

Supporting smokers' quit attempts reduces national smoking prevalence

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Smoking remains a massive health problem. Although smoking prevalence is declining in high income countries, rates are still increasing in many low and middle income jurisdictions.¹ Internationally, the eradication of smoking would transform global health but achieving this will likely require resolute, combined individual- and population-level approaches.² For individuals, effective interventions like behavioural support³ and pharmacotherapy^{4 5} can equip people with the skills to try stopping and successfully stop. However, these interventions are of limited use if they are seldom used or not readily accessible and this is where concomitant population-level tobacco control strategies can help. For example, anti-smoking publicity campaigns can encourage people to try stopping and making evidence-based support, like pharmacotherapy, cost-free can encourage more quitters to use it. By reaching many people population-level strategies can have substantial impacts.²

Smoking is probably the most comprehensively-researched unhealthy behaviour. There is an abundance of robust, high-quality randomised controlled trials (RCTs) testing the efficacy of individual-level smoking cessation interventions summarised in over 80 Cochrane Tobacco Addiction Group systematic reviews.⁶ Evidence for what works at a population level is much thinner. It is challenging to secure the very strongest research evidence for population-level approaches; to evaluate national tobacco control policies with RCTs would require countries to accept random allocation to different policies and this is evidently unfeasible. However, in this edition of Thorax, Beard et al report an imaginative, non-RCT evaluation of population-level tobacco control strategies using national survey data collected between 1973 and 2016. This suggests that the very comprehensive tobacco control policies introduced into the UK around the millennium, including provision of national stop smoking services had very positive, population-level impacts on rates of starting and stopping smoking and also on smoking prevalence.

The UK has a long history of conducting large-scale, health behaviour surveys so the study utilises freely-available data from three conducted in England, Scotland and Wales: the General Lifestyle (formerly Household) Survey (1973-2008); the Integrated Household Survey (2009-2014) and the Annual Population Survey (2014-15). Outcomes representing smoking uptake, cigarette smoking prevalence and making quit attempts were derived and complex statistical procedures used to find regression functions which most closely matched longitudinal outcome trends. To avoid accusations of contriving analyses to fit hypotheses, the authors pre-registered a statistical analysis plan and carefully describe which planned analyses weren't conducted and why. Given that data are observational and were analysed without blinding, this is reassuring.

As expected, there were substantial changes in smoking and quitting behaviour during the study period: smoking prevalence fell from 48% to 16% and the uptake of smoking or 'ever smoking in young adults' fell from 56% to 26%. Conversely, a measure of quitting activity, the 'quit ratio' (ratio of those not smoking in any year to those who reported ever smoking) rose from 26% to 62%. The study demonstrates in the period leading up to 2000, a striking deceleration in positive rates of change across all three measures which was quickly reversed in the first years of the 21st century. Initially, from when data collection began in 1973 there were rapid annual falls in smoking prevalence and uptake and similar year-on-year increases in quitting activity. However, as the millennium approached rates of positive change in prevalence and uptake slowed. Additionally, from 1994 smoking uptake actually started rising as larger numbers young

people reported 'ever-smoking'; previous falls in smoking uptake were reversing. All changed around the millennium and in the first years of the 21st century smoking prevalence declined more abruptly again and quitting activity accelerated. Similarly, post-2000, smoking uptake rates suddenly began dropping again; desirable changes in all three measures continued at a largely constant linear rate until 2016 when data collection ended. Around the turn of the century something very major re-energised population-level quitting activity, speeding up concomitant reductions in smoking uptake and prevalence.

The most likely explanation for these striking pre- post-millennial changes is the introduction of UK-level tobacco control initiatives following the 1998 "Smoking Kills" white paper.⁷ Massive changes in societal smoking behaviours had largely stalled by the late 1990s but the introduction of this raft of policies most likely injected further impetus. What was it about these policies that had such pronounced impacts? The one crucial difference between pre-and post-millennial tobacco control policies is that, before "Smoking Kills", the UK National Health Service (NHS) gave people advice against smoking but didn't offer help with quitting; However, since "Smoking Kills" a central tenet of policy has been to make free-to-access stop smoking support available to all who attempt cessation. Pilot stop smoking services (SSS) were introduced in 1999⁸ and set up everywhere from 2000⁹ and hundreds of thousands of people accessed and were helped by SSS.⁹⁻¹⁰ Simultaneously, effective pharmacotherapies became available through the NHS and at no cost to many smokers;¹¹ this catalysed an exponential shift in primary care prescribing which helped and many thousands more smokers who did not attend SSS.¹²⁻¹⁴ Offering cessation support improves the chances of people who smoke of successfully stopping smoking¹⁵, so provision of support on a national scale undoubtedly helps explain the resurgence in quitting activity at the start of the 21st century.

Why should falls in smoking uptake and prevalence and increases quitting have slowed towards the end of the 20th century? Again, this is best interpreted in the context of prevalent tobacco control policies. The first UK anti-smoking campaigns began in the mid-1960s and television tobacco advertising was banned then too.¹⁶ Subsequently, cigarette packet warnings appeared in 1971 and cigarettes taxes were first levied in 1972.¹⁶ Consequently, in 1973 when smoking behaviour surveys first began, knowledge of smoking harms had not been long in the public consciousness and the prevailing climate likely encouraged the rapid, positive changes observed. After 1973 there was little new tobacco-orientated, national government policy apart from banning radio tobacco advertisements in 1978 and, from 1993, making tobacco less affordable through annual, punitive tax rises.¹⁶ Crucially, policy was not at all orientated around helping smokers to stop and no cessation support was provided. So perhaps the pre-millennial exhaustion in quitting activity indicates there is a ceiling to quitting activity made in response to knowing that smoking is harmful? Although this necessary public health message provokes a proportion of smokers into quitting spontaneously, there are others who can't succeed without support.

With observational study designs, it is impossible to be totally sure about causality, but data presented in this paper are about as strong as possible for attributing impacts from national tobacco control strategies. Findings suggest that in countries with high smoking rates where few if any, anti-tobacco strategies have been deployed, simple anti-smoking

education such as media campaigns and pack health warnings may help reduce smoking prevalence. Impacts would probably wane over time but adding provision of stop smoking support could further accelerate reductions in smoking prevalence. Tobacco control policies which include provision of support exert a pincer attack on smoking by simultaneously dissuading some young people from starting smoking and helping others to stop. This affords a clear rationale for offering cessation support as a central component of tobacco control strategy. Finally, this work demonstrates the value of routine population surveys for monitoring unhealthy behaviours; without their data, no evaluation of UK tobacco control strategy would have been possible.

Today the UK's response to smoking, the biggest, preventable cause of disease, is fragmented. In England, SSS provision is now optional and these are delivered by local authorities which face severe austerity; due to decommissioning, SSS are simply not available everywhere.¹⁷ Compared to a decade ago, in England, Scotland and Northern Ireland, fewer people are using SSS.¹⁶ Rising substitution of e-cigarettes for smoking may partially explain falling footfall, though English austerity has undoubtedly contributed; people can't use SSS where these no longer exist.¹⁶ In Wales, however, use of more recently-established SSS is still increasing suggesting other factors are important.¹⁶ Whatever reasons underpin declining SSS attendance, hundreds of thousands of smokers are still helped by them. Supporting smokers works; Beard et al demonstrate that a coordinated, national policy response which included provision of support precipitated the early 21st century collapse in national smoking prevalence. Eradicating smoking will very likely require a continued, multi-faceted approach but within this a key component should be universal SSS provision which ensures that all who want to benefit from evidence-based support can access this.

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