get NRT prescribed to you?

15. Can you think of anything the prison could have done to make the move to a smoke free prison easier for staff members?
- Systems for offering stop smoking help?

16. Can you think of anything the prison could have done to make the move to a smoke free prison easier for prisoners?
- Organise activities to keep prisoners occupied/mind off not being able to smoke?
- Have a prisoner point of contact to go to for help?

17. Do you think the tobacco and smoke free policy has made the prison a better place to work?
- Would the fact that a prison is smoke free influence whether you worked there in the future?

Closing questions/remarks

- Is there anything that we haven't talked about that you want to add about your feelings regarding this prison going smoke free or perhaps smoking in prison in general?
- Any questions?
- Thank participant for their time.

APPENDIX 7.20a Information sheet for prisoners pre-policy

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Leah Jayes & Chris Hill

VOLUNTEER INFORMATION SHEET

Researcher to talk through points listed below with participants.

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of the researchers will go through all the information below at the start of your group session. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part or not.

☐ **Background**
This prison has been chosen to be one of the first prisons in England and Wales to go tobacco and smoke free.

☐ **What is the purpose of the study?**
We want to ask you about how you feel and what you think about this prison going tobacco and smoke free. By telling us this information we hope to make the move to a smoke free environment easier for all those who live and work here. We will be back 3 months after the policy has been introduced to re-assess your feelings about the tobacco and smoke free policy at this prison.

☐ **Why have I been invited?**
We have tried to ask as many prisoners at HMP [insert prison] to take part in the project by visiting prisoners in workshops, education and association times. Prisoners from all living accommodations in the prison will be invited to take part.

☐ **Do I have to take part?**
You are not have to take part, however by coming along to this session we hope you will stay and give us your views. The more people we get to take part the better we can understand and help in making this prison tobacco and smoke free.

☐ **What will happen if I take part and what will I have to do?**
By volunteering to take part you will be asked to complete a questionnaire which will take around 15 minutes. We will then have a 30 minute discussion about the prison going tobacco and smoke free, it's up to you whether you would like to say anything in the discussion.

☐ **What if I have trouble reading/English is not my first language?**
The researchers are here to help anyone who needs help to complete the questionnaire and answer any questions about anything you are unsure about.

☐ **Can I complete the questionnaire with my friend?**
We do ask that you fill out the questionnaire on your own; we would like to know how you feel about the prison going tobacco and smoke free. In order to do this we ask if you can keep the noise down so that everyone can concentrate on their own questionnaire. There will be a chance for a discussion at the end. If you finish before everyone else, please be patient and keep quiet and let others finish.

☐ **Will I still get my wages paid?**
Yes. You will not lose any wages for taking part. You will not get paid any extra for taking part in the study.

☐ **What if I decide I no longer want to take part in the study?**
If you decide you do not want to take part in the study please say as soon as possible in the session.

☐ **Will information collected remain anonymous and confidential?**
All information collected in this session will remain anonymous and confidential. The aim of this study is to collect information about your thoughts as a group and not individual information. However, if you write down or talk about behaviour that is against prison rules, is an illegal acts, or behaviour that is potentially harmful to yourself (e.g self-harm) or someone else this will be reported to the security department.

☐ **What will happen to the results of the research study?**
In the future all prisons in England and Wales will go tobacco and smoke free, we hope that the information you provide here will help us make this change easier for prisoners in the future.

☐ **What if something goes wrong?**
If you have any concerns about any aspect of the project, you should ask to speak to the researchers who will do their best to answer your questions. If you wish to speak to someone at the prison after the session about any distress or anxieties caused please contact [name of Smoke-free Champion/SPOC].
If you are not satisfied with the outcome then you can get in touch with the Chairperson of the University of Nottingham Ethics Committee which has approved this project. Please contact the Ethics Committee Secretary, at the following address:

Division of Therapeutics and Molecular Medicine
D Floor, South Block
Queen's Medical Centre
Nottingham
NG7 2UH

If you have any requests for information, complaints or queries about the research please forward these to the prison directly.

☐ **Who is organising and funding the research?**
This research is funded The UK Centre for Tobacco and Alcohol Studies.

☐ **Who has reviewed the study?**

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee. All research in The National Offender Management Service (NOMS) goes through an application process which involves consultation with the area psychologist, who has agreed to this study.

☐ **I would like to take part, what shall I do next?**
If you tell one of the researchers you would like to take part they will advise you when to come along to a group. If not, fill in the form below and post it into your applications box on the wing/unit. A member of the research team will then come and see you to arrange a session for you to attend.

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Chris Hill & Leah Jayes

☐ **I would like to take part, what shall I do next?**

If you would like to take part in the research please complete the following information and drop this sheet into your applications box on the wing/unit. A researcher will then come and see you.

Name :……

Wing Name & Cell Number :……

Thank you for reading this information sheet and considering participation in our research!

APPENDIX 7.20b Information sheet for prisoners post-policy

Title of Project: Smoke Free Prisons

Name of Researchers: Leah Jayes & Chris Hill

VOLUNTEER INFORMATION SHEET

Researcher to talk through points listed below with participants.

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of the researchers will go through all the information below at the start of your group session. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part or not.

☐ **Background**
This prison went smoke-free on [insert date] 2016. We collected data at this prison 3 months before it become smoke free and we are now back 3 months after the policy to see how you feel it went.

☐ **What is the purpose of the study?**
We want to ask you about your experience and how you felt this prison handled going smoke-free. By telling us this information we hope to learn and improve the process for other prisons going smoke-free in the future.

☐ **Why have I been invited?**
We have tried to ask all prisoners at HMP [insert prison] to take part in the project by visiting prisoners in workshops, education and association times. Prisoners from all living accommodations in the prison will be invited to take part.

☐ **Do I have to take part?**
You do not have to take part, however by coming along to this session we hope you will stay and give us your views. The more people we get to take part the better we can understand and help other prisons go smoke-free successfully.

☐ **What will happen if I take part and what will I have to do?**
By volunteering to take part you will be asked to complete a questionnaire which will take around 15 minutes. We will then have a 15-20 minute discussion about the prison going smoke-free; it's up to you whether you would like to say anything in the discussion.

☐ **What if I have trouble reading/English is not my first language?**
The researchers are here to help anyone who needs help to complete the questionnaire and answer any questions about anything you are unsure about.

☐ **Can I complete the questionnaire with my friend?**
We do ask that you fill out the questionnaire on your own; we would like to know how you feel about the prison going tobacco and smoke free. In order to do this we ask if you can keep the noise down so that everyone can concentrate on their own questionnaire. There will be a chance for a discussion at the end. If you finish before everyone else, please be patient and keep quiet and let others finish.

☐ **Will I still get paid my wages?**
Yes. You will not lose wages for taking part. You will not get paid any extra for taking part in the study.

☐ **What if I decide I no longer want to take part in the study?**
If you decide you do not want to take part in the study please say as soon as possible in the session.

☐ **Will information collected remain anonymous and confidential?**
All information collected in this session will remain anonymous and confidential. The aim of this study is to collect information about your thoughts as a group and not individual information. However, if you write down or talk about behaviour that is against prison rules, is an illegal acts, or behaviour that is potentially harmful to yourself (e.g self-harm) or someone else this will be reported to the security department.

☐ **What will happen to the results of the research study?**
In the future all prisons in England will look to go smoke-free, we hope that the information you provide here will help us make this change easier for all prisoners in the future.

☐ **What if something goes wrong?**
If you have any concerns about any aspect of the project, you should ask to speak to the researchers who will do their best to answer your questions. If you wish to speak to someone at the prison after the session about any distress or anxieties caused please contact your smoke-free point of contact at the prison [name of Smoke-free Champion/SPOC].
If you are not satisfied with the outcome then you can get in touch with the Chairperson of the University of Nottingham Ethics Committee which has approved this project. Please contact the Ethics Committee Secretary, at the following address:

Division of Therapeutics and Molecular Medicine
D Floor, South Block
Queen's Medical Centre
Nottingham
NG7 2UH

If you have any requests for information, complaints or queries about the research please forward these to the prison directly.

☐ **Who is organising and funding the research?**
This research is funded The UK Centre for Tobacco and Alcohol Studies.

☐ **Who has reviewed the study?**

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee. All research in The National Offender Management Service (NOMS) goes through an application process which involves consultation with the area psychologist, who has agreed to this study.

☐ **I would like to take part, what shall I do next?**
Please fill in the form on the next page and post it into your applications box on the wing/unit. A member of the research team will then come and see you to arrange a session for you to attend.

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Leah Jayes & Chris Hill

☐ **I would like to take part, what shall I do next?**

If you would like to take part in the research please complete the following information and drop this sheet into your applications box on the wing/unit. A research will then come and see you.

Name :……

Wing Name & Cell Number :……

Thank you for reading this information sheet and considering participation in our research!

****If lost please return to one of the researchers named above or your Smoke Free point of contact [name of Smoke-free Champion/SPOC]**

APPENDIX 7.21a Information sheet for staff members pre-policy

Title of Project: Tobacco and Smoke-Free Prisons

Name of Researchers: Leah Jayes & Chris Hill

STAFF INFORMATION SHEET

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you.

☐ **Background**
This prison has been chosen to be one of the first prisons in England and Wales to go tobacco and smoke free.

☐ **What is the purpose of the study?**
We want to ask you about how you feel and what you think about this prison going tobacco and smoke-free. By telling us this information we hope to make the move to a smoke free environment easier for all those who live and work here. We will be back 3 months after the policy to re-assess your thoughts and feelings about this prison going tobacco and smoke-free.

☐ **Why have I been invited?**
All staff of all grades working at the prison has been invited to take part in filling in this questionnaire. If you are interested in taking part in a focus group to discuss your views further please either email the following researcher (leah.jayes@nottingham.ac.uk) or give your name our contact this week (insert name of smoke-free champion/SPOC).

☐ **Do I have to take part?**
There will be no advantage or disadvantage as a result of your decision to participate or not in the research. There is no obligation to take part in the study, however the more people we get to take part the better we can understand and help in the switch to a tobacco and smoke free environment.

☐ **What will happen if I take part and what will I have to do?**
By volunteering to take part today you will be asked to complete a questionnaire which will take around 15 minutes. If you volunteer to take part in one of the focus groups this will last no longer than 30 minutes.

☐ **I don't have time to fill in the questionnaire?**
It has been agreed that this prison will be an early adopter of the tobacco and smoke-free policy. As your prison is one of the first to go tobacco and smoke-free the information you give us about this change in policy is invaluable. It will go towards

informing all other prisons in England and Wales on how best to make the smoke-free changes.

☐ **What if I do not want to answer one of the questions or I decide I no longer want to take part in the study?**
If there is an individual question you do not wish to answer, leave it blank. If you decide you do not want to take part in the study please do not fill in the questionnaire or submit it. Your decision to do this will not compromise you in any way.

☐ **Will information collected remain anonymous and confidential?**
All information collected will remain anonymous and confidential. The aim of this study is to collect information about your thoughts as a group and not individual information. The data you provide will be securely archived within the University of Nottingham for 7 years after it has been collected.

☐ **What will happen to the results of the research study?**
The study team will publish the results of the study as widely as possible. You will not be identified in any report or publication.

☐ **What if something goes wrong?**
If you have any concerns about any aspect of the project, you should ask to speak to the researchers who will do their best to answer your questions. If you wish to speak to someone at the prison after the session please contact (insert name of smoke-free champion/SPOC).
If you are not satisfied with the outcome then you can get in touch with the Chairperson of the University of Nottingham Ethics Committee which has approved this project. Please contact the Ethics Committee Secretary, Mrs Louise Sabir at the following address:

Division of Therapeutics and Molecular Medicine
D Floor, South Block
Queen's Medical Centre
Nottingham
NG7 2UH

☐ **Who is organising and funding the research?**
This research is funded The UK Centre for Tobacco and Alcohol Studies.

☐ **Who has reviewed the study?**

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee. All research in The National Offender Management Service (NOMS) goes through an application process which involves consultation with the area psychologist, who has agreed to this study.

Thank you for reading this information sheet and considering participation in our research!

APPENDIX 7.21b Information sheet for staff members post-policy

Title of Project: Tobacco and Smoke Free Prisons

Name of Researchers: Leah Jayes & Chris Hill

STAFF INFORMATION SHEET

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you.

☐ **Background**
This prison went smoke-free on [insert date] 2016. We collected data at this prison 3 months before it became smoke-free and we are now back 3 months after the policy to see how you feel it went.

☐ **What is the purpose of the study?**
We want to ask you about your experience and how you felt this prison handled going smoke-free. By telling us this information we hope to learn and improve the process for other prisons going smoke-free in the future.

☐ **Why have I been invited?**
All staff of all grades working at the prison has been invited to take part in filling in this questionnaire. If you are interested in taking part in a focus group to discuss your views further please let one of the researchers know (leah.jayes@nottingham.ac.uk) or your smoke-free point of contact (insert name of smoke-free champion/SPOC).

☐ **Do I have to take part?**
There will be no advantage or disadvantage as a result of your decision to participate or not in the research. There is no obligation to take part in the study, however the more people we get to take part the better we can understand and help in the move to a smoke-free prison estate.

☐ **What will happen if I take part and what will I have to do?**
By volunteering to take part you will be asked to complete a questionnaire which will take around 15 minutes. If you volunteer to take part in one of the focus groups this will last no longer than 20 minutes.

☐ **I don't have time to fill in the questionnaire?**

As your prison was one of the first to go smoke-free the information you give us about this change in policy is invaluable. It will go towards informing all other prisons in England on how best to make the smoke-free changes in the future.

☐ **What if I decide I no longer want to take part in the study?**
If you decide you do not want to take part in the study please do not fill in the questionnaire.

☐ **Will information collected remain anonymous and confidential?**
All information collected will remain anonymous and confidential. The aim of this study is to collect information about your thoughts as a group and not individual information. The data you provide will be securely archived within the University of Nottingham for 7 years after it has been collected.

☐ **What will happen to the results of the research study?**
The study team will publish the results of the study as widely as possible. You will not be identified in any report or publication.

☐ **What if something goes wrong?**
If you have any concerns about any aspect of the project, you should ask to speak to the researchers who will do their best to answer your questions. If you wish to speak to someone at the prison after the session please contact your smoke-free point of contact [insert name of smoke-free champion/SPOC].

If you are not satisfied with the outcome then you can get in touch with the Chairperson of the University of Nottingham Ethics Committee which has approved this project. Please contact the Ethics Committee Secretary, Mrs Louise Sabir at the following address:

Division of Therapeutics and Molecular Medicine
D Floor, South Block
Queen's Medical Centre
Nottingham
NG7 2UH

☐ **Who is organising and funding the research?**
This research is funded The UK Centre for Tobacco and Alcohol Studies.

☐ **Who has reviewed the study?**

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee. All research in The National Offender Management Service (NOMS) goes through an application process which involves consultation with the area psychologist, who has agreed to this study.

Thank you for reading this information sheet and considering participation in our research!

APPENDIX 7.22 Framework for prisoner and staff member focus groups, pre- and post- policy

Evaluation of smoke-free prisons

Framework Approach

Qualitative data. Focus group discussions with prisoners and staff pre-and post-smoke free policy.

Preliminary codes deriving from the 33 transcripts from prisoner and staff member (16 pre- and 17 post- smoke-free) outlined five board themes: views on the smoke-free policy and implementation, the role and importance of tobacco in prisoners lives, Potential and actual outcomes of going smoke-free (subthemes – disorder, drug use, trading and smoking other), stopping smoking: cessation, NRT, e-cigs, and changes in prison environment and health due to smoke-free

(P) Prisoners (S) Staff (B) Before Smoke-free (A) After Smoke-free

Smoke-free policy and implementation

- Breach of human rights/freewill (cell there home/not illegal in the community) (P) (S?) (B&A)
- Disbelieve that the SF policy would be rolled out (cancelled before date like in other establishments) (P&S) (B) (due to fights/violence – link to disturbances)
- Unsure of reasoning/justification of SF policy (few mentioned reasons protection from second-hand smoke, reduction in litigation and improved health) (P&S) (B&A)
- Suggestion for this to be addressed with wider estate roll out – education, leaflet.
- Good communication of the SF policy prior to roll out generally (P&S) (B)
  - However examples of tobacco removal data mix up at HMP Dartmoor – need to be clear on dates (P) (A)

  - Reception issues – people coming to Cat C trainings not being told the prison is now smoke-free and being moved out again (S) (A)

- Acceptance of non-smokers rights
- Lack of planning and finances to support it (insufficient)
- Ideas around making future roll out easier (P&S) (B&A)
- a slower, staged approach where over time, wing by wing, the prison would go smoke-free to allow certain prisoners (those highly addicted or with self-harm and mental health issues) had a longer time to adjust to smoke-free.

Role and importance of tobacco in prisoners lives

- High levels of addiction – prisoners smoked from young age, big part of life, routine, coping mechanism for stress. Therefore felt it would be impossible to stop smoking (P) (B&A)

- Poor mood and stressed prisoners post- policy as coping mechanism taken away (P&S) (A)
- Mixed responses relating to smoking post- release or transfer to smoking prison (P) (A)

Potential and actual outcomes of going smoke-free

- **Disorder**
- Fear of increase violence, fights, aggression, assaults on staff members, breakdowns of relationships (P&S) (B)
- Sf roll out happened with little disruption and little fuss (S) (A)
- Small pockets of trouble – HMP Erlestoke closed 2 wings. Hard to attribute issues – disturbance and spice use to SF (P&S) (A)
- Potential issues and problem highlighted with the roll out of SF in other prisons (namely A cat and inner city). Felt the pilot sites were 'soft' and chosen because of that. Prisoners have less to loose. (P) (B&A)

- **Drug use, trading, smoking other substances**
- Now tobacco removed, and has led to tobacco being 'driven underground' and creating a black market where tobacco and NRT patches are traded amongst prisoners. (P&S) (B&A)
- Level of addiction (see stress and level of addiction) and the demand for tobacco post-policy, illicit tobacco was now being sold for highly inflated prices amongst prisoners, many mentioned £50-£150 for a 25 gram pouch of loose tobacco. (P) (A)
- Increase in drug and alcohol use, smuggled drugs and tobacco and in turn trading and bullying for these items. – hard to prove these had come with SF (P&S) (B&A)
- Debt
- Prisoners turning to alternatives to smoke – teabags, lawn grass, content of NRT patches. Also increase in drug use (P&S) (A) (See contraband trading of patches and increased drug use)

Stopping smoking:

- **Cessation services, NRT usage**
- Waiting lists for the smoking cessation course (including free NRT and behavioural support) available through healthcare were too long (P) (B&A)
- Prisoners leaving it too late (near SF date) to access course as disbelief over policy coming in (see policy)
- SC course good once on it (P) (A)
- Issues over length of NRT available, prisoners felt 10 weeks of NRT was not long enough and needed continued NRT after this date (lozenges) and they had to buy these off the canteen themselves (P) (A) – was too expensive.
- Staff spoke about issues around funding and supply of NRT, alongside having enough CO monitors and staff to run the cessation courses. Staff in healthcare said at times, other services they provided were reduced in order to cope with the amount of prisoners requesting cessation support. (S) (B&A)
- Staff members report intimidation towards healthcare staff had increased with the large demand for NRT patches; staff acknowledged this was due to their high level of stress and addiction and that patches were now being traded as currency on the living units. (S) (A)

- **E-Cigarettes supplied**

- E-cigs not good, fit for purpose, poor quality, often needed returning to canteen. (S&P) (B&A)
- Equivalent amount of e-cig they would have to buy to match tobacco addiction too expensive. (B&A) (P)
- Only good example of e-cig was the 'e-burn' only piloted and not on canteen sheet. (B&A) (P)
- . Ideas around having better quality (similar to those favoured in the community with a reservoir) and rechargeable cigarettes were discussed, for example having stations for prisoners to charge their e-cigarettes in the main wing office.
- Safety of e-cigs, long term harm and SHS from e-cigs (S&P) (B&A)

<u>Changes in prison environment and health due to smoke-free</u>

- **Environment and health**

- Very positive = Environment cleaner, healthier and improved air quality – no smell of tobacco, no cigarettes butts on the floor, officers clothes no longer smell. (P&S) (B&A)
- Smoking prisoners said they felt healthier, smelt cleaner, returned sense of smell and taste (P) (A) = increased fitness, easier to breath, everyday tasks easier to complete
- Few reports of prisoners putting on weight due to more money now available to spend on canteen items – buying food instead. (link to personal achievement and gains)

- **Personal achievement and gains**

Push or incentive to give up smoking (P & S) (A)

- Previously been too difficult as surrounded by prisoners smoking (P) (A)

- Saving money for other items on canteen – previously never been able to afford to buy as most of their money spent on tobacco (P) (A)

- Staff said not there is a back log of canteen for 'other' items rarely ordered (S) (A

APPENDIX 7.23 Individual datasets collected from wing landing locations pre- and post-smoke-free policy at the four early adopter establishments: day and date, wing, sampling times including duration, arithmetic mean values and range and percentage of sampling time over 25 µg/m³

3 months pre-smoke-free					3 months post-smoke-free				
Sample location			**$PM_{2.5}$ (µg/m³)**		**Sample location**			**$PM_{2.5}$ (µg/m³)**	
Day,date, dataset reference, visit number^	**Wing**	**Sampling start time (duration hr:min)**	**Arithmetic mean (range)**	**Time (hr:min) over 25µg/m³ (%)**	**Day,date, dataset reference, visit number^**	**Wing**	**Sampling start time (duration hr:min)**	**Arithmetic mean (range)**	**Time (hr:min) over 25µg/m³(%)**
HMP Exeter (EX)									
Tuesday 19/01/16 EX01V1	B3	14:57 (6:10)	38 (17-64)	4:59 (81%)	Tuesday 05/07/16 EX01V2	B3	14:46 (10:53)	7 (2-65)	00:04 (1%)
Tuesday 19/01/16 EX02V1	A2	15:25 (14:25)	31 (12-66)	7:38 (53%)					
Tuesday 19/01/16 EX03V1	C2	15:30 (11:35)	32 (13-76)	6:48 (59%)	Tuesday 05/07/16 EX03V2	C2	14:55 (3:52)	11 (3-49)	00:22 (9%)
Tuesday 19/01/16 EX04V1	D3	15:41 (10:32)	72 (5-536)	8:15 (78%)	Tuesday 05/07/16 EX04V2	D3	14:59 (10:51)	27 (2-635)	3:27 (32%)
Wednesday 20/01/16 EX05V1	B3	07:46 (07:33)	32 (15-55)	5:38 (75%)	Wednesday 06/07/16 EX05V2	B3	08:59 (6:40)	11 (3-55)	00:23 (6%)
Wednesday 20/01/16 EX06V1	A3	07:51 (07:05)	39 (16-373)	6:01 (75%)	Wednesday 06/07/16 EX06V2	A3	09:02 (6:41)	16 (6-64)	00:50 (12%)
Wednesday 20/01/16 EX07V1	C3	07:58 (7:25)	27 (10-93)	4:11 (56%)					
Wednesday 20/01/16 EX08V1	D3	08:01 (7:30)	103 (24-389)	7:27 (99%)	Wednesday 06/07/16 EX08V2	D3	08:46 (6:42)	15 (3-139)	1:00 (15%)
Wednesday 20/01/16 EX10V1	Centre	08:06 (7:35)	29 (13-60)	8:04 (62%)					
Wednesday 20/01/16 EX11V1	C1	08:10 (7:16)	32 (9-137)	4:07 (57%)	Wednesday 06/07/16 EX11V2	C1	08:54 (6:39)	4 (2-12)	0:00 (0%)

Wednesday 20/01/16 EX12V1	B3	09:24 (5:51)	28 (13-58)	1:08 (54%)					
Wednesday 20/01/16 EX13V1	A3	15:44 (5:34)	56 (15-177)	4:52 (87%)	Wednesday 06/07/16 EX13V2	A3	15:42 (12:22)	8 (1-150)	00:41 (6%)
Wednesday 20/01/16 EX14V1	B4	15:16 (14:16)	20 (5-43)	4:30 (32%)	Wednesday 06/07/16 EX14V2	B4	15:41 (1:00)	14 (3-138)	00:03 (5%)
Wednesday 20/01/16 EX15V1	C3	15:23 (13:01)	18 (3-64)	2:46 (21%)					
Wednesday 20/01/16 EX16V1	D3	15:32 (11:21)	152 (30-656)	11:21 (100%)	Wednesday 06/07/16 EX16V2	D3	15:29 (12:20)	5 (1-86)	00:20 (3%)
Thursday 21/01/16 EX17V1	B3	07:43 (7:21)	43 (10-305)	3:57 (81%)	Thursday 07/07/16 EX17V2	B3	08:38 (7:05)	8 (3-20)	0:00 (0%)
Thursday 21/01/16 EX18V1	A4	07:45 (7:21)	33 (12-261)	4:43 (64%)	Thursday 07/07/16 EX18V2	A4	08:29 (7:09)	19 (5-469)	1:24 (20%)
Thursday 21/01/16 EX19V1	A2	07:48 (7:19)	30 (11-152)	4:21 (59%)					
Thursday 21/01/16 EX20V1	C3	07:53 (7:19)	51 (8-446)	4:09 (57%)	Thursday 07/07/16 EX20V2	C3	08:16 (4:11)	20 (2-84)	1:14 (29%)
Thursday 21/01/16 EX21V1	D1	07:51 (7:52)	39 (16-373)	6:01 (76%)	Thursday 07/07/16 EX21V2	D1	8:43 (6:24)	16 (7-372)	00:22 (6%)
Thursday 21/01/16 EX22V1	D3	07:59 (7:17)	135 (17-678)	6:48 (93%)	Thursday 07/07/16 EX22V2	D3	08:44 (7:07)	18 (6-87)	1:26 (20%)
Thursday 21/01/16 EX23V1	Centre	08:05 (7:06)	21 (10-42)	1:53 (27%)					
Thursday 21/01/16 EX24V1	B3	15:03 (13:09)	14 (2-56)	1:12 (9%)					
Thursday 21/01/16 EX25V1	A2	15:07 (14:13)	27 (3-71)	7:20 (52%)	Thursday 07/07/16 EX25V2	A2	18:00 (10:00)	7 (0-21)	0:00 (0%)
Thursday 21/01/16 EX26V1	D1	15:16 (11:22)	55 (4-380)	8:33 (75%)	Thursday 07/07/16 EX26V2	D1	15:52 (12:37)	18 (0-539)	1:49 (14%)
Thursday 21/01/16 EX27V1	C3	15:13 (3:15)	36 (16-73)	2:22 (73%)					
Friday 22/01/16 EX28V1	B2	07:48 (4:24)	11 (1-51)	0:06 (2%)					
Friday 22/01/16 EX29V1	C3	07:51 (6:53)	39 (3-166)	3:07 (74%)					

Friday 22/01/16 EX30V1	A2	07:53 (6:40)	18 (3-104)	1:18 (19%)					
Friday 22/01/16 EX31V1	A3	07:56 (6:40)	24 (4-102)	2:48 (42%)	Friday 08/07/16 EX31V2	A3	08:19 (4:11)	4 (0-24)	0:00 (0%)
Friday 22/01/16 EX32V1	Centre	08:00 (6:30)	14 (1-47)	0:47 (12%)					
Friday 22/01/16 EX33V1	D1	08:05 (6:23)	19 (2-199)	1:22 (21%)	Friday 08/07/16 EX33V2	D1	08:12 (4:12)	8 (2-14)	0:00 (0%)
Friday 22/01/16 EX34V1	D3	08:05 (6:08)	65 (7-301)	4:18 (70%)	Friday 08/07/16 EX34V2	D3	08:16 (4:11)	7 (1-69)	0:22 (9%)
HMP Dartmoor (DM)†									
Monday 08/02/16 DM01V1	F	15:38 (0:19)	7 (5-10)	0:00 (0%)					
Monday 08/02/16 DM02V1	G	16:55 (11:13)	2 (1-20)	0:00 (0%)					
Monday 08/02/16 DM03V1	A	15:49 (12:05)	12 (3-64)	0:04 (0%)	Monday 18/07/16 DM03V2	A	14:58 (10:43)	3 (1-15)	0:00 (0%)
Monday 08/02/16 DM04V1	B	15:50 (12:46)	17 (3-121)	2:10 (17%)	Monday 18/07/16 DM04V2	B	15:03 (10:11)	2 (2-12)	0:00 (0%)
Monday 08/02/16 DM05V1	D	15:58 (4:03)	47 (11-79)	3:47 (93%)					
Monday 08/02/16 DM06V1	E	15:41 (11:49)	17 (2-32)	2:58 (25%)	Monday 18/07/16 DM06V2	E	15:13 (10:58)	1 (0-8)	0:00 (0%)
Tuesday 09/02/16 DM07V1	F	15:34 (10:50)	7 (2-25)	0.00 (0%)					
Tuesday 09/02/16 DM08V1	B	15:39 (10:45)	12 (3-27)	0:06 (1%)	Tuesday 19/07/16 DM08V2	B	15:04 (11:35)	8 (4-16)	0:00 (0%)
Tuesday 09/02/16 DM09V1	D	15:47 (12:40)	9 (3-20)	0:00 (0%)	Tuesday 19/07/16 DM09V2	D	15:09 (12:18)	8 (5-29)	0:01 (0%)
Tuesday 09/02/2016 DM11V1	A	15:54 (12:48)	10 (2-28)	0:04 (1%)	Tuesday 19/07/16 DM11V2	A	15:04 (10:30)	10 (6-20)	0:00 (0%)
Wednesday 10/02/16 DM12V1	F	08:07 (1:10)	13 (4-34)	0:11 (16%)	Wednesday 20/07/16 DM12V2	F	09:22 (5:08)	3 (0-10)	0:00 (0%)
Wednesday 10/02/16 DM13V1	E	08:14 (8:09)	12 (1-43)	0:37 (8%)	Wednesday 20/07/16 DM13V2	E	09:16 (5:33)	3 (1-10)	0:00 (0%)
Wednesday 10/02/16 DM14V1	D	08:18 (7:13)	11 (0-44)	0:58 (13%)	Wednesday 20/07/16 DM14V2	D	09:10 (5:34)	5 (2-14)	0:00 (0%)

Wednesday 10/02/16 DM15V1	Care and Separation	08:23 (8:23)	3 (1-19)	0:00 (0%)					
Wednesday 10/02/16 DM16V1	B	08:26 (08:17)	9 (0-49)	0:18 (4%)	Wednesday 20/07/16 DM16V2	B	09:09 (4:30)	17 (4-30)	0:19 (7%)
Wednesday 10/02/16 DM17V1	F	16:13 (11:27)	9 (0-25)	0:00 (0%)					
Wednesday 10/02/16 DM19V1	E	16:25 (11:56)	4 (0-24)	0:00 (0%)					
Wednesday 10/02/16 DM20V1	D	16:20 (13:04)	16 (0-40)	3:03 (23%)					
Wednesday 10/02/16 DM21V1	A	16:28 (13:30)	13 (0-36)	1:56 (14%)					
Thursday 11/02/16 DM23V1	F	08:30 (3:22)	9 (3-53)	0:01 (0%)					
Thursday 11/02/16 DM24V1	G	08:32 (1:30)	36 (29-43)	1:30 (100%)	Thursday 21/07/16 DM24V2	G	09:10 (2:02)	2 (1-6)	0:00 (0%)
Thursday 11/02/16 DM25V1	D	08:34 (3:22)	8 (2-29)	0:03 (0%)	Thursday 21/07/16 DM25V2	D	08:56 (2:08)	2 (1-5)	0:00 (0%)
Thursday 11/02/16 DM26V1	A	08:41 (0:36)	8 (5-12)	0:00 (0%)	Thursday 21/07/16 DM26V2	A	08:52 (2:07)	2 (1-5)	0:00 (0%)
Thursday 11/02/16 DM27V1	B	08:47 (3:12)	10 (0-74)	0:13 (7%)	Thursday 21/07/16 DM27V2	B	08:54 (0:18)	0 (0-2)	0:00 (0%)
HMP Channings Wood									
Monday 15/02/16 CW01V1	Beuly	14:37 (10:39)	16 (7-28)	0:05 (1%)	Monday 22/08/16 CW01V2	Beuly	14:08 (11:12)	16 (1-76)	2:04 (18%)
Monday 15/02/16 CW02V1	Avon	14:45 (12:59)	12 (3-21)	0:00 (0%) ¤					
Monday 15/02/16 CW03V1	Thames	14:54 (12:06)	45 (2-1359)	8:04 (67%) ¤	Monday 22/08/16 CW03V2	Thames	14:19 (12:15)	29 (3-144)	4:33 (37%) ¤
Monday 15/02/16 CW04V1	Fleet	15:03 (3:18)	45 (0-162)	2:40 (80%)	Monday 22/08/16 CW04V2	Fleet	14:25 (10:57)	4 (2-30)	0:03 (0%)
Monday 15/02/16 CW05V1	Otter	15:19 (11:29)	27 (7-285)	4:03 (35%) ¤					
Monday 15/02/16 CW06V1	Care and Separation	15:27 (00:42)	16 (4-41)	0:07 (17%)					
Tuesday 16/02/16 CW07V1	Beuly	09:37 (06:25)	14 (0-51)	0:30 (8%)	Tuesday 23/08/16 CW07V2	Beuly	08:47 (05:53)	47 (11-227)	4:17 (73%)

Tuesday 16/02/16 CW08V1	Avon	09:40 (6:24)	26 (15-40)	3:13 (50%) ¤	Tuesday 23/08/16 CW08V2	Avon	09:16 (5:40)	15 (3-31)	0:49 (14%) ¤
Tuesday 16/02/16 CW09V1	Thames	09:49 (6:22)	55 (12-136)	5:30 (86%) ¤	Tuesday 23/08/16 CW09V2	Thames	09:01 (5:48)	19 (4-54)	1:33 (27%) ¤
Tuesday 16/02/16 CW10V1	Fleet	09:56 (6:18)	89 (14-267)	6:00 (95%)	Tuesday 23/08/16 CW10V2	Fleet	09:03 (5:47)	4 (2-11)	0:00 (0%)
Tuesday 16/02/16 CW12V1	Beuly	16:02 (6:21)	31 (20-99)	4:30 (71%)	Tuesday 23/08/16 CW12V2	Beuly	14:40 (12:14)	18 (2-86)	2:51 (23%)
Tuesday 16/02/16 CW13V1	Avon	16:05 (13:44)	24 (0-68)	5:47 (42%) ¤	Tuesday 23/08/16 CW13V2	Avon	14:57 (11:56)	9 (2-26)	0:00 (0%) ¤
Tuesday 16/02/16 CW14V1	Thames	16:11 (11:52)	42 (2-108)	7:26 (63%) ¤	Tuesday 23/08/16 CW14V2	Thames	14:46 (12:40)	25 (3-79)	4:54 (39%) ¤
Tuesday 16/02/16 CW15V1	Fleet	16:13 (13:27)	62 (4-175)	8:29 (64%)	Tuesday 23/08/16 CW15V2	Fleet	14:50 (13:10)	6 (3-13)	0:00 (0%)
Tuesday 16/02/16 CW16V1	Otter	16:17 (11:15)	3 (1-20)	0:00 (0%)					
Tuesday 16/02/16 CW17V1	Care and Separation	16:21 (1:31)	6 (2-8)	0:00 (0%)					
Wednesday 17/02/16 CW18V1	Beuly	07:52 (6:30)	33 (15-68)	5:34 (86%)					
Wednesday 17/02/16 CW19V1	Avon	07:58 (7:30)	26 (8-80)	2:31 (34%) ¤	Wednesday 24/08/16 CW19V2	Avon	09:15 (6:19)	20 (5-44)	1:08 (18%) ¤
Wednesday 17/02/16 CW20V1	Thames	08:03 (4:30)	47 (3-133)	4:14 (94%) ¤	Wednesday 24/08/16 CW20V2	Thames	09:09 (6:32)	18 (4-73)	1:23 (21%) ¤
Wednesday 17/02/16 CW21V1	Fleet	08:07 (7:37)	46 (6-169)	5:18 (70%)	Wednesday 24/08/16 CW21V2	Fleet	09:08 (6:38)	5 (3-28)	0:02 (1%)
Wednesday 17/02/16 CW22V1	Care and Separation	08:14 (7:37)	6 (2-31)	0:03 (1%)					
Wednesday 17/02/16 CW23V1	Plym	13:48 (13:43)	17 (9-54)	1:16 (9%)					
Wednesday 17/02/16 CW24V1	Humber	15:28 (1:44)	49 (3-101)	1:33 (89%) ¤	Wednesday 24/08/16 CW24V2	Humber	15:34 (13:27)	9 (2-57)	0:52 (6%) ¤
Wednesday 17/02/16 CW25V1	Exe	15:35 (11:37)	27 (2-86)	5:33 (51%)	Wednesday 24/08/16 CW25V2	Exe	15:37 (12:26)	9 (3-19)	0:00 (0%)
Wednesday 17/02/16 CW26V1	Severn	15:37 (11:31)	38 (12-116)	7:18 (63%) ¤	Wednesday 24/08/16 CW26V2	Severn	15:38 (11:47)	6 (2-23)	0:00 (0%) ¤

Wednesday 17/02/16 CW27V1	Mersey	15:40 (2:31)	27 (7-52)	1:30 (60%) ¤					
Wednesday 17/02/16 CW28V1	Weaver	15:44 (13:04)	38 (1-116)	9:24 (72%)	Wednesday 24/08/16 CW28V2	Weaver	15:45 (12:08)	4 (2-7)	0:00 (0%)
Thursday 18/02/16 CW29V1	Humber	07:53 (4:37)	25 (7-77)	1:44 (38%) ¤	Th 25/08/16 CW29V2	Humber	08:42 (4:39)	15 (7-31)	0:20 (7%) ¤
Thursday 18/02/16 CW30V1	Exe	07:56 (4:37)	19 (4-80)	0:44 (16%) ¤					
Thursday 18/02/16 CW31V1	Severn	07:58 (4:36)	35 (20-58)	3:56 (85%) ¤	Thursday 25/08/16 CW31V2	Severn	08:47 (4:08)	5 (4-8)	0:00 (0%) ¤
Thursday 18/02/16 CW32V1	Mersey	08:03 (4:35)	19 (1-64)	1:08 (25%) ¤	Thursday 25/08/16 CW32V2	Mersey	08:51 (4:09)	7 (4-13)	0:00 (0%) ¤
Thursday 18/02/16 CW33V1	Weaver	08:08 (4:32)	33 (1-249)	1:42 (38%)	Thursday 25/08/16 CW33V2	Weaver	08:51 (4:08)	6 (4-11)	0:00 (0%)
HMP Erlestoke									
Monday 29/02/16 EL01V1	Sarum	09:44 (5:11)	51 (16-403)	4:30 (87%)	Monday 15/08/16 EL01V2	Sarum	09:22 (0:15)	26 (9-38)	0:09 (60%)
Monday 29/02/16 EL02V1	Kennett	09:48 (4:24)	27 (4-264)	1:10 (27%)					
Monday 29/02/16 EL03V1	Imber	09:56 (5:12)	35 (7-217)	2:36 (50%)	Monday 15/08/16 EL03V2	Imber	09:28 (6:03)	6 (3-50)	0:10 (3%)
Monday 29/02/16 EL04V1	Silbury	10:01 (5:21)	37 (10-199)	3:51 (72%)	Monday 15/08/16 EL04V2	Silbury	09:32 (5:42)	15 (2-227)	0:40 (12%)
Monday 29/02/16 EL05V1	Avebury	10:20 (5:26)	52 (16-136)	4:58 (91%)	Monday 15/08/16 EL05V2	Avebury	09:16 (5:44)	7 (3-152)	0:11 (3%)
Monday 29/02/16 EL07V1	Sarum	14:57 (9:40)	41 (9-1058)	6:09 (64%)	Monday 15/08/16 EL07V2	Sarum	15:39 (10:09)	18 (2-64)	2:45 (27%)
Monday 29/02/16 EL08V1	Kennett	15:03 (10:40)	52 (10-220)	7:32 (71%)	Monday 15/08/16 EL08V2	Kennett	15:35 (10:22)	10 (3-106)	0:33 (5%)
Monday 29/02/16 EL09V1	Imber	15:05 (12:34)	21 (3-83)	4:00 (32%)					
Monday 29/02/16 EL10V1	Silbury	15:22 (11:51)	30 (6-808)	4:48 (41%)	Monday 15/08/16 EL10V2	Silbury	15:14 (10:58)	13 (2-103)	1:44 (16%)
Monday 29/02/16 EL11V1	Care and Separation	15:29 (12:42)	26 (2-152)	5:43 (45%)	Monday 15/08/16 EL11V2	Care and Separation	15:48 (9:45)	4 (2-23)	0:00 (0%)
Tuesday 01/03/16 EL12V1	Sarum	08:50 (1:19)	6 (1-17)	0:00 (0%)	Tuesday 01/03/16 EL12V2	Sarum	09:10 (5:23)	13 (0-109)	16% (0:53)

Tuesday 01/03/16 EL13V1	Silbury	09:08 (7:05)	20 (1-189)	2:07 (30%)	Tuesday 01/03/16 EL13V2	Silbury	09:04 (5:05)	12 (5-67)	5% (0:16)
Tuesday 01/03/16 EL14V1	Wessex	09:43 (6:14)	20 (10-39)	0:59 (16%)					
Tuesday 01/03/16 EL15V1	Marlborough	09:57 (6:05)	20 (3-60)	1:28 (24%)	Tuesday 01/03/16 EL15V2	Marlborough	09:23 (5:20)	8 (1-39)	2% (0:07)
Tuesday 01/03/16 EL16V1	Care and Separation	13:17 (11:21)	13 (1-43)	1:07 (10%)					
Tuesday 01/03/16 EL17V1	Wessex	15:58 (5:42)	45 (27-60)	5:42 (100%)					
Tuesday 01/03/16 EL18V1	Silbury	16:18 (10:58)	9 (1-39)	0:04 (1%)	Tuesday 01/03/16 EL18V2	Silbury	14:08 (10:01)	17 (5-105)	1:27 (14%)
Tuesday 01/03/16 EL19V1	Imber	16:22 (12:14)	18 (0-189)	3:20 (27%)	Tuesday 01/03/16 EL19V2	Imber	14:23 (9:34)	14 (4-59)	1:25 (15%)
Tuesday 01/03/16 EL20V1	Sarum	16:29 (11:58)	35 (1-190)	7:20 (61%)	Tuesday 01/03/16 EL20V2	Sarum	14:33 (10:23)	50 (5-3073)	4:24 (42%)
Wednesday 02/03/16 EL21V1	Sarum	08:53 (5:43)	11 (2-57)	0:16 (5%)	Wednesday 02/03/16 EL21V2	Sarum	09:12 (2:52)	15 (9-22)	0:00 (0%)
Wednesday 02/03/16 EL22V1	Kennett	09:02 (5:08)	33 (2-213)	1:41 (33%)	Wednesday 02/03/16 EL22V2	Kennett	09:19 (2:45)	36 (9-337)	1:05 (39%)
Wednesday 02/03/16 EL23V1	Avebury	09:18 (5:46)	19 (1-73)	1:29 (26%)	Wednesday 02/03/16 EL23V2	Avebury	09:03 (3:18)	3 (0-63)	0:12 (6%)
Wednesday 02/03/16 EL24V1	Marlborough	09:25 (5:34)	30 (11-204)	2:43 (49%)	Wednesday 02/03/16 EL24V2	Marlborough	09:06 (3:10)	22 (11-48)	0:46 (24%)
Wednesday 02/03/16 EL25V1	Care and Separation	09:41 (3:45)	19 (4-85)	0:49 (22%)					

^Visit 1 (V1) = 3 months pre- smoke-free policy. Visit 2 (V2) = 3 months post- smoke-free policy.

† At HMP Dartmoor air monitors were placed at one end of the wings.

¤ Air monitors placed in wing landing cupboard.

All four prisons received their canteen orders on a Friday.

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