

MRC/CSO  
Social and Public Health  
Sciences Unit

# How did a complete smoke-free policy affect the health of people in prison in Scotland? Findings from the Tobacco in Prisons study

Published September 2021

## Why did we do this study?

Rates of tobacco smoking in people in prison are very high in most countries. For instance, in Scotland in 2017, more than three times as many people in prison were smokers (7 in 10) compared to as people living in the community. These high rates of smoking meant that levels of second-hand smoke in prisons were similar to those found in a typical smoking home.

Smoke-free policies in public places have been shown to have beneficial effects on health, for instance by reducing rates of heart attacks and hospital admissions for asthma. When the UK introduced smoke-free policies in 2006 (Scotland) and 2007 (England and Wales), prisons were partially exempt from these bans. Although some countries have introduced smoking 'bans' in prison, much less is known about how smoke-free policies in these settings impact on people's health.

In 2017, the Scottish Prison Service announced that from 30th November 2018, smoking would be prohibited in all indoor and outdoor areas. We wanted to find out how this might affect the physical and mental health of people in prison, using medications as a marker for health.

## What did we do?

We used data from prison pharmacies across all prisons in Scotland between 2014 and 2019 to collect information on the dispensing of medications for three key outcomes:

1. Quitting smoking (such as nicotine gum or patches)
2. Short-term health conditions or symptoms related to smoking (such as asthma and angina attacks)
3. Mental health conditions (such as depression and anxiety)

We also looked at dispensing of medications for epilepsy. We used this as a 'control' group of medications because we did not expect this to be affected by the smoke-free policy.

We used statistical modelling to identify whether the amount of medications dispensed for these key health outcomes changed in response to the announcement (on 17th July 2017) or the implementation (on 30th November 2018) of the smoke-free prison policy, after accounting for other influences and trends such as seasonal variation.

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The MRC/CSO Social and Public Health Sciences Unit, the University of Glasgow is jointly funded by The Medical Research Council (MRC) and the Scottish Government Chief Scientist Office (CSO).

University of Glasgow charity number SC004401

## What did we find?

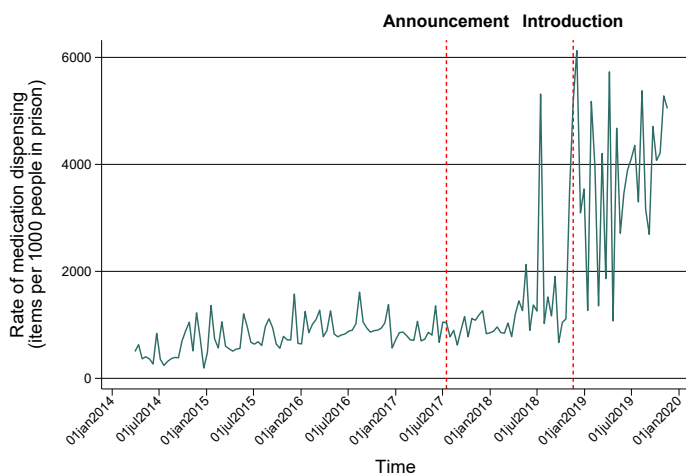
Implementation of the smoke-free policy resulted in a substantial increase in the use of medications for quitting smoking, and reductions in medications for short-term health conditions related to smoking. For instance, the rate of medication dispensing for breathing conditions among people in prison reduced by 11% after smoking was prohibited – that's equivalent to 646 fewer medications per 1,000 people per fortnight.

We found no changes in the dispensing of medications for depression and anxiety. This is reassuring as it suggests there were not major negative consequences for the mental health of people in prison overall, although it doesn't rule out the possibility that this was the case for some people, especially those with existing mental health problems.

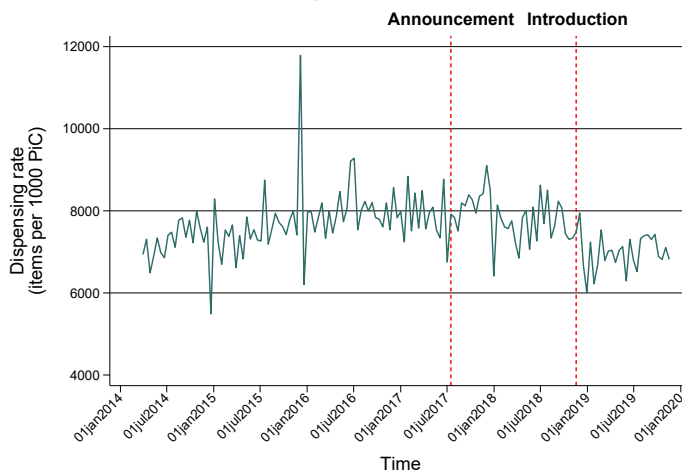
We also found no changes in our 'control' group of medications for epilepsy. This increases our level of confidence that findings for dispensing for smoking-related health conditions and quitting smoking were the result of the change in policy.

This project is part of a large [study](#) led by the University of Stirling, which is the first internationally to evaluate the introduction of a comprehensive smoke-free policy across a national prison system, and the first to use routinely collected data on medication dispensing to understand potential health effects for people in prison.

### Medications for quitting smoking



### Medications for smoking-related illnesses



## What next?

These results provide new evidence for other countries that are considering introducing smoke-free policies in prisons. This could be especially important at present, because people who smoke may be at higher risk of becoming very ill after getting Covid-19, and prisons in many countries have seen widespread outbreaks of the infection. Any measures that improve overall physical and respiratory health amongst people in prison may reduce the chances of getting severely ill if they were to contract Covid.

When assessing the long-term impacts of smoke-free prisons policy on health, it is important to know what happens when people leave smoke-free prisons and whether they return to smoking. There is very little evidence on this and so, with colleagues from the University of Stirling, we are starting a follow-up project in autumn 2021.

The likelihood of people resuming smoking after release will be one of the main factors affecting whether the short-term health benefits seen in this study are sustained. Future research will be needed to understand how smoke-free policies affect the long-term health of people in prison.

### [Read the paper](#)

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