

Impact case study (REF3b)

Institution: University of Sheffield
Unit of Assessment: 15 General Engineering
Title of case study: The impact of the Sheffield Alcohol Policy Model on alcohol policy
<p>1. Summary of the impact</p> <p>The Sheffield Alcohol Policy Model (SAPM) makes a major contribution to national and international <i>debate on public policy and services</i>, focusing on policies aimed at reducing alcohol misuse in society.</p> <p>SAPM provides the core evidence underpinning Scottish Government plans to implement a minimum unit price (MUP) for alcohol and is cited in the Prime Minister's foreword to the 2012 UK Alcohol Strategy. The model's findings have influenced health policy debate in Australia, Canada, Ireland, New Zealand, Spain, Switzerland, and the European Commission.</p> <p>SAPM findings for the cost-effectiveness of a programme of identification and brief advice (IBA) in primary care underpin the National Institute for Health & Clinical Excellence guidance on this topic.</p>
<p>2. Underpinning research</p> <p>Robin Purshouse (RP) is a core member of the University of Sheffield alcohol policy research team (known as the Sheffield Alcohol Research Group – SARG) that developed the Sheffield Alcohol Policy Model. SAPM is a mathematical model that appraises the effectiveness and cost-effectiveness of alcohol policy options.</p> <p>The SAPM research programme is incremental and began in January 2008 when RP was a researcher in the School of Health and Related Research (SchARR). Projects during this time were funded by the UK Department of Health (DH), National Institute for Health and Care Excellence (NICE), and the Scottish Government (SG). RP was appointed lecturer in the Department of Automatic Control & Systems Engineering (ACSE) in February 2010 and has worked as a co-investigator and/or advisor to further projects funded by SG, MRC, ESRC, the Canadian Institute for Health Research, the UK National Institute for Health Research, and the European Union.</p> <p>SAPM development started in 2008 when the DH Policy Research Programme commissioned the University of Sheffield to perform an 'Independent Review of the Impact of Alcohol Pricing and Promotion'. The research scope included both a systematic review of the evidence base and a mathematical model for policy appraisal. RP worked closely with Alan Brennan (AB) and Petra Meier (PM) to understand the research questions of interest to policymakers and then to structure and parameterise a mathematical model that is able to answer those questions. The modelling and analysis is interdisciplinary, bringing together methods from systems engineering, econometrics (provided by Karl Taylor – KT), epidemiology, and health economics under a Markov framework. RP implemented the model as a software tool – the Sheffield Alcohol Policy Model (SAPM) – that could easily be used by analysts in DH. The research was published in peer-reviewed form as Purshouse et al. (2010) [R1].</p> <p>A Scottish adaptation of SAPM was commissioned by SG in 2009 to inform the policy process around the Alcohol etc. (Scotland) Act. RP led the adaptation, with implementation undertaken by Yang Meng (YM). Two revisions to the Scottish model were commissioned by SG in 2010 and 2012 to provide up-to-date results as MUP legislation progressed through the Scottish Parliament and finally the Scottish Court, with RP acting as advisor to both projects.</p> <p>RP is co-investigator on the £1m joint MRC and ESRC Interdisciplinary Alcohol Research Programme (IARP), started in 2010, to further develop SAPM. This programme has answered policymakers' questions about unintended policy consequences, including the effects of MUP for people on a low income, and improved understanding of the uncertainty around policy estimates. The first output from the programme is published as Meier et al. (2013) [R3], including research by RP into the effect on model outputs of a major class of parameter uncertainties (relating to baseline alcohol consumption estimates), without which the impact would be significantly reduced. RP is also advisor to an EU Framework 7-funded adaptation of the IBA components of SAPM to Italy,</p>

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Netherlands and Poland.

In 2012, RP produced new modelling results for a programme of identification and brief advice in primary care (screening patients for alcohol misuse and advising those screening positive to reduce their drinking), published in peer-reviewed form as Purshouse et al. (2013) [R2]. This research was a much-enhanced revision to a version of SAPM commissioned by NICE in 2009 to support the development of new guidance for the prevention of alcohol misuse.

A comprehensive overview of SAPM and how the research supports the UK policymaking process was recently published in peer-reviewed form as Brennan et al. (2013) [R4]. However an important task since publication of SAPM findings has been to defend the research against criticism in the public domain, outside of the normal peer-review process. RP has taken a lead in drafting scientific responses to criticism of the modelling in the public domain, including the Brennan et al. (2013) [R5] response to the 2013 critique by the Adam Smith Institute think tank.

Named researchers involved in the modelling: **ACSE: Robin Purshouse** (Feb 2010-present Lecturer); **SCHARR: Alan Brennan** (Professor of Health Economics and Decision Modelling, 2008-present), **Petra Meier** (Professor of Public Health, 2008-present), **Yang Meng** (Research Fellow, 2009-present), **Robin Purshouse** (Post-doctoral researcher, 2008-Jan 2010); **Economics: Karl Taylor** (Professor of Economics, 2008-2009).

3. References to the research

Key papers providing evidence of the quality of the underpinning research:

- R1. **Purshouse RC**, Meier PS, Brennan A, Taylor KB & Rafia R. (2010) 'Estimated effect of alcohol pricing policies on health and health economic outcomes in England: An epidemiological model', *The Lancet*, 375 (9723), pp.1355-64. doi: [10.1016/S0140-6736\(10\)60058-X](https://doi.org/10.1016/S0140-6736(10)60058-X)
- R2. **Purshouse RC**, Brennan A, Rafia R, Latimer NR, Archer RJ, Angus CR, Preston LR & Meier PS. (2013) 'Modelling the cost-effectiveness of alcohol screening and brief interventions in primary care in England', *Alcohol and Alcoholism*, 48 (2), pp. 180-188. doi: [10.1093/alcalc/ags103](https://doi.org/10.1093/alcalc/ags103)
- R3. Meier PS, Meng Y, Holmes J, Baumberg B, **Purshouse R**, Hill-McManus D & Brennan A. (2013) 'Adjusting for unrecorded consumption in survey and per capita sales data: Quantification of impact on gender- and age-specific alcohol-attributable fractions for oral and pharyngeal cancers in Great Britain', *Alcohol and Alcoholism*, 48 (2), pp. 241-249. doi: [10.1093/alcalc/agt001](https://doi.org/10.1093/alcalc/agt001)

Additional references:

- R4. Brennan A, Meier P, **Purshouse R**, Rafia R, Meng Y & Hill-MacManus D. (2013) 'Developing policy analytics for public health strategy and decisions – the Sheffield alcohol policy model framework', *Annals of Operational Research* doi: [10.1007/s10479-013-1451-z](https://doi.org/10.1007/s10479-013-1451-z)
- R5. Brennan A, **Purshouse R**, Holmes J, Meng Y. (2013) 'A public response to the Adam Smith Institute's critique of the Sheffield Alcohol Policy Model'. University of Sheffield.

4. Details of the impact

SAPM has played a substantial role in informing the UK and Scottish Governments' policy decisions to introduce MUP as a central feature of their alcohol strategies. The research has also played an important role in stimulating and advancing public debate in the UK and internationally. The Sheffield Alcohol Research Group's strategy for impact is one of on-going engagement with alcohol policy stakeholders, from developing policy-relevant research questions through to responding rapidly and flexibly to the demands of the policy debate. In this environment, impact is often occurring simultaneously with, or in anticipation of, publication of the underpinning research in peer-reviewed journals.

Our research has informed policy decisions

Scotland: 2009: In February 2009 the Scottish Government's alcohol strategy used evidence from the English SAPM to support its decision to pursue establishing an MUP. It commissioned a Scottish model adaptation, and SARG provided a results briefing to the Scottish Ministerial

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Advisory Committee on Alcohol. **2010:** We were invited as expert witnesses in the Alcohol Bill (Scotland) enquiry, Scottish Parliament Health and Sport Committee. A first attempt at minimum pricing legislation failed in Parliament. **2011:** The majority SNP Government came to power and introduced fresh MUP legislation. In the bill's explanatory notes [S1], SAPM results feature on 13 of 24 pages. **2012:** We made a further appearance at the Scottish Parliament Health and Sport Committee and our work is referenced in the Committee's report [S2]. In May, the Alcohol (Minimum Pricing) (Scotland) Act 2012 was passed and a legal challenge was brought by the Scotch Whisky Association (SWA), which in part centred on a critique of the underlying evidence. A rebuttal by the Scottish Government used updated SAPM results. **2013:** SARG submitted an expert witness report as part of the court process. The Court of Session dismissed the legal challenge, and SAPM evidence was referred to by the judge to reject claims of a poorly-targeted policy [S3].

Our research has stimulated, and had significant influence on, policy debate

England: **2008:** Evidence briefings were invited by policymakers in DH and Prime Minister's Special Advisors at No 10, and the UK Chief Medical Officer (CMO). **2009:** The CMO's Annual Report cited SAPM findings and lobbied strongly for introducing a minimum unit price [S4]. SARG gave oral evidence to the House of Commons Health Select Committee, with SAPM estimates cited in the final report [S5]. **2010:** Our research findings were used directly by NICE in making recommendations for minimum unit pricing. SARG gave a briefing to senior Westminster civil servants from the Cabinet Office, Treasury, Department of Health, Home Office, Department of Culture, Media and Sports, Department for Children, Schools and Families and the Department of Environment, Food and Rural Affairs. **2011:** SARG was invited to a UK Government Engagement Workshop to discuss the developing Alcohol Strategy. **2012:** The UK Government's 2012 Alcohol Strategy included a commitment to introducing MUP, and SAPM findings were cited by the Prime Minister in his foreword to the document [S6]. A House of Commons Health Select Committee 2012 report on the alcohol strategy noted "The debate so far [on MUP] is based almost entirely on the work of the Sheffield Alcohol Research Group" [S7]. SAPM results were cited prominently by a range of bodies engaging in public debate on alcohol policy, including the British Medical Association, Alcohol Concern [S8] and the Alcohol Health Alliance (which includes the Royal Colleges of Physicians, General Practitioners, Nursing and Psychiatrists as well as Cancer Research UK). Policy opponents also acknowledged the impact of our research; for example, The Wine and Spirits Trade Association described our team as "The scientists behind the Government's policy" on their anti-MUP campaign website. **2013:** A free-market think tank published a report based on the critique of SAPM commissioned by the SWA, with the resultant media coverage requiring SARG to publish a rebuttal.

The Impact Assessment accompanying the Government consultation on the alcohol strategy drew heavily on IARP results and SARG engaged with the Home Office and DH to analyse the effect of MUP for people on a low income. In July 2013, the UK Government replaced the MUP commitment with an alternative floor price defined as the level of alcohol duty attracted by a product, inclusive of VAT. According to ministers, MUP remains under consideration as a future policy.

International: We have given invited briefings at a EU Commission Advisory Meeting on Alcohol Cost Benefit Analysis, the European Presidency Expert Meeting on Alcohol and Health, a meeting of the European Commission DG Health and Consumers Committee on National Alcohol Policy and Action (CNAPA) and to the senior civil servants of the National Australian Government, the Western Australian Health Committee, and other international bodies leading to our results being cited in policy debate by, amongst others, the Australian National Preventive Health Agency, Canadian Public Health Association, Irish Department of Health, the New Zealand Law Commission, and World Health Organisation [S9].

Our research has stimulated and informed public debate

Our research has generated substantial media interest and the research team continue to work to advance public debate through regular appearances across all major UK print and broadcast media from 2009 to 2013.

Examples of public exposure to the issues around alcohol minimum pricing and its effects are

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evident from our engagement with flagship radio and television programmes, e.g. BBC 10 O'Clock News (27/09/2009, 28/9/2009, 23/3/2012), Question Time (26/05/2011), Panorama (28/09/2012), Daily Politics (23/03/2012) and BBC Radio 4's Today programme (18/01/2011) and You and Yours (08/06/2010). There has been extensive newspaper coverage on numerous occasions, e.g. The Financial Times (28/09/2009), The Guardian (15/05/2009, 13/10/2009, 30/4/2013), The Independent (03/05/2009), The Scotsman (9/9/2009) and The Daily Telegraph (14/5/2009, 24/03/2010). SARG researchers were also invited to contribute an article on MUP to the New Scientist and were panel speakers at a Science Media Centre background briefing on MUP for national media (29/01/2013).

Our research has improved patient health outcomes via changes to healthcare guidelines

Our findings were used directly by NICE in making recommendations in June 2010 for minimum pricing and also programmes of identification and brief advice.

SAPM modelling evidence statements underpin five of the eleven recommendations in the NICE guidance [S10].

5. Sources to corroborate the impact

Sources corroborating the impact of the research on the decision to introduce a policy of minimum unit pricing for alcohol in Scotland:

- S1. Alcohol (Minimum Pricing) (Scotland) Bill: Explanatory notes (2011) (SP Bill 4-EN). (<http://tinyurl.com/7ocok8i>) e.g. refs 23, 24, 41 show that SAPM evidence is central to the Scottish Government case for MUP legislation.
- S2. Health and Sport Committee (2012) 'Stage 1 Report on the Alcohol (Minimum Pricing) (Scotland) Bill', (SP 2012, 83). SAPM results are referenced in the Committee's report.
- S3. Scottish Court of Session Judgement 2013. Shows that SAPM evidence was referred to by the judge to reject petitioners' claims of a poorly-targeted policy.

Sources corroborating the impact of the research on the minimum unit pricing policy debate in England:

- S4. Department of Health (2009) 'Annual Report 2008 of the Chief Medical Officer', London: DH Publications. Shows that the CMO's report cited SAPM findings when lobbying strongly for introduction of MUP (page 22-23)
- S5. Health Select Committee (2009) 'Alcohol', (HC 2009-10, 151-I). Shows that the House of Commons Health Select Committee's final report on alcohol cites SAPM estimates.
- S6. HM Government (2012) 'The Government's Alcohol Strategy' (Cm 8336), London: TSO. (<http://tinyurl.com/or4j74f>) shows that SAPM evidence was referred to in the Prime Minister's foreword to the Coalition Government's Alcohol Strategy 2012 (page 2).
- S7. Health Select Committee (2012) 'Government's Alcohol Strategy', (HC 2012-13, 132). (<http://tinyurl.com/opezyku>) paragraph 58.
- S8. Alcohol Concern (2012) 'Alcohol Concern's response to the Health Select Committee's inquiry into the Government's Alcohol Strategy May 2012', e.g. page 4. Indicative of references to SAPM estimates by a range of bodies engaging in public debate on alcohol policy.

Source corroborating the impact of the research on the international debate around pricing policies for alcohol:

- S9. World Health Organisation (2012) 'Alcohol in the European Union: Consumption, harm and policy approaches' (<http://tinyurl.com/knf5ilt>) (Purshouse reference page 110). Indicates that SAPM results are of policy relevance beyond the UK.

Source corroborating the impact of the research on the development of public health guidance in England & Wales:

- S10. National Institute for Health and Clinical Excellence (2010) 'Alcohol-use disorders: preventing the development of hazardous and harmful drinking', NICE public health guidance 24, pages 67-68 (<http://www.nice.org.uk/nicemedia/live/13001/48984/48984.pdf>) confirms that SAPM modelling evidence statements underpin 5 of the 11 recommendations in the NICE guidance.