Impact case study (REF3b)

Institution: University of Sheffield
Unit of Assessment: 2 - Public Health, Health Services and Primary Care
Title of case study: The impact of the Sheffield Alcohol Policy Model on alcohol policy

1. Summary of the impact
The Sheffield Alcohol Policy Model (SAPM) has made a major contribution to national and international *debate* on *public policy* and *services* focusing on reducing alcohol misuse in society. SAPM provides the core evidence underpinning Scottish Government plans to implement minimum unit pricing (MUP) and is cited in the UK Prime Minister's foreword to the 2012 UK Alcohol Strategy. Findings have influenced health policy debate in Australia, Canada, Ireland, New Zealand, Spain, Switzerland, and the European Commission. SAPM estimates for the cost-effectiveness of brief intervention programmes in primary care underpin the National Institute for Health & Clinical Excellence guidance on this topic.

2. Underpinning research
Key researchers and periods of involvement: Prof **Petra Meier** (ScHARR, 2008-, project lead public health), Prof **Alan Brennan** (ScHARR, 2008-, project lead modelling), Dr **Andrew Booth** (ScHARR, 2008-10, systematic reviews), Dr **John Holmes** (ScHARR, 2010-, public health), Dr **Ravi Maheswaran** (ScHARR, 2010-, geographical information systems), Dr **Yang Meng** (ScHARR, 2009-, modeller), Dr **Robin Purshouse** (ScHARR 2008-10, Automatic Control and Systems Engineering 2010-, modeller), Prof **Karl Taylor** (Economics, 2008, econometrics). **Funders**: The programme of work has to date been funded by the UK Department of Health (DH), Home Office (HO), National Institute for Health and Care Excellence (NICE), Medical Research Council (MRC), Economic and Social Research Council (ESRC), the Scottish Government (SG), National Institute for Health Research (NIHR), the Canadian Institute for Health Research (CIHR), the Northern Ireland Department of Health, Social Services and Public Safety and the EU Framework 7 programme. **What was involved:** SAPM is a mathematical model which estimates the impact of a given alcohol policy on levels of drinking and associated harm, giving detailed information on the policy's effect on health, crime and workplace harms and associated public sector costs [R1]. The model first uses econometric methods to link changes in alcohol price to changes in consumption, and then epidemiological modelling to link changes in consumption to changes in harm [R2]. A strength of SAPM is its capability to consider policy effects on population subgroups, by drinking level, age, gender and income [R3]. Key methodological work involved the integration of disparate evidence sources, including data from cohort studies, surveys, administrative data and the published literature, and accounting for underlying time trends in consumption and harm [R4, R5]. Several international adaptations were undertaken. The interdisciplinary team uses methods from epidemiology, systematic reviewing, systems engineering, econometrics, and health economics. **Main findings:** The model's most prominent use has been to estimate the potential impact of different minimum unit pricing policies (MUP) for alcohol which had not previously been subject to empirical analysis [R1]. These policies link alcoholic beverage prices to their ethanol content by setting a floor price below which a unit of alcohol cannot be sold. 1) Introducing a 50p minimum unit price in England would lead to 15,000 fewer alcohol-related deaths and 480,000 fewer alcohol-related hospital admissions over the first ten years of the policy. 2) This is associated with a £1.6bn saving over that period in direct costs to the health service and a £9.7bn saving across all outcomes.

3) Minimum unit pricing is well-targeted: it reduces consumption and harm by heavy drinkers, but has only minor effects on those who drink within government guidelines.

4) Minimum unit pricing has difficult equity implications: the poorest heavy drinkers reduce their consumption more than more affluent heavy drinkers, but most of the health gains are also experienced by this group.

The model was also used to provide evidence for the cost-effectiveness of screening and brief intervention programmes for alcohol users in primary care [R6].

3. References to the 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

R2. 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

R3. Meier PS, Brennan A, Purshouse R. (2010). 'Policy options for alcohol price regulation: the importance of modelling population heterogeneity', Addiction, 105 (3), pp.383-93. doi: 10.1111/j.1360-0443.2009.02721.x

R4. Holmes J, Meier PS, Booth A, Guo Y, & Brennan A (2012). The temporal relationship between per capita alcohol consumption and harm: A systematic review of time lag specifications in aggregate time series analyses. Drug and Alcohol Dependence, 123(1-3), 7-14. doi: 10.1016/j.drugalcdep.2011.12.005

R5. Meng Y, Holmes J, Hill-McManus D, Brennan A & Meier PS (2013). Trend analysis and modelling of gender-specific age, period and birth cohort effects on alcohol abstention and consumption level for drinkers in Great Britain using the General Lifestyle Survey 1984-2009. Addiction doi: 10.1111/add.12330

R6. Purshouse RC, Brennan A, Rafia R, Latimer NR, Archer RJ, Angus CR, Preston LR & Meier PS. (2012). 'Modelling the cost-effectiveness of alcohol screening and brief interventions in primary care in England', Alcohol and Alcoholism, 48 (2), 180-8. doi: 10.1093/alcalc/ags103

4. Details of the impact

The Sheffield Alcohol Research Group (SARG)'s strategy for impact is one of on-going engagement with policy stakeholders, from developing policy-relevant research questions through to responding rapidly and flexibly to the timescales of the policy debate.

SAPM has played a central role in informing the UK and Scottish Governments' policy decisions to introduce minimum unit pricing (MUP) as a central feature of their alcohol strategies. The research has also stimulated and advanced public debate in the UK and internationally.

Our research has been central to policy decisions:

Scotland. **2009:** The Scottish Government used English SAPM results to support its decision to pursue MUP policies and commissioned a Scottish model adaptation. Results were presented to the Scottish Ministerial Advisory Committee on Alcohol. **2010:** We served as expert witnesses in the Alcohol Bill (Scotland) enquiry, Scottish Parliament Health and Sport Committee. Also in 2010, a first attempt at MUP legislation failed in Parliament. **2011:** The new majority SNP Government introduced fresh MUP legislation. In the bill's explanatory notes [S1], SAPM results feature on 13 of 24 pages. **2012:** We appeared before the Scottish Parliament Health and Sport Committee and SAPM results were referenced in the Committee's report [S2]. The Alcohol (Minimum Pricing) (Scotland) Act 2012 was passed. A legal challenge by the Scotch Whisky Association centred, in

part, on a critique of the evidence. A Scottish Government rebuttal used SAPM results. **2013:** SARG submitted an expert witness report to the Court of Session, which dismissed the legal challenge. SAPM evidence was referred to by the judge to reject claims of a poorly-targeted policy [S3].

Our research has stimulated and informed policy debate:

England. **2008:** Evidence briefings were invited by policymakers in the Department of Health, by the Prime Minister's Special Advisors at No 10, and by the Chief Medical Officer (CMO). **2009:** The latter influenced the CMO's Annual Report, which cites SAPM findings and lobbies strongly for a MUP [S4]. SARG also gave oral evidence to the House of Commons Health Select Committee, and SAPM estimates are cited in the final report [S5]. **2010:** SAPM findings were used directly by NICE in recommending MUP. SARG briefed senior Westminster civil servants from the Cabinet Office, Treasury, Department of Health, Home Office, DCMS, DCSF, and DEFRA. **2011:** SARG was invited to a Government Engagement Workshop to discuss the draft Alcohol Strategy. **2012:** The Alcohol Strategy 2012 included a commitment to introducing MUP, and SAPM findings were cited by the Prime Minister in his foreword [S6]. A 2012 House of Commons Health Select Committee report noted "The debate so far is based almost entirely on the work of the Sheffield Alcohol Research Group" [S7]. SAPM results have been 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, Cancer Research UK). **2013:** The Impact Assessment accompanying the Government's consultation on the Alcohol Strategy drew heavily on SAPM results. In response to stakeholder engagement with the Home Office and Department of Health SARG published new evidence on the equality aspects of MUP. SARG also published rebuttals to several industry-funded reports critiquing SAPM. In July, the UK Government replaced the MUP commitment with an alternative floor price (level of alcohol duty attracted by a product, inclusive of VAT). According to ministers, MUP remains under consideration as a future policy.

The research team have worked to advance public debate thorough regular appearances across all major UK print and broadcast media from 2009 to 2013. Examples of public exposure to the issues around alcohol MUP and its effects are evident from our engagement with flagship radio and television programmes, e.g. BBC 10 o'clock news (27/09/2009, 28/09/2009, 23/03/2012), Question Time (26/05/2011), Panorama (28/09/2012), Daily Politics (23/03/2012), BBC Radio 4 Today programme (18/01/2011) and You & Yours (08/06/2010). There has been extensive newspaper coverage, e.g. Financial Times (28/09/2009), Guardian (15/05/2009, 13/10/2009, 30/04/2013), Independent (03/05/2009), Scotsman (09/09/2009) and Daily Telegraph (14/05/2009, 24/03/2010). An article on MUP was also invited by the New Scientist.

International. SARG have given invited briefings to the: EU Commission Advisory Meeting on Alcohol Cost Benefit Analysis, European Presidency Expert Meeting on Alcohol and Health, European Commission DG Health and Consumers, and to senior civil servants of the National Australian Government and the Western Australian Health Committee. SAPM results are 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 informed national 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

S1. Alcohol (Minimum Pricing) (Scotland) Bill: Explanatory notes (2011) (SP Bill 4-EN), Edinburgh: OPQS. pp. 4, 6-9, 19**.** This corroborates that ScHARR/SAPM evidence is central to the SNP Government's case for its MUP legislation.

S2. Health and Sport Committee (2012) 'Stage 1 Report on the Alcohol (Minimum Pricing) (Scotland) Bill', (SP 2012, 83) shows that SAPM results are referenced in the Committee's report.

S3. The Scottish Court of Session Judgement 2013 (para 72) corroborates that SAPM evidence was referred to by the judge to reject claims of a poorly-targeted policy.

S4. Department of Health (2009) 'Annual Report 2008 of the Chief Medical Officer', London: DH Publications, pp 21-22, shows that the CMO's report cited SAPM findings and lobbied strongly for a MUP.

S5. Health Select Committee (2009) 'Alcohol', (HC 2009-10, 121-I), pp. 12, 39, 69, 77, 96-97, 105-113, 115; corroborates 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, p. 2; shows that SAPM evidence was referred to in the PM's foreword of the Government's Alcohol Strategy 2012.

S7. Health Select Committee (2012) 'Government's Alcohol Strategy', (HC 2012-13, 132), pp. 20-22. This report contains the statement that "The debate so far is based almost entirely on the work of the Sheffield Alcohol Research Group".

S8. Alcohol Concern (2012) 'Alcohol Concern's response to the Health Select Committee's inquiry into the Government's Alcohol Strategy May 2012' (pp. 2-3) is indicative of references to SAPM estimates by a range of bodies engaging in public debate on alcohol policy.

S9. World Health Organisation (2012) 'Alcohol in the European Union: Consumption, harm and policy approaches', Copenhagen: WHO Regional Office for Europe (pp. 99, 108-9) corroborates that SAPM results are of policy relevance beyond the UK

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, London: NICE. This corroborates the claim that SAPM modelling evidence statements underpin five of the eleven recommendations in the NICE guidance.