

<b>Institution:</b> University of Nottingham		
<b>Unit of Assessment:</b> 2 – Public Health, Health Services and Primary Care		
<b>Title of case study:</b> Development and implementation of UK tobacco control policy		
<b>Period when the underpinning research was undertaken:</b> 2008-June 2019		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
John Britton Tim Coleman	Professor of Epidemiology Professor of Primary Care	1984-July 2020 2001-present
<b>Period when the claimed impact occurred:</b> August 2013 – October 2020		
<b>Is this case study continued from a case study submitted in 2014?</b> No		
<p><b>1. Summary of the impact</b></p> <p>Our tobacco control research has contributed to significant reductions in United Kingdom (UK) smoking prevalence and consequent mortality and morbidity, by changing national tobacco control policy and the delivery of stop smoking services. Between 2014 and 2018 there was a decrease from 18% to 15% in smoking prevalence. Our work has underpinned the establishment of the UK as a world leader in using electronic cigarettes for tobacco harm reduction; developed national models for smoking cessation support in pregnancy and in secondary care services; caused English prisons to go smoke-free; enabled legislation prohibiting smoking in cars carrying children; and supported national policy on standardised packaging and preventing media imagery that encourages smoking uptake and continuation, particularly amongst young people.</p>		
<p><b>2. Underpinning research</b></p> <p>Original research including systematic reviews, meta-analyses, randomised controlled trials (RCTs), surveys, observational studies and policy development has been a core activity during this REF period, and particularly since 2008 through Britton's leadership of the UK Centre for Tobacco and Alcohol Studies (UKCTAS), one of five UK Clinical Research Collaboration (UKCRC) Public Health Research Centres of Excellence.</p> <p><b>Evidence reviews and RCTs:</b> Britton chaired the Royal College of Physicians (RCP) Tobacco Advisory Group (1996-2018) and commissioned, edited and led Nottingham UKCTAS staff in the production of substantive policy reports including primary research, systematic reviews and meta-analyses, and policy translation. These quantified the burden of passive smoking among children in the UK<sup>i</sup>; revealed the extent of the health and economic impact of smoking among individuals with a mental health condition<sup>ii</sup>; provided an update on the evidence about the use of e-cigarettes and concluded that promoting e-cigarettes as a substitute for smoking was likely to lead to substantial health gains in the UK<sup>iii</sup>; and demonstrated the harms and costs across the National Health Service (NHS) arising from smoking in NHS patients, setting out an approach for the systematic delivery of smoking cessation interventions within routine care<sup>iv</sup>. Based on their collective findings, these recommended diverse policy changes related to passive smoking, mental health, tobacco harm reduction and integrating smoking cessation treatments into routine NHS care.<sup>1</sup> Our landmark RCT of Nicotine Replacement Therapy (NRT) in pregnancy (SNAP)<sup>2</sup> and related Cochrane Review,<sup>3</sup> provided the first conclusive evidence that NRT helps pregnant women stop smoking. Another systematic review demonstrated the strong relationship between stillbirth and smoking in pregnancy.<sup>4</sup> We completed the first reported RCT of opt-out smoking cessation service provision for hospital in-patients<sup>5</sup> and a non-randomised study of delivering opt-out cessation provision in pregnancy,<sup>6</sup> both demonstrating that systematically delivered opt-out referral models double service uptake and quit rates.</p> <p><b>Mixed-methods intervention development:</b> We produced the UK's first cessation practitioners' consensus on which behavioural techniques can best help pregnant women to stop smoking.<sup>7</sup></p> <p><b>Research to inform and evaluate policy:</b> With the National Offender Management Service (NOMS), in the first study of its kind, we showed that in English prisons, prisoner and staff exposure to second-hand tobacco smoke was extremely high.<sup>8</sup> We have also documented and publicised breaches of UK tobacco and alcohol advertising regulations, by highlighting examples</p>		

of delivery of tobacco and alcohol imagery to children and young adults, through product use and brand placement in UK broadcast and other media.<sup>9,10</sup>

### 3. References to the research (University of Nottingham UoA2 researchers in **bold**)

1. Royal College of Physicians reports: i) *Passive smoking and children* (2010, ISBN 978-1-86016-376-0); ii) *Smoking and mental health* (2013, ISBN 978-1-86016-508-5); iii) *Nicotine without smoke - tobacco harm reduction* (2016, ISBN 978-1-86016-600-6); iv) *Hiding in plain sight: Treating tobacco dependency in the NHS* (2018, ISBN 978-1-86016-731-7).  
<https://www.rcplondon.ac.uk> (**Britton J, Bogdanovica I, Coleman T, Huang Y, Hubbard RB, Leonardi-Bee J, Lewis S, McKeever TM, Murray RL, Langley TE, Szatkowski L, Tata LJ**)
2. **Coleman T, Cooper S, Thornton JG, Grainge MJ, Watts K, Britton J & Lewis S**, for the SNAP Trial Team. *A randomized trial of nicotine replacement therapy patches in pregnancy*. *New England Journal of Medicine*, 2012; 366(9):808-18. DOI: 10.1056/NEJMoa1109582
3. **Coleman T, Chamberlain C, Davey M-A, Cooper SE, Leonardi-Bee J**. Pharmacological interventions for promoting smoking cessation during pregnancy. *Cochrane Database of Systematic Reviews*. 2015(12):CD010078. <https://doi.org/10.1002/14651858.CD010078.pub2>  
NB: This citation is used to refer to all previous versions of this review; the first was published in 2012.
4. **Marufu TC, Ahankari A, Coleman T, Lewis S**. *Maternal smoking and the risk of still birth: systematic review and meta-analysis*. *BMC Public Health*, 2015;15:239. DOI:10.1186/s12889-015-1552-5
5. **Murray RL, Leonardi-Bee J, Marsh J, Jayes L, Li J, Parrott S, and Britton J**. *Systematic identification and treatment of smokers by hospital based cessation practitioners in a secondary care setting: cluster randomised controlled trial*. *BMJ*, 2013; 347: f4004. DOI: 10.1136/bmj.f4004
6. **Campbell KA, Cooper S, Fahy SJ, Bowker K, Leonardi-Bee J, McEwen A, Whitmore R, Coleman T**. *'Opt-out' referrals after identifying pregnant smokers using exhaled air carbon monoxide: impact on engagement with smoking cessation support*. *Tobacco Control*, 2017;26:300-6. DOI: 10.1136/tobaccocontrol-2015-052662
7. **Fergie L, Cooper S, Ussher M, Campbell K, Coleman T**. *Stop smoking practitioner consensus on barriers and facilitators to smoking cessation in pregnancy and how to address these: A modified Delphi survey*. *Addictive Behaviors Reports*, 2019; 29;9:100164. <https://doi.org/10.1016/j.abrep.2019.100164>
8. **Jayes LR, Ratschen E, Murray RL, Dymond-White S, and Britton J**. *Second-hand smoke in four English prisons: an air quality monitoring study*. *BMC Public Health*, 2016; 16: 1-8. DOI: 10.1186/s12889-016-2757-y
9. **Cranwell J, Murray R, Lewis S, Leonardi-Bee J, Dockrell M and Britton J**. *Adolescents' exposure to tobacco and alcohol content in YouTube music videos*. *Addiction*, 2015; 110(4), 703-711. DOI: 10.1111/add.12835
10. **Barker AB, Opazo Breton M, Cranwell J, Britton J, and Murray RL**. *Population exposure to smoking and tobacco branding in the UK reality show 'Love Island'*. *Tobacco Control*, 2018; 27:709-711. DOI: 10.1136/tobaccocontrol-2017-054125

### Grants

*UK Centre for Tobacco Control Studies*. Britton et al. UKCRC. Sept 08–Aug 13. £4,755,464  
*UK Centre for Tobacco and Alcohol Studies*. Britton et al. UKCRC. MR/K023195/1. Sept 13–Aug 18. £4,324,095  
*Smoking: new approaches to the cessation service delivery, prevention of passive smoke exposure in children, and healthcare cost estimation*. Britton et al. NIHR Programme Grant. RP-PG-0608-10020. Jan 10 – Jan 15. £2,002,012  
*Improving the effectiveness and reach of NHS support for smoking cessation in pregnancy*. Coleman et al. NIHR Programme Grant. RP-PG-0109-10020 Jan 11 – Jun 20. £1,909,060

### 4. Details of the impact (Superscript=section 3 references, upper case letter=evidence source)

Smoking is the largest avoidable cause of death and disability in the UK, typically reducing life expectancy by ten years. Our work has contributed to a reduction in UK smoking prevalence (from 18% in 2014 to 15% in 2018, equivalent to around 2,000,000 fewer smokers in 2018)

larger than in the USA and other rich countries, which has already helped to prevent thousands of premature deaths, cases of morbidity, hundreds of stillbirths and substantial NHS costs. Quitting smoking improves life expectancy, wellbeing, protects children and the unborn child, reduces poverty and improves productivity.

### PATHWAYS TO IMPACT

We work closely on evidence translation with the Tobacco Advisory Group of the RCP; the National Institute for Health and Care Excellence (NICE) (Britton chair of PH48 Guideline Development Group 2011-13; Chair of Public Health Advisory Committee (PHAC) D 2013-16; member of PH45 Guideline Group and Quality Standards Committee); the Medicines and Healthcare products Regulatory Agency (MHRA), on e-cigarette safety (Britton member of expert working group 2019-20); on policy advocacy with Action on Smoking and Health (Britton a Board member since 2000) and with the National Centre for Smoking Cessation Training (NCSCCT), co-producing research-informed clinician guidance and training.<sup>7</sup> Dissemination also occurs through Public Health England (PHE) via their Tobacco Control Implementation Board (Britton chair since 2014).

### IMPACT ON POLICY AND LEGISLATION

As described in detail below, and as acknowledged by PHE, our research in a range of policy areas has been extremely valuable in demonstrating policy effectiveness and hence ensuring both the adoption and maintenance of new policies. As described by the Tobacco Control Programme Lead for PHE “It is no exaggeration to say that [research at the University of Nottingham] has had a central role in shaping the tobacco control policy and practice changes promoted by Public Health England” [A]. These impacts include:

**The 2017 Tobacco Control Plan for England [B]:** This defines policies to reduce smoking prevalence in England and cites two RCP reports as evidence on harms to children, and on the need to help smokers with mental health problems to quit<sup>1.i,1.ii</sup> [B p10 & ref 31, p13 & ref 47]. It recommends screening for smoking in all women attending antenatal care with routine use of carbon monoxide monitors as part of a new NHS care bundle for reducing stillbirth [B p11], for which our work<sup>4</sup> was underpinning evidence [H.1 p13 & ref 7]. It further recommends automatic provision of cessation support for women identified as smokers, requiring women to ‘opt-out,’ citing our work in justification<sup>6</sup> [B p10 & ref 36, p30].

**The 2019 NHS Long Term Plan [C]:** This plan set out commitments for future NHS services and cited the 2018 RCP report, which demonstrated the impact of implementing tobacco dependency treatment in NHS services<sup>1.iv</sup>, with a statement that the recommended model will be adopted by the NHS [C p35 & ref 29] and thus influence future NHS tobacco dependency treatment. The Tobacco Control Programme Lead at PHE states that “The work of John Britton, who with other Nottingham colleagues led the publication of a series of systematic reviews and economic models supporting this approach in the 2018 Royal College of Physicians *Hiding in Plain Sight*<sup>1.iv</sup> report led directly to the adoption of this approach in the 2018 NHS Long Term Plan” [A]. From 2018, Britton advised senior NHS England staff on the design and costs of service provision [A].

**Tobacco harm reduction:** The use of electronic cigarettes to reduce tobacco-related harm through partial or complete substitution for smoking is controversial and has met strong opposition in the UK, USA, Australia, and other countries. However, the UK has adopted the internationally ground-breaking policy of promoting electronic cigarettes as a tobacco harm reduction strategy, a policy substantially underpinned by our research<sup>1.iii</sup> [A; D pp1, 4 & ref 2; E pp5, 7 & ref 4]. The Tobacco Control Programme Lead for PHE states that “The research and evidence synthesis carried out by the Nottingham group has been fundamental to the adoption and endorsement by PHE of vaping as a reduced harm substitute for smoking” [A]. The 2016 RCP report<sup>1.iii</sup> advocated promotion of electronic cigarettes to replace smoking and was quoted verbatim in the Introduction section of the 2018 House of Commons Science and Technology Committee report on e-cigarettes [E p5 & ref 4]. The UKCTAS submission to the Committee, led by Britton, which cites our research, commissioned by PHE and the RCP, was also quoted

verbatim [E pp7, 18] and cited extensively throughout the report [E], which concluded, as our reports and submissions advocated, that e-cigarette use should be promoted as a harm reduction strategy. The UK is now a world leader in encouraging vaping instead of smoking and has seen greater annual reductions in smoking prevalence than the USA (where vaping is not medically endorsed) or Australia (where vaping nicotine is prohibited).

**Smoking in English prisons:** Our 2015 report on indoor air quality for the National Offender Management Service (NOMS) (which was subsequently published as a peer-reviewed article<sup>8</sup>), demonstrated high levels of tobacco smoke exposure in prisons. This led to NOMS commissioning an independent organisation to repeat and corroborate our findings and to cite both sources as evidence to justify English prisons becoming smoke free since March 2016 [A, F.1, F.2a, F.2b].

**Legislation prohibiting smoking in cars carrying children:** The 2010 RCP report *Passive smoking in children*<sup>1.i</sup> was cited by the Department of Health in their consultation on this legislation [G p4 & ref 2], which was enacted in 2015.

### IMPACT ON NHS SMOKING CESSATION PRACTICE

**NHS stillbirth care bundle:** Our review of smoking in pregnancy and stillbirth risk<sup>4</sup> was underpinning evidence for the 2016 introduction of 'opt-out' smoking cessation provision as routine within NHS antenatal care (as a core element of the 'Saving Babies' Lives Care Bundle' for reducing stillbirth) [H.1 p13 & ref 7]. An independent 'care bundle' evaluation found that implementation across England resulted in a decrease of 20% in stillbirths per year (approximately 600 fewer) again citing our review [H.2 p34 & ref 17]. Our review was further cited as core rationale for reducing smoking in pregnancy in version two of the care bundle (2019), designed to reduce perinatal mortality [H.3 p24 & refs 25 & 27, p68].

**Changes in guidelines on NRT use globally:** In 2012, the World Health Organisation (WHO) asked us to share findings from our, then unpublished, Cochrane systematic review on NRT in pregnancy<sup>3</sup> which we were conducting. This featured prominently in WHO *Recommendations for the prevention and management of tobacco use and second-hand smoke exposure in pregnancy* [I.1] which concluded there was insufficient evidence for recommending NRT in pregnancy and called for further research. We updated the review with new trials and showed NRT is effective (published 2015).<sup>3</sup> The impact of this work continues; our updated review now justifies pregnant women's NRT use in European guidelines as well as those from the United Kingdom, Australia, New Zealand and Canada [I.2-8]. In the UK, in 2015 before the updated review was finalised, influenced by efficacy data from our major NRT trial<sup>2</sup>, NICE proposed an update to UK guidance on NRT in pregnancy [I.9]; this update is ongoing (due 2021).

**Design and delivery of smoking cessation support in secondary care settings:** Service design and costing proposals for cessation services, summarised in the 2018 RCP report<sup>1.iv</sup>, drawing on our 2013 trial<sup>5</sup> and similar models developed in Ottawa were cited in the 2018 NHS Long Term Plan [A, C p35 & ref 29]. Our work on provision of cessation services in mental health settings and the March 2013 RCP report *Smoking and mental health*<sup>1.ii</sup> were heavily cited in PHE implementation 2015 guidance for commissioners and providers of mental health services [J p7, refs 3&7]. Our Cochrane review of NRT in pregnancy<sup>3</sup> and NRT trial<sup>2</sup> feature prominently in two evidence reviews [K.1, K.2] for the Nov 2013 NICE guidance PH48 [K] and justify the recommendation to offer NRT to pregnant women who are unable to stop smoking with the aim of reducing cravings for cigarettes during hospital stays [K recommendation 6, p13].

**NHS health professional training and development of the first Standard Treatment Programme tailored to pregnant women:** Our impact on NHS training is detailed in the evidence letter from the Chief Executive of the National Centre for Smoking Cessation Training (NCSCT) [L.1]. Our consensus on how to support pregnant women to stop smoking<sup>7</sup>, produced in the Supporting Smokefree Pregnancies (SSP) project with the NCSCT, was used to formulate the first ever NHS Standard Treatment Programme (STP) for smoking in pregnancy [L.2] and to update NHS staff training for treating patients according to this [L.3]. NCSCT used emergent

project findings to underpin the STP and changed 3 NHS online training packages and a face-to-face training course by incorporating key consensus recommendations<sup>7</sup>. Before being permitted to support pregnant smokers, UK health professionals must successfully complete NCSCCT training modules or courses and follow the STP, hence, our work substantially underpins current NHS clinical practice. The Chief Executive of the NCSCCT states “The SSP project findings have substantially helped the NCSCCT to improve the quality of stop smoking support for pregnant women. [...] the NCSCCT guidance for standard treatments and interventions delivered to pregnant women have been significantly improved based on the evidence-base developed by the SSP project. [...] the SSP project findings will continue to impact on pregnant women who are helped to stop smoking by the NHS for years to come.” Training modules were revised by November 2018; before then, 33,751 NHS professionals had completed these and, by October 2020 10,208 had completed new versions [L.1]. Similarly, prior to course curriculum changes around 1,500 health professionals completed interpersonal training courses and between November 2018 and October 2020, 390 have done so [L.1].

**Standardised packaging and reducing smoking media imagery:** Our work demonstrating the presence of substantial tobacco imagery in television and music videos seen by young people<sup>9</sup> was quoted by Kevin Barron MP as a justification for standardised packaging in a Committee stage debate of the Draft Standardised Packaging of Tobacco Products Regulations 2015 [M p16], which was subsequently enacted in May 2016. Our study of smoking frequency in the 2017 ITV Love Island series<sup>10</sup> received widespread media attention and was presented to Ofcom in 2017. Subsequently, depiction of smoking was removed from the 2018 series [N.1, N.2].

#### Awards/prizes

Britton listed in [Health Services Journal top 100 clinical leaders for innovation](#), 2015

Coleman, 5-year Senior Investigator Award from National Institute for Health Research, 2017

#### 5. Sources to corroborate the impact

A) PHE letter of support from Tobacco Control Programme Lead, Public Health England, 2020

B) [Towards a Smokefree Generation: A Tobacco Control Plan for England. Department of Health, 2017](#)

C) [NHS Long Term Plan, 2019](#)

D) [E-cigarettes: a new foundation for evidence-based policy and practice. Public Health England, 2015](#)

E) [House of Commons Science and Technology Committee Report on E-cigarettes, 2018](#)

F) [Letter from Prisons Minister Andrew Selous to Robert Neill MP, Chairman of the Justice Select Committee regarding smoking in prisons, 2015 \(F.1\) \(Letter includes link to Air quality reports \(F.2a\), one of which is the 'Nottingham AQM Report,' our air quality monitoring study \(F.2b\)](#)

G) [Smoking in private vehicles carrying children: consultation doc. Department of Health, 2014](#)

H.1) [Saving Babies' Lives - A care bundle for reducing stillbirth, 2016](#)

H.2) [Evaluation of the implementation of the Saving Babies' Lives Care Bundle in early adopter NHS Trusts in England. University of Manchester, SPiRE and Tommy's, 2018 and \[press release\]\(#\)](#)

H.3) [Saving Babies' Lives Version 2 - A care bundle for reducing perinatal mortality, 2019](#)

I) International and national guidelines that include smoking cessation recommendations for NRT use in pregnancy, 2013-2018 (I.1-I.9 detailed within)

J) [Smoking cessation in secure mental health settings: Guidance for commissioners. PHE, 2015](#)

K) [Smoking: acute, maternity and mental health services. Public health guideline PH48, 2013 \(K.1;K.2\)](#)

L.1) NCSCCT Director Letter, 2020

L.2) [NCSCCT Standard Treatment Programme for Pregnant Women, 2019](#)

L.3) NCSCCT Supporting Smokefree Pregnancies (SSP) Project – Changes made to NCSCCT online training modules, face-to-face courses and resources, 2018

M) [Draft Standardised Packaging of Tobacco Products Regulations, 2015](#)

N) News articles documenting the removal of smoking from 'Love Island', 2018 ([N.1 Huffington Post](#), [N.2 The Guardian](#))