

Institution: University of Stirling		
Unit of Assessment: 3. Allied Health Professions, Dentistry, Nursing and Pharmacy		
Title of case study: Achieving the successful implementation of a total smoking ban in a national prison service		
Period when the underpinning research was undertaken: 2015 - 2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Professor Kate Hunt	Professor of Behavioural Sciences and Health	Feb 2018 - Present
Ashley Brown	Research Fellow	April 2018 - Present
Dr Sean Semple	Associate Professor	Jan 2018 - Present
Douglas Eadie	Research Fellow	2004 - Present
Dr Richard Purves	Research Fellow	2010 - Present
Professor Linda Bauld	Professor of Health Policy	2011 - Nov 2018
Dr Rachel O'Donnell	Research Fellow	Jan 2018 - Present
Dr Ruaraidh Dobson	Research Assistant	Jan 2018 - Present
Dr Allison Ford	Research Fellow	2010 - Present
Period when the claimed impact occurred: 2018 - present		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact		
<p>University of Stirling research underpinned the successful implementation of the new smoke-free policy in Scottish prisons through effective partnership-working with the Scottish Prison Service (SPS). We facilitated the success of the new policy by feeding back the views of those in custody (hereafter 'prisoners'), prison staff, and providers/users of smoking cessation services throughout the preparation period for its successful introduction. Immediate improvements in prison air quality evidence the successful implementation of the policy, and the end of the exceptional circumstance of staff exposed to second-hand smoke, leading to health improvements for prisoners and staff (e.g. reduction in medications for respiratory-related illness). Benefits will accrue to the ~4,500 staff employed by SPS and over 8,000 people in their care each year. Long-term analyses show total costs were lower with the smoke-free policy compared to without for prisoners (GBP32,848 versus GBP33,749) and staff (GBP10,462 versus GBP11,183).</p>		
2. Underpinning research		
<p>Prison smoking bans are challenging because smoking is culturally embedded in prison life, where tobacco serves many functions, e.g. as a currency, stress reliever, or symbol of freedom in a group with limited privileges. Concerns about disruption or unrest dominate media coverage of prison smoking bans. Bans were recently introduced in England and Wales, following countries including Canada and New Zealand, but no country to date had conducted pre- and post-ban evaluations. The method by which Scotland implemented its prison smoking ban is novel: it was informed by robust evidence from the Tobacco in Prisons study (TIPs) (and the allied 'E-cigarettes in prisons' study) (R1-R5) on second-hand smoke (SHS) levels and the views of prisoners and prison staff before, during and after the development and implementation of the policy. This is important because the voices of the most directly affected (prisoners, prison staff) have been largely absent, previously limiting learning between countries.</p>		
Extent of the problem		
<p>In Scotland, ~73% of prisoners in 2015-18 smoked; a level not seen in the general population since the 1950s, and far higher than the national average (~20%). High prisoner smoking rates have been described as a pernicious public health problem, often overlooked in tobacco control policy. Smoking in prisons affects a vulnerable population, increasing health risks for prisoners and prison staff exposed to SHS at work (illegal since 2006/7 in most UK workplaces), and places a burden on health services. SHS is estimated to increase lung cancer risk by 25% (www.nhs.uk/smokefree/why-quit/secondhand-smoke#).</p>		
The Tobacco in Prisons (TIPs) study (PI Hunt) comprises three phases:		
<ul style="list-style-type: none"> • Phase 1: Before any smoke-free prison policy was formulated in Scotland; Phase 2: From announcement to implementation of policy; Phase 3: Post-implementation evaluation. 		

Hunt and **Semple** led Phase 1 prior to moving to Stirling from the Universities of Glasgow and Aberdeen. Stirling impact is only claimed for Phase 2 (evidenced by Phase 3), although Phase 1 research defined the context. Surveys and staff focus groups in all 15 Scottish prisons in Phase 1 highlighted considerable staff concern about SHS exposure at work and the challenges of implementing or enforcing tobacco bans in prisons. Our allied study of e-cigarettes in prisons was conducted in parallel with TIPs in Phases 2 and 3.

Phase 2: Planning for smoke-free policy

Staff were initially more positive than prisoners about increased smoking restrictions (74% staff and 22% prisoners agreed bans were a 'good idea'), although staff expressed concerns about the need for appropriate measures, resources and support, adequate lead-in time, and effective communication in preparation for a ban. Prisoner views were more favourable if e-cigarettes might be introduced. Survey data from prisoners (n=2512) and staff (n=1271), and 17 focus groups (n=132 staff), in all prisons identified factors and measures that key groups considered critical for successful implementation, including effective communication and enhanced training and support (**R1**). The data highlighted a potential role for introducing e-cigarettes to take account of more vulnerable smokers' needs in the lead up to a smoking ban. Staff focus groups realised a need for information on the balance of evidence on e-cigarettes for reducing smoking harms, and concerns and uncertainties about potential e-cigarette harms and security risks in prisons (**R2**). Opposition to smoke-free policy centred on concerns about fairness and apprehension about adverse impacts. However, analysis of in-depth interviews with 77 prisoners confirmed that communication about the impending implementation was effective, resulting in widespread awareness, and that some prisoners anticipated positive benefits of the policy for themselves, other prisoners, and prison staff (**R3**). Data collected soon after rechargeable e-cigarettes (hereafter 'vapes') were introduced a few weeks before the implementation of smoke-free rules, showed widespread experimentation with vapes in preparation for the removal of tobacco. Analysis of in-depth interviews with prisoners (n=28) provided evidence that prisoners felt listened to and more confident they would be able to cope with enforced abstinence from tobacco (**R4**) and three repeat cross-sectional surveys with staff (n=1271, n=1494, n=757) and with prisoners (n=2125, n=1673, n=1248) showed strong support for the decision to make e-cigarettes available in the lead up to the smoking ban (**R5**).

The smoking ban was successfully implemented in November 2018, without major incident, despite fears about significant disruption (**R1**, **R5**) expressed earlier by both staff and prisoners.

3. References to the research (Stirling authors in bold text)

- R1. Brown A**, Sweeting H, Logan G, Demou E, **Hunt K** (2018) Prison staff and prisoner views on a prison smoking ban: evidence from the Tobacco in Prisons study. *Nicotine and Tobacco Research*, 21(8). DOI:[10.1093/ntr/nty092](https://doi.org/10.1093/ntr/nty092)
- R2. Brown A**, Sweeting H, **Semple S**, Bauld L, Logan G, **Hunt K** (2019) Views of prison staff in Scotland on the potential benefits and risks of e-cigarettes in smoke-free prisons: a qualitative focus group study. *BMJ Open*, 9:e027799. DOI:[10.1136/bmjopen-2018-027799](https://doi.org/10.1136/bmjopen-2018-027799)
- R3. Brown A**, **Eadie D**, **Purves R**, **Mohan A**, Bauld L, **Hunt K** (2020) Perspectives on smokefree prison policy among people in custody in Scotland. *International Journal of Prisoner Health*, 16(4). DOI:[10.1108/IJPH-12-2019-0065](https://doi.org/10.1108/IJPH-12-2019-0065)
- R4. Brown A**, **O'Donnell R**, **Eadie D**, **Purves R**, Sweeting H, **Ford A**, Bauld L, **Hunt K** (2020) Initial views and experiences of vaping in prison: a qualitative study with people in custody preparing for the imminent implementation of Scotland's prison smokefree policy. *Nicotine and Tobacco Research*, 23(3). DOI:[10.1093/ntr/ntaa088](https://doi.org/10.1093/ntr/ntaa088)
- R5. Sweeting H**, **Brown A**, Demou E, **Hunt K** (2020) Prisoners and prison staff express increased support for prison smoking bans following implementation across Scotland: results from the Tobacco in Prisons Study. *Tobacco Control*. DOI: [10.1136/tobaccocontrol-2020-055683](https://doi.org/10.1136/tobaccocontrol-2020-055683)

Funding:

Hunt K (PI), Stirling co-Is: **Semple**, **Eadie**, **Bauld**, **Purves**. Evaluating graduated progress towards, and impacts of, the implementation of indoor smoke free prison facilities in Scotland. National Institute for Health Research, GBP853,045 (original award; extension to May 2020 and increase to GBP958,679 for Phase 3 analysis of outcomes of smoke-free policy). **Hunt K** (PI), Stirling co-Is: **Brown**, **Bauld**, **Eadie**, **Purves**. The role of e-cigarettes in the

implementation of smoke-free prisons and ongoing management of prisoner populations, GBP87,582 CRUK Tobacco Advisory Group Oct 2018 to Mar 2020.

4. Details of the impact

Following TIPs Phase 1 research on SHS levels in prisons, the SPS announced (July 2017) it would implement a complete smoking ban in all its prisons from November 2018. Our research conducted and fed back in Phase 2 (**R1-R5**) directly underpinned the successful implementation of the ban. Phase 3 evidenced its success, including: objectively-measured reductions in SHS in the week of implementation (**S1**) and 6 months later (**S2**); survey and qualitative data documenting the experiences of staff and prisoners; improved outcomes (e.g. medications dispensed for prisoners; staff sickness absence rates); and cost-effectiveness in the short- and long-term (**S3**).

Impact 1: Informing successful SPS planning and communications

Knowledge exchange with stakeholders is at the core of TIPs. Hunt and Brown were active members (periodic input also from Semple, Eadie, Bauld) of the SPS Smoke Free Prisons Stakeholder Advisory Group (SAG, formed after policy announcement) alongside senior SPS staff and representatives from unions, NHS, and Scottish Government. **TIPs findings were rapidly and directly incorporated into SPS planning and communications via their reporting at monthly SAG meetings.** Specifically, TIPs findings fed into SPS' communications strategy about smoke-free prisons, identifying some issues to target and providing reassurance that important messages were being successfully **communicated to key groups. Ongoing communication of early findings enabled SPS to be more "agile" and to "respond quicker" (S4) and successfully.** As the SPS lead for implementation of the smoke-free prison project stated:

"The fact that you [TIPs team] were doing... very informed and robust focus groups and questionnaires allowed us to check whether our message was hitting home... Having you as part of our SAG meetings was really important. And you feeding back on some of the research you'd been doing was really helpful for us because that gave us a[n]... independent check. People actually were getting the message... it was absolutely essential to this project." (**S5**)

Our independent research evidence was seen by operational and non-operational staff as a crucial arm of the planning for smoke-free implementation. Involving staff and prisoners in the research made a significant contribution to **changing attitudes towards the policy** and in **influencing staff and prisoners to anticipate the change more positively.** Our research findings helped them to take greater ownership and invest more fully in this major and challenging policy change:

"If we hadn't communicated what we were trying to do, I don't think we'd have got on very far... not just with individuals in custody, with all the staff group. And I think reassuringly for them, an independent channel, an objective channel... you were working with us but not for us...[,] that was really good and gave staff a level of assurance that you were independent and they would be heard. ... [W]hat our comms strategy developed into as we went through the process was influenced by the [research]... where the researchers were getting a chance to feedback initial findings. It allowed us to act quickly to address some of these issues." (**S5**)

This, in turn, was instrumental in **demonstrating greater acceptance than expected to the removal of tobacco amongst some prisoners and reducing resistance to the policy's implementation amongst other prisoners and staff.** As the SPS Communication Strategy & Operational Liaison stated:

"I think the unexpected things for me was the willingness of people in custody to talk about the impact of taking tobacco off them...[,] all the research showed that tobacco was important, it's important status-wise,... culturally,... as currency. ... [I]t reinforced we're doing this for the right reason. ... We're not doing it 'cause it's politically correct. ... We're doing it because people in our care, their health will improve.. [T]he majority of it reinforced what we suspected. But it moved from hearsay... to physical fact and evidence. ... It allowed you to challenge negative views and the doubters. 'This'll never work. Prisoners will never accept this'. Well actually they will. ... That was one of the things I think was really encouraging, the amount of people saying, 'I'll maybe see this as an opportunity of quitting altogether'. And I think that actually really prepared the NHS for the number of people that were going to impact on their services. So again, that factual bit of evidence had a real practical outcome for one of our partners within the project, 'We need to scale up or we're never going to meet demand.'" (**S4**)

Among the measures adopted by the SPS prior to implementation were the introduction of e-cigarettes and the adoption of 'diversionary activity' programmes.

Impact 2: Informing world-first vaping guidelines

Phase 2 interviews conducted with staff and prisoners after rechargeable vaping devices and e-liquids became available for purchase in prisons shortly before tobacco sales ceased, allowed a unique insight into how e-cigarettes can support (or disrupt) initiatives to improve staff and prisoner health. Some prisoners had exceeded their own expectations in using e-cigarettes to cut down or stop smoking; others reported little utility from vaping at this early stage. Participants articulated symbolic and practical benefits of e-cigarettes in the transition to smoke-free prisons but highlighted potential issues related to inappropriate use, product choice, affordability, safety, and long-term use of e-cigarettes. These results helped to shape NHS responses, and specifically the Guidance launched in January 2020 on supporting people in custody who wish to cut down or quit vaping (S6). Also, as part of TIPs, Eadie, Brown, Hunt, Purves, and Bauld conducted and analysed interviews with providers of NHS smoking cessation programmes in all Scottish prisons, and people using, or wanting to use, these services in six case-study prisons. TIPs also provided independent evidence on successes, challenges, and gaps in provision of cessation support from the perspective of service providers and users in the lead up to smoke-free implementation to the SPS SAG and NHS colleagues designing and providing Quit Your Way Prisons pathways to support prisoners to abstain from or quit smoking.

Impact 3: TIPs identified factors in making smoke-free prisons implementable

Phase 2 research identified key factors for the successful implementation of a complete tobacco ban within prisons, including: maintaining an open dialogue with staff and prisoners in the lead-up to implementation; ensuring decisions on the support in place prior to the ban were based on evidence; and broad and early communication of the policy, e.g. to ensure new prisoners did not only learn of the smoking ban on arrival. **The mixed-methods design provided evidence which Public Health Scotland and Scottish Government found convincing and engaging, allowing the smoke-free policy to achieve the aims it had.** As someone from Health Scotland indicated:

"One of the things that is key, is a great study design. ... [T]here is the power of the stories and... of numbers and I think you need to have both... to really get ministers' and civil servants' attention... that's what TIPs had. It had both the numbers which had come from the exposure data, [and] the story of what that means in terms of the perspective of staff. ... The narrative was so strong and I think that's why it's had this huge impact [i.e. success of policy]... it is really harnessing the power of stories and numbers together that you really get impact." (S7)

The Head of Tobacco Control in the Scottish Government identified the **TIPs findings as a catalyst for the smooth, successful change to smoke-free prisons:**

"I think what TIPs brought us was the catalyst for a definitive time for the change... without TIPs I think we still wouldn't have had smoke-free prisons right now... and the transition certainly would not have been so smooth and the implementation would not have been as smooth. ... [H]aving TIPs as the evidence was crucial, not just in terms of the pace, but actually to give us the confidence and the assurance that this was a good decision and it would very likely have a very positive impact. ... I think the Phase two was as important as the Phase one. The Phase one gets us an evidence base for making decisions. The Phase two is much more focused on how the actual policy change would be made. ... [I]t's one of the rare brilliant times where you can see the research smoothing the way for the policy." (S8)

Moreover, TIPs helped to bring together all major stakeholders:

"The research had a direct influence on providing evidence that persuaded NHS Public Health, local NHS service providers, health promotion/improvement organisations, and prison management and administration to work together in partnership to make the smoke-free transition a success. Key stakeholders stressed that the SPS could not have implemented the policy alone, and that 'working in partnership was absolutely essential' to the success of the smoke-free policy, linking its effectiveness directly to the evidence provided by this research." (S8)

Impact 4: Creating a successful partnership model for policy implementation

The TIPs project provides a model of 'best practice' for partnership working in the development and implementation of challenging policy, from SPS, Government and health service perspectives. The SPS lead for implementation of the smoke-free prison project stated:

"[E]verybody involved in the project, I think, deems it a success and an absolute best-practice model of working in partnership with yourselves and the TIPs project, but also with the NHS, with our own trade union side, and with those across the prison service. It's worked really, really well and made a tremendous difference to people's lives. ... Because the research was so influential in developing these successful working partnerships, it had a direct influence on shifting the culture of practice in the SPS for the benefits of prisoners and staff alike." (S5)

Additionally, this partnership has **built capacity, knowledge, and expertise** for future cross-agency partnerships to extend health improvement in prisons in other ways:

"Now because we've made those partnership connects with health boards and probably from both sides, we can actually work together pretty well. There's a specific relationship with NHS primary care, who provide a service to prisons and deal with the prisoners every day. ... But the health improvement side of it I think has been lacking historically with some notable exceptions. But the smoke-free prisons partnership working has certainly got that together in a much more proactive way. ... It's raised the profile of what we can do working together, where that wasn't there before." (S5)

TIPs also: "engendered a real enthusiasm for further change in other fields[,]... the partnership aspect of TIPs and the enthusiasm with all parties to it, the enthusiasm people had for it, has been very helpful in a lot of wider policies as well. So things you wouldn't necessarily get credit for" (S8). The collaborative model of policy implementation that TIPs has created is now also being showcased in World Health Organisation training as an example of best practice in the area of smoke-free prisons.

Impact 5: Successful implementation has led to improved health

Air quality measurements conducted in TIPs Phase 3 in the week of smoke-free implementation (30th November 2018) provided world-first evidence of an immediate reduction in SHS. There was an average reduction of 81% post-implementation in comparison with 2016 measurements across all prisons (S1). Measurements in May 2019 show that this reduction has been sustained or improved upon, with very little objective evidence of violations of the ban (S2).

Further benefit impacts arising from the ban include reduction in prescriptions issued to treat acute respiratory symptoms in people in custody and cost-effectiveness of the policy (S3). Long-term analyses showed total costs were lower with the smoke-free policy compared to without for people in custody (GBP32,848 versus GBP33,749) and staff (GBP10,462 versus GBP11,183). At the GBP20,000 UK National Institute for Health and Care Excellence willingness-to-pay threshold, the smoke-free policy for both groups would be considered highly cost-effective.

Sources to corroborate the impact

S1: Semple et al. (2019). The impact of implementation of a national smoke-free prisons policy on indoor air quality: results from the Tobacco in Prisons study. *Tobacco Control*, 29(2). DOI: [10.1136/tobaccocontrol-2018-054895](https://doi.org/10.1136/tobaccocontrol-2018-054895).

S2: Demou et al. (2020). From smoking-permitted to smokefree prisons: a 3-year evaluation of the changes in occupational exposure to second-hand smoke across a national prison system. *Annals of Work Exposure and Health*, 64(9). DOI: [10.1093/annweh/wxaa073](https://doi.org/10.1093/annweh/wxaa073).

S3: Hunt et al (forthcoming 2021). Evaluating graduated progress towards and impacts of the implementation of indoor smoke free prison facilities in Scotland. *Public Health Research*.

S4: Testimonial: Communication Strategy & Operational Liaison (Scottish Prison Service).

S5: Testimonial: Head of Smoke-free Implementation (Scottish Prison Service).

S6: Supporting individuals to cut down and quit vaping: Guidance for NHS Quit Your Way advisers based in prisons (<http://stir.ac.uk/37s>).

S7: Testimonial: Interim Head of Knowledge & Research Hub (Public Health Scotland).

S8: Testimonial: Head of Tobacco Control (NHS Health Scotland).