Health behaviour change: do we know what works and is this being implemented in Scotland?

Symposium held on 12 March 2009 at the Royal College of Physicians of Edinburgh

OVERVIEW OF LESSONS FOR SMOKING POLICY FROM INTERNATIONAL EXPERIENCE IN SMOKING CONTROL STRATEGIES

Prof. Robert West, Professor of Health Psychology, Cancer Research UK Health Behaviour Research Centre, Department of Epidemiology and Public Health, University College London, UK
Email robertwest100@gmail.com

The goal of tobacco control is to reduce the harm caused by tobacco use. This mostly involves reducing participation in tobacco use and, given that the vast majority of the harm is caused by smoking, involves attempting to reduce smoking uptake and increase cessation. Policies aimed at producing behaviour change can be classified according to the EPICURE acronym: Education (increasing awareness and understanding), Persuasion (changing attitudes), Inducement (offering incentives), Coercion (providing disincentives), Upskilling (improving capacity), Regulation (establishing rules regarding use, access and promotion) and Empowerment (reducing barriers).[1] The field of tobacco control can offer examples of good practice in all these areas and the key interventions are embodied in the WHO Framework Convention on Tobacco Control.[2]

Education plays a key role in circumstances where there is little understanding of the health risks or how to address them. This is less of an issue in countries such as Scotland, but pockets of ignorance probably remain, for example concerning the lasting damage to offspring caused by smoking during pregnancy. Persuasion continues to have a demonstrable role in the form of mass media campaigns directed at triggering quit attempts and promoting the use of effective methods of cessation. It may also play a role in 'denormalisation'. Inducements have been used to limited effect in the form of quit-and-win competitions and, more recently, incentives to stop smoking during pregnancy.

Coercion, by raising price, is probably the method with the strongest track record, the price elasticity for consumption being estimated at –0.4 internationally. More draconian measures may one day be possible: we have found almost 50% support for a total ban on sales of tobacco in England. Upskilling has a limited track record in tobacco control, being directed mainly at developing social skills to withstand the social pressure to smoke. Regulation can play an important role, including the minimum age of purchase, advertising bans and, more recently, bans on smoking in indoor public areas. Finally, empowerment is playing a crucial role with the development of more effective treatments for nicotine dependence that make it easier for smokers to stop if they want to. Combining types of intervention in community campaigns at the local level can have an impact over and above national policies.

Tobacco control worldwide has used the full panoply of behaviour change policies with considerable effect in many countries. The precise blend that will be most effective in a given country will depend on the profile of that country with regard to current levels of awareness of harms, social norms and the willingness to accept more coercive measures. In a country such as Scotland, the following additional measures would appear to merit serious consideration: raising the price to smokers (through UK government action to increase taxes and reduce smuggling), improving the effectiveness and reach of treatments for nicotine dependence, increasing media spend on campaigns directed at triggering cessation attempts and concerted community campaigns targeting areas of high prevalence.

References

1 West R. Tobacco control: present and future. *Br Med Bull* 2006;77–78:123–36.
2 World Health Organization. *WHO report on the global tobacco epidemic, 2008: the MPower package*. Geneva: WHO; 2008.

Sponsor: Cancer Research UK.
Declaration of interests: Dr West undertakes consultancy and research for manufacturers of smoking cessation medications, including Pfizer, GSK, Sanofi-Aventis, NABI and J&J.

TURNING POLICY IDEAS INTO A LEGISLATIVE PROGRAMME: EXPERIENCE FROM THE SMOKING BAN AND THE LESSONS FOR OTHER POLICY AREAS

Mary Cuthbert, Head of Tobacco Policy Branch, Scottish Government, CMO and Public Health Directorate, Edinburgh, UK
Email mary.cuthbert@scotland.gsi.gov.uk

On 26 March 2006 Scotland became the first part of the UK to introduce a comprehensive ban on smoking in public places under the provisions of the Smoking, Health & Social Care (Scotland) Act 2005. It is now illegal to smoke in most public places and workplaces in Scotland. There are a few exemptions to the law, but these include designated rooms in hotels, adult care

homes and psychiatric hospitals and units. Implementation of the law has been extremely smooth, with increasing levels of public support and positive indications about the health benefits which have been achieved.

The smoke-free laws are widely regarded as one of the most important public health measures since the foundation of the NHS and as an example of excellence in the development and delivery of public policy.

The presentation charts the process through which the legislation was developed and implemented. It outlines the strategic framework, the consultation and evidence-gathering process which underpinned the decision by Scottish Ministers to legislate, the programme of activity to build support for and compliance with the legislation; and the monitoring and evaluation programme put in place to assess its impact. It concludes by highlighting the key lessons learned, including the importance of a strong Scotland-specific evidence-base, comprehensive stake-holder and public engagement, partnership working with key stakeholders and relevant interests at the national and local level, engaging with challenging external views,selling the policy effectively, and a co-ordinated compliance-building programme.

Declaration of interests: None declared.

A REVIEW OF EVIDENCE OF THE EFFECTIVENESS OF INTERVENTIONS AND POLICY OPTIONS FOR IMPROVING LEVELS OF PHYSICAL ACTIVITY

Dr David Ogilvie, Clinical Investigator Scientist and Consultant Public Health Physician, MRC Epidemiology Unit, Cambridge, UK
Email david.ogilvie@mrc-epid.cam.ac.uk

The latest evidence-based guidance confirms that a low level of physical activity increases the risk of numerous chronic diseases, and that 30–60 minutes per day of moderate- to vigorous-intensity physical activity on five or more days per week confers substantial health benefits. Most adults in Scotland do not achieve this.

Systematic reviews of trials suggest that a variety of approaches can be effective in encouraging targeted individuals to become more active, particularly when follow-up and booster strategies are used to help maintain initial changes. The limited available evidence from economic evaluations suggests that these interventions are also likely to be cost-effective. However, questions remain about the generalisability of the effects observed in trials and their impact on health inequalities.

Taking action at multiple levels (individual, family, social, institutional, environmental and policy) may be a more promising strategy for increasing physical activity in the population as a whole, but evidence for the effectiveness of environmental and policy measures is harder to come by and depends on coherent intersectoral policymaking to produce changes of the scale and quality likely to be required.

Most people would benefit from being more physically active. Effective individual behaviour change interventions are available, but these may be insufficient to shift the overall population distribution of physical activity. The true population impact of most environmental and policy measures remains to be discovered.

Further reading

- Physical Activity Guidelines Advisory Committee. *Physical Activity Guidelines Advisory Committee report, 2008*. Washington, DC: US Department of Health and Human Services; 2008.
- Foster C, Hillsdon M, Thorogood M. Interventions for promoting physical activity. *Cochrane Database Syst Rev* 2005; 1:CD003180.
- Van Sluijs E, McMinn A, Griffin S. Effectiveness of interventions to promote physical activity in children and adolescents: systematic review of controlled trials. *BMJ* 2007; 335:703–7.
- Müller-Riemenschneider F, Reinhold T, Nocon M et al. Long-term effectiveness of interventions promoting physical activity: a systematic review. *Prev Med* 2008; 47:354–68.
- Müller-Riemenschneider F, Reinhold T, Willich S. Cost-effectiveness of interventions promoting physical activity. *Br J Sports Med* 2009; 43:70–6.
- Ogilvie D, Foster C, Rothnie H et al. Interventions to promote walking: systematic review. *BMJ* 2007; 334:1204–14.
- National Institute for Health and Clinical Excellence. *Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling*. London: NICE; 2006.
- National Institute for Health and Clinical Excellence. *Physical activity and the environment*. London: NICE; 2008.
- National Institute for Health and Clinical Excellence. *Promoting physical activity in the workplace*. London: NICE; 2008.
- National Institute for Health and Clinical Excellence. *Promoting physical activity for children and young people*. London: NICE; 2009.

Declaration of interests: None declared.

FORESIGHT OBESITY PROJECT

Dr Susan Jebb, Head of Nutrition and Health Research, MRC Human Nutrition Research, Cambridge, UK
Email susan.jebb@mrc-hnr.cam.ac.uk

The Foresight programme is the UK Government's horizon-scanning exercise led by the Government Chief Scientist, which is intended to provide challenging visions of the future to ensure effective strategies now (www.foresight.gov.uk). Launched in October 2007, 'Tackling Obesities: Future Choices' aimed to inform a sustainable response to obesity in the UK over the next 40 years. This presentation summarises the findings from three complementary workstreams:

1. An obesity system map, drawing on a comprehensive review of the scientific evidence of the determinants of obesity.
2. Quantitative modelling of the trends in obesity and the associated health consequences.

3. Qualitative scenarios of the future that examine the likely impact of current trends and/or targeted interventions on the prevalence of obesity.

The presentation then draws together the implications of the findings of this work for policy and practice, and sets out the Foresight framework for a comprehensive obesity strategy. Finally it illustrates how the Foresight analysis has informed the development of the cross-government strategy 'Healthy Weight, Healthy Lives'.

Declaration of interests: Dr Jebb was a Scientific Advisor to the Foresight Obesity project

PROMOTING HEALTH BEHAVIOUR CHANGE IN HARDER-TO-REACH AND DISADVANTAGED GROUPS

Dr Graham Watt, Norie Miller Professor of General Practice, General Practice and Primary Care, University of Glasgow, UK
Email gcmw1j@clinmed.gla.ac.uk

'Hard to reach' is a new buzzword, but 'hard to reach' by whom, and for what? Population screening (for example, for colorectal cancer) and most of the research literature is based on the 60–70% of people who can be persuaded to take part, which compares poorly with the coverage rates of up to 90% over five years achieved by routine general practice, and the 90% coverage rates required within one year for over half of the 62 Quality and Outcomes Framework (QOF) targets. Although such coverage rates are also linked to high levels of continuity, flexibility and public trust, they remain an underutilised resource for public health.

More than 50% of general practices take part on two or more voluntary activities, such as teaching, training, research, enhanced IT or service development, while 18% of practices take part in none, and achieve fewer QOF points. The inverse care law is part, but not all, of the explanation.

Perhaps 'hard-to-reach' practices are a more important target for public health than 'hard-to-reach' patients, in which case there are important cultural bridges to cross. While most health policies, research strategies and provider-led initiatives reflect 'vertical' views of the world, based on specific issues and topics, and ignore people with multiple problems, the world of primary care works horizontally, integrating at the level of consultations, surgeries, practices and communities. Better integration of vertical and horizontal approaches would be well worth reaching for, although the behavioural change might be hard for some.

Declaration of interests: None declared.

TRANSFERRING KNOWLEDGE INTO ACTION: LESSONS FOR SCOTLAND FROM CANADA AND THE ROLE OF THE SCPHRP

Dr John Frank, Director, Scottish Collaboration for Public Health Research and Policy (SCPHRP); Chair, Public Health Research and Policy, University of Edinburgh, UK
Email John.Frank@hgu.mrc.ac.uk

Enthusiasm is currently widespread, especially in health research funding agencies, for 'knowledge transfer' or 'translation'. In the fields of public health and health services research (above the level of individual clinician behaviour) this challenge is particularly problematic, since the 'decision-makers' whom researchers would ideally like to influence in their daily policy, programme and practice work are largely employed in complex systems of institutions, where the use of research evidence is variably embedded in decision-making processes.

Nonetheless, over some 17 years of experience in Canada, the author has gleaned some 'best practices' in this field. He reviews these, reflecting on lessons learned in four leadership positions in Canadian public health research since 1991, and distils the key messages he now brings to his new work directing the SCPHRP. The rationale and approach of the Collaboration are outlined, and the preliminary results presented of its initial Scotland-wide planning workshop held in January 2009, to select one or two 'promising but unproven' categories of policy or programme interventions, at each life-course stage, that could equitably improve Scottish health status. These intervention categories are now being taken forward by mixed working groups, which will develop them into Scottish-adapted policies and programmes for testing in properly designed, large-scale experimental effectiveness studies over the coming years.

Declaration of interests: None declared.

INDIVIDUAL AND POPULATION-BASED INTERVENTIONS TO CHANGE LIFESTYLE BEHAVIOURS: UNDERLYING PRINCIPLES AND THEORY

Prof. Marie Johnston, Professor of Psychology, University of Aberdeen, UK
Email m.johnston@abdn.ac.uk

This presentation describes the current theory of behaviour and behaviour change and the principles of behaviour change intervention in the context of health behaviours.

Theories of motivation are successful at predicting intentions regarding lifestyle behaviours, but less effective in predicting actual behaviour. Prediction is improved by taking account of self-regulatory processes that control

actual behaviour and so reduce the intention–behaviour gap. These theories identify the proximal determinants of behaviour and therefore identify targets for intervention. However, few theories specify how to change behaviour.

Theories of behaviour change suggest that interventions may be directed at changing the environment, rewards and sanctions, attitudes or individuals' self-regulatory skills. All of these methods have some evidence of success but might be more effective if better informed by the science of behaviour change.

Recent developments in classifying behaviour change techniques (BCTs) have led to more reliable methods of data synthesis in systematic reviews of behaviour change interventions. Evidence from reviews of healthy eating and physical activity interventions suggests that interventions have in general been successful and that BCTs based on self-regulation/control theory are effective, but evidence is sparse. There is no convincing evidence that the method of delivery (e.g. individual, group, workplace, community) of the intervention affects the success of BCTs.

On the basis of current evidence, interventions are likely to be more effective in changing behaviour if persuasive communications are directed at enhancing intentions to change, and behaviour change interventions use BCTs based on control theory, regardless of the mode or level of delivery. However, reports of behaviour change interventions tend to give too little detail for replication or for reliable synthesis of evidence to indicate what is effective and what should be implemented. Further research evidence is required from well-controlled evaluations of interventions that adequately specify and report the BCTs used, the modes of delivery and the theoretical basis of the intervention.

Further reading

- Abraham CA, Michie S. A taxonomy of behavior change techniques used in interventions. *Health Psychol* 2008; 27:379–87.
- Hardeman W, Sutton S, Griffin S et al. A causal modelling approach to the development of theory-based behaviour change programmes for trial evaluation. *Health Educ Res* 2005; 2:676–87.
- Webb TL, Sheeran P. Does changing behavioural intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychol Bull* 2006; 132:249–68.

Declaration of interests: None declared.

ALCOHOL INTAKE: REVIEW OF EVIDENCE OF THE EFFECTIVENESS OF INTERVENTIONS AND POLICY OPTIONS

Prof. Anne Ludbrook, Theme Leader Health Behaviours, Health Economics Research Unit (HERU), University of Aberdeen, UK
Email a.ludbrook@abdn.ac.uk

Excessive alcohol consumption is a major public health problem in Scotland. Recent reports have documented the rising trends in alcohol-related deaths and hospital admissions. The social costs also encompass other areas such as criminal justice, employment and productivity. The social costs of alcohol misuse in Scotland have been estimated at £2.25 billion per annum,[1] equivalent to £19.25 per household per week.

This presentation provides an overview of evidence relating to the effectiveness and cost-effectiveness of interventions to reduce alcohol consumption. The potential areas for intervention are diverse, including fiscal policy, legislative frameworks, enforcement, primary prevention, screening and brief interventions, and treatment and relapse prevention. The impact on consumption may be measured at a population or individual level. The focus is on reducing consumption, although it is acknowledged that other interventions may reduce the harms associated with alcohol misuse independently of any effect on alcohol consumption.

There is compelling evidence for the effectiveness and cost-effectiveness of raising alcohol prices, through taxation or other means; for screening and brief intervention, particularly in primary care settings; and for treatment and relapse prevention. There is some variable evidence to support restrictions on the availability of alcohol and on advertising. There is little evidence to support the effectiveness of information and education interventions, in terms of impact on consumption. However, it should be emphasised that there has been little or no research to consider the cumulative effects of interventions and whether reinforcement produces a total effect which is greater that the parts.

There is a growing evidence base for intervention on alcohol consumption[2,3] and this is reflected in the Scottish Government's Framework for Action.[4]

References

1 Scottish Government. *Costs of alcohol use and misuse in Scotland*. Edinburgh: Scottish Government; 2008. Available from: http://www.scotland.gov.uk/Publications/2008/05/06091510/11

2 Scottish Government. *Effective and cost-effective measures to reduce alcohol misuse in Scotland: an update to the literature review*. Edinburgh: Scottish Government; 2005. Available from: http://www.scotland.gov.uk/Publications/2005/01/20542/50227

3 School of Health and Related Research. *Independent review of the effects of alcohol pricing and promotion*. Sheffield: University of Sheffield; 2008. Available from: http://www.dh.gov.uk/en/Publichealth/Healthimprovement/Alcoholmisuse/DH_085390

4 Scottish Government. *Changing Scotland's relationship with alcohol: a framework for action*. Edinburgh: Scottish Government; 2009. Available from: http://www.scotland.gov.uk/Publications/2009/03/04144703/0

Sponsor The Health Economics Research Unit is core funded by the Chief Scientist Office, Scottish Government Health Directorates and the University of Aberdeen. All views expressed are those of the presenter and are not attributable to any funding body.

Declaration of interests: None declared.

ALCOHOL INTAKE: MONITORING AND EVALUATING THE SCOTTISH GOVERNMENT'S FRAMEWORK FOR ACTION ON ALCOHOL

Dr Laurence Gruer, Director of Public Health Science, NHS Health Scotland, Glasgow, UK
Email Laurence.Gruer@health.scot.nhs.uk

This presentation describes how the effects of the Government's new Alcohol Action Plan and the Licensing (Scotland) Act 2005 will be evaluated.

A reference group has been set up, chaired by Health Scotland and reporting to the Scottish Government. It has devised a comprehensive logic model, which sets out the desired outcomes and how various interventions might contribute to achieving them. The key outcome is a reduction in population alcohol consumption.

The monitoring and evaluation proposals will have seven components: changes in knowledge, attitudes and purchasing patterns; changes in alcohol consumption; changes in alcohol-related harm; implementation of the Licensing (Scotland) Act 2005; trends in the alcohol retail industry; use of alcohol brief interventions; and use of the increased investment in treatment services. The evaluation will largely rely on data that have already been collected. Their sources, strengths and weaknesses were discussed. The implementation of the framework should provide a comprehensive picture of the impact of the new measures against the background of a changing economic circumstances.

Declaration of interests: None declared.

THE KEY MESSAGES ABOUT HEALTH-RELATED BEHAVIOUR CHANGE FOR POLICY MAKERS

Dr Michael P Kelly, Director, Centre for Public Health Excellence, National Institute for Health and Clinical Excellence, London, UK
Email mike.kelly@nice.org.uk

This presentation draws on the reviews and the research that NICE commissioned to support its guidance on behaviour change, which was published in 2007.

Results

1. Interventions to bring about behaviour change can operate at the population, community or individual level. The outcomes are not necessarily at the same level as the intervention. It is important to be clear at the outset about which levels are involved.
2. The causal chains from intervention to outcome are long and complex; this must be factored into planning behaviour change.
3. Behaviour change takes place in a social context. This must be assessed prior to interventions being implemented.
4. Psychological evidence about self-efficacy is a sound basis on which to develop individual interventions. There are, however, a number of popular, non-evidence-based models and these should be disinvested in.
5. Policy-level interventions should align with locally based interventions and vice versa.
6. It is important to be precise about the content of any intervention.
7. Implementaion must involve proper planning (including appropriate training), careful delivery and evaluation, which should be based on the causal model linking the intervention to the outcome.
8. Behaviour change interventions can sometimes inadvertently increase health inequity.
9. Social marketing provides only very limited leverage for behaviour change.

Behaviour change is complex, but when properly planned, implemented and evaluated offers a significant contribution to the public health armoury.

Further reading

- Kelly MP. Mapping the life world: a future research priority for public health. In Killoran A, Swann C, Kelly MP, editors. *Public health evidence: tackling health inequalities*. Oxford: Oxford University Press; 2006. p. 553–74.
- National Institute for Health and Clinical Excellence. *Behaviour change at population, community and individual levels*. London: NICE; 2007. Available from: http://guidance.nice.org.uk/PH006
- Abraham C, Kelly MP, West R et al. The UK National Institute for Health and Clinical Excellence (NICE) public health guidance on behaviour change: a brief introduction. *Psychol Health Med* 2009; 14:1–8.
- Kelly MP, Stewart E, Morgan A et al. A conceptual framework for public health: NICE's emerging approach. *Public Health* 2009; 123(1):e14–20.

Sponsor: NICE.
Declaration of interests: None declared.

WHAT ARE THE KEY MESSAGES IN HEALTH BEHAVIOUR CHANGE TO POLICY MAKERS?

Prof. Sally Macintyre, Honorary Director, MRC Social and Public Health Sciences Unit, University of Glasgow, UK
Email s.macintyre@sphsu.mrc.ac.uk

The Nuffield Council of Bioethics report in 2007 on public health and ethical issues presented a 'ladder of intervention' (running from 'do nothing' to 'eliminate choice') as a useful framework for thinking about policy options in the field of changing health-related human behaviour. The higher the rung on the ladder at which the policymaker intervenes, the more effective the intervention may be in improving population health and reducing health inequalities; however, the greater the potential loss of liberty and the stronger the requirement for the intervention to be justified in terms of evidential strength, costs, benefits and harms. The implications of this ladder for smoking, physical activity, healthy eating, alcohol intake and human behaviour in general are considered. This presentation also uses information recently collated and reviewed for Scottish and English enquiries into social inequalities in health.

Declaration of interests: None declared.