Work in progress: please do not quote.

Health Economics and Health Promotion:

Moving Forward Together.

Janine Hale
Health Promotion Wales Research Fellow
University of Glamorgan Business School
Treforest
Pontypridd
CF37 1DL

01443 482673
jphale@glam.ac.uk

Acknowledgement:

This paper is the outcome of a meeting funded by the four UK Health Promotion Agencies. I am grateful to the participants at that meeting, especially Christine Godfrey, Mandy Ryan, David Cohen and Dave Buck who made presentations on the day, on which this paper is based.

Health Economics and Health Promotion: Moving Forward Together.

Abstract

Health promotion is an area that has been relatively neglected by health economists. There are a variety of reasons for this, including lack of demand by health promotion specialists, misunderstanding of what health economics has to offer the discipline of health promotion, misunderstanding of what health promotion is trying to do on the part of health economists and perceived difficulties applying standard economic appraisal techniques to health promotion programmes.

Health Promotion Wales is the first UK Health Promotion Agency to employ a health economist. At a recent meeting of the research departments of the four agencies (Health Promotion Wales, Health Education Authority, England, Health Promotion Authority for Northern Ireland and the Health Education Board for Scotland) it was decided that a position paper on health economics and health promotion would be useful. A meeting involving seven health economists from six universities and six health promotion researchers representing all four UK agencies was held to inform this paper. Three broad areas were discussed illustrating the potential role for health economics in health promotion, these were economic evaluation, the role of economics in explaining and predicting individual behaviour, and economic policy and health promotion policy. This paper summarises the main discussion points from the meeting, with the aim of gathering more health economists views on this area.

Background:

Health promotion is an area that has been relatively neglected by health economists (Buck et al 1996). There are a variety of reasons for this, including lack of demand by health promotion specialists, misunderstanding by health promotion specialists of what health economics has to offer the discipline of health promotion, misunderstanding by health economists of what health promotion is trying to do and perceived difficulties applying standard economic appraisal techniques to health promotion programmes.

Much of the work that has been done in this area has looked at the potential of health promotion to reduce future health care costs, an area which is still debated, with little evidence available to support either side (Tolley, 1993). This however, misrepresents the objective of the majority of health promotion programmes, which should be viewed as health programmes, hence offering additional benefits at additional cost (Dunt et al, 1995).

Cohen (1994) argued that since health promotion is clearly never going to replace treatment it is irrelevant whether or not it is 'better' than cure, but attention should be given to the effect of a marginal shift of resources between health promotion and cure. Buck et al (1996) argue that health promotion should be cost effective not only in terms of all health promotion options, but also relative to other medical treatments. At present, however, this is difficult to determine since there is little evidence about the cost effectiveness of the majority of health promotion programmes, although there is evidence about smoking cessation programmes (Buck et al, 1996).

Attempts to apply economic appraisal techniques to health promotion programmes are often met with criticism, with some suggesting that health economics has a limited contribution to make to the evaluation of these programmes (Burrows et al 1995). A common accusation is that applying these techniques to health promotion discriminates against it, making it look ineffective (Barry and DeFriese, 1990, Pelletier, 1991). Some of these criticisms arise from a misunderstanding of the role economics can play, and a misunderstanding of what health economics is all about (Craig and Walker, 1996). There is clearly a need for greater co-operation and understanding between these two disciplines.

In July 1997 Health Promotion Wales appointed a health economist. It was the first (and to date the only) UK Health Promotion Agency to do so. In February 1998, the research departments of the four agencies held their first inter agency meeting. One of the aims of this meeting was to identify areas where the agencies could collaborate. The linking of health economics and health promotion was identified as a key area.

A meeting involving six health promotion researchers representing the four UK agencies, and seven health economists from six universities was arranged. The purpose of this meeting was to discuss economic principles in the context of health promotion and to explore the potential for the two disciplines to work together. It was decided that the discussion in this first meeting should take place on a broad level, rather than focussing on specific issues. Four presentations were given, each introducing an area where economics could make a significant contribution to health promotion. The first presentation was given by Christine Godfrey and introduced the area that health economics is probably best known for - economic evaluation. The second presentation, given by Mandy Ryan, was still within the evaluation framework but concentrated on methods of measuring the outcome of health promotion programmes. The third presentation by David Cohen, changed the focus, making the point that health economics is about more than economic evaluation and showed how theories of consumer behaviour can be used to explain and predict individual health promoting behaviour. The final presentation by David Buck placed the issues raised in the previous presentations into a policy context.

The aim of each of these presentations was to introduce the economic way of thinking to the health promotion specialists, to get feedback as to their initial reaction, and discuss possible ways of taking things further. There was no expectation that the group would be able to resolve the issues at this meeting. This was the start of an ongoing process. As such, the aim of this paper is to present some of the issues arising in order to gather the views of a wider group of health economists.

Economic evaluation.

In principle the techniques of economic appraisal can be applied to health promotion in the same way as to clinical or other interventions, but in practice it is not so straightforward. When an economic evaluation is carried out there are many issues that have to be addressed

(such as the perspective of the study, the outcome measure to use, etc.) the majority of which can be overcome relatively easily. Some of these however are compounded when applied to health promotion. The aim of this section is to highlight these difficulties.

Outcome measures

Arguably the most difficult issue to tackle is the outcome of health promotion activity. As with any programme, the outcome is determined by the objective but it is apparent that the health promotion community is far from agreed on what it is they are trying to do. Possible objectives may include improving information, helping individuals to make more rational decisions. Much of the economic literature in this area has concentrated on health outcomes (Rosen and Lindholm, 1992) and clearly, health promotion can legitimately be viewed as having the objective of health maximisation. However, since health promotion is dealing with people who are essentially healthy, utility maximisation may be a more relevant objective.

QALYs (or similar) are being used increasingly to measure generic health benefits from treatment and cure programmes. The use of such measures in health promotion is problematic for two reasons, first, they are likely to be too insensitive to pick up changes resulting from a health promotion programme (Cribb and Haycox, 1989). Secondly, QALYs are not going to capture the full range of benefits of health promotion which arguably can be wider and broader that those from treatment programmes. Health promotion has the additional disadvantage of not having a 'condition specific' measure that can be used alongside the generic measures.

In addition to benefits arising to individuals, there may be other consequences of health promotion programmes. Rosen and Lindholm (1992) identified factors such as social diffusion, effects on diseases other than the one being targeted, changes in anxiety and changes in self esteem as effects that had been neglected from consideration, but that might not be insignificant.

Techniques such as willingness to pay can be used to try and measure benefits in monetary terms, which can then be directly compared to the costs. This allows individuals to include both health and non-health related benefits in their valuation (Rosen and Lindholm, 1992).

This approach however is not without its difficulties, but there is scope for its use in evaluating health promotion, either directly or within a conjoint analysis framework.

The perspective of the study

Economic evaluation normally advocates a social welfare approach (where relevant). When undertaking applied research it is not unusual for economists to have difficulty in persuading individual agencies to accept a societal perspective as they normally have fixed budgets and their performance may be assessed against indicators which are not captured by improvements in social efficiency. This can be an especially difficult problem in the case of health promotion because of the wide range of interventions - and agencies - which often make up a health promotion programme. The role of the health promotion unit in urging other agencies to undertake the work need to be understood more clearly. This has implications for the costing of health promotion programmes. An issue for economists to consider is the extent to which social welfare is an appropriate approach given that in reality policy is not based on the social perspective. Commissioners may only be concerned about the outcomes for which they have responsibility.

Consideration also needs to be given to the boundaries of any study. Again, while this is an issue that is not unique to health promotion, it can be more significant here. Thought needs to be given to the inclusion of lifetime costs and benefits. For example, a successful physical activity programme aimed at reducing the risk of heart disease may also effect the risk of diabetes, osteoporosis and some forms of cancer, a decision needs to be taken as to whether the beneficial effects on the other illnesses are included, or benefits are restricted to heart disease alone.

Comparators

Economic evaluation is about helping to make choices between competing alternatives. As with all evaluations, it is important to be sure that the 'right' comparator is chosen. This can be a major problem with health promotion however, as there are often a wide range of different methods that can be used to pursue a particular target and there is normally no 'usual care' comparator which is common in many health care evaluations.

Efficiency versus equity

The efficiency criterion says nothing about who gains the benefits achieved. Given the rhetoric of the current government, policy changes are coming about that put a burden on health authorities to look at the distribution of health in the population. Recent reports suggest that health promotion programmes may be compounding health inequalities (Acheson, 1998). Economists need to consider the extent to which the efficiency criterion is the most appropriate to use when evaluating these programmes, possibly at the expense of equity.

Attribution of the output to the inputs

An economic evaluation (of health promotion or anything else) has to be based around the study design and needs to be confident that the observed outcomes are attributable to the intervention. The use of a randomised control trial in most cases solves this difficulty. This design is however, not suitable for the majority of health promotion interventions since it is very difficult to find and control the control group (Rosen and Lindholm, 1992). The long time delay between the intervention and the final health outcomes also makes attribution difficult.

Discounting

The application of a discount rate to future health benefits is an area of contention in health economics. This is particularly relevant for health promotion since the majority of the health benefits will not be observed for several years. Health promotion specialists argue that to discount the future benefits discriminates against health promotion programmes. It cannot be disputed that the higher the discount rate used, the less favourably health promotion programmes are going to be viewed when compared with treatment programmes providing almost immediate benefits.

One suggested solution to this problem is to discount in the usual way, but use a zero rate in the sensitivity analysis (Tolley, 1993). Whilst this illustrates the effect that discounting has, it is not really a solution. The decision as to which rate to use still exists. The chosen rate will depend on which point of view is being advocated.

An additional solution is to concentrate more on the short term benefits of health promotion programmes (Tolley, 1993), although this brings us back to the difficulties of measurement and valuation.

Interpretation of results

Many published evaluations are carried out in a very specific context, but there can be a tendency to take the results and assume they hold in all situations. Cribb and Haycox (1989) argue that generalisations of the results from health promotion programmes are particularly difficult because of the nature of health promotion itself, the success of any programme is likely to be determined by local factors and situations, which are very difficult to model and replicate. The underlying assumptions in any study need to be carefully considered before generalisations can be made

Community versus individual

To be in line with their health promotion colleagues, economists need to take account of community development. Economics tends to come from an individualistic basis, while many health promotion programmes are now focussing on community development. Economists tend to define the benefits to a community as the sum of the benefits to the individuals within that community, this may however, not be the most appropriate definition to use for community health promotion programmes (Shiell and Hawe, 1996). The Health Education Authority is especially interested in the concept of social capital - how are the benefits of this to be evaluated? The social welfare perspective would suggest that these benefits should be included in the appraisal, but would policy makers agree? There is little, if any, evidence about the cost-effectiveness of community health promotion programmes involving multiple strategies (Dunt et al, 1995, Buck et al, 1996).

Individual behaviour

One of the aims of the meeting was to illustrate the role that health economics has to play in health promotion. One message that was important to demonstrate was that there is more to health economics than economic evaluation. Economics is a behavioural science and can be used to explain and predict individual behaviour in a similar way to other models (e.g. the Health Belief Model (Becker and Maiman, 1975)).

One way that economists can try to predict individuals health promoting behaviour is simply to look for relationships in large datasets using econometrics. This, however, simply tells us what the relationship is, it doesn't explain what is going on.

Conjoint analysis can be used both within the economic evaluation framework and within the framework of attempting to explain individual behaviour. It is at this level in health promotion that this technique could be potentially useful. This technique could be used to forecast what the likely uptake would be if a new health promotion programme were introduced. There are some examples in the literature of how this technique can be used in health promotion (van der Pol and Ryan, 1996, Spoth, 1991, Spoth, 1989, Spoth and Redmond, 1993, Spoth, 1992).

Economists can also use basic principles, considering individuals as consumers and producers, to try and explain health promoting behaviour. Maximising health and maximising utility can lead to different decisions being taken. Many health promoting behaviours which appear to be irrational from a health maximising perspective can be explained by identifying that the utility loss from forgoing some well loved behaviour may not be compensated for by the expected value of the health gain.

A health promotion programme, that is actually going to influence individuals behaviour, requires some understanding of why individuals behave in the way they do. In one behavioural model (Cohen, 1984), prevention is viewed in terms of the consumption of 'prevention goods' (which reduce risk) and 'hazard goods' (which increase risk). The utility derived from these goods is of two distinct types; that from their direct use (+ve or -ve) and that from the peace of mind - or anticipation - accompanying the knowledge that consumption alters risk (again +ve or -ve).The model suggests that there are three elements that health promotion programmes can target, the utility-in-anticipation, the utility in use and the cost. This model may provide one way of identifying the most appropriate to target for a given group. For example, if it can be determined that utility-in-anticipation is a (potentially) major determinant of behaviour, then the 'normal' health promotion focus on the likelihood and severity of the unwanted outcome might be most effective whereas if utility-in-use is the major determinant of behaviour then other forms of messages addressing utility-in-use (e.g. the 'kiss a non-smoker' campaign) may be more effective.

This model provides just one example of how economics can be used to explain and predict individual health promoting behaviour. Consideration should also be given to other theories such as regret theory which argues that choices are not influenced by expected utility alone but also by the regret or rejoicing that we would experience if the choice is proved wrong or right. Alternatively, we may want to consider the satisficing behaviour models which argue that people don't try to maximise anything, rules of thumb are adopted because decisions are too complex.

It was agreed that although there is an apparent shift towards looking at community interventions and community development - there is still merit in developing the economic models of individual behaviour.

The Policy context

The final presentation placed all the issues that had been discussed during the day in the policy context. The focus of most health economic research has been on preventive education, e.g. healthy food choices, smoking cessation advice.

Health economics and health policy can be looked at prospectively or retrospectively. Retrospective examination would consist of looking at the impact of a policy e.g. impact of tax changes on smoking behaviour amongst different social groups.

Prospective examination would consist of using economic evaluation techniques to help decide which policy should be implemented. Health economics should not be seen as a threat, it can help health promotion have more of an impact on policy by doing more economic evaluations, giving health promotion a voice when resources are being allocated. The problems associated with doing this have already been discussed.

Health economics can help health promotion to have a greater impact on health policy by showing how health promotion works or why it is easy to fail. Economic models of behaviour and econometric techniques can be used to explain change and lack of change in knowledge/behaviour of different groups. Techniques such as conjoint analysis can be used to

see what people value about their health and how they view health behaviours. This can help to refine health promotion policy and improve targeting to certain groups.

The final part of this presentation looked at how health economics can be made more relevant to health promotion and health promotion policy. More training needs to be undertaken, both of health economists in health promotion, and health promotion specialists in health economics (Tolley et al, 1996). Dissemination of relevant research also needs to be looked at.

Conclusions.

Health promotion programmes make claims on resources and therefore need to be subject to the same evaluation requirements as other health care methodologies, however, this is not without its problems. The difficulties encountered need to be acknowledged and addressed to ensure that inappropriate generalisations are not drawn from the small number of studies that are carried out and published. The limitations of completed studies need to be recognised and the conclusions considered with those in mind.

Further work is needed to refine the models of individual behaviour. Further work is also needed in the area of economics/statistics on attribution and in the area of prediction.

Health economics has an important role to play in health promotion, but this can only be furthered if the two disciplines work together. The meeting that informed this paper was a first step in this process. It is recognised that this paper has not discovered any new problems, but highlighted old ones. It is important that these are discussed however if the evaluation of health promotion is going to move forward.

References

Acheson D (Chair). Independent inquiry into inequalities in health. London: The Stationery Office 1998

Becker M. H., Maiman L.A. Sociobehavioural determinants of compliance with health and medical recommendations. Medical Care, 1975;13:10-24

Barry P.B., DeFriese G.H. Cost-benefit and cost-effectiveness analysis for health promotion programmes. American Journal of Health Promotion 1990;4(6):448-452

Buck D., Godfrey C., Killoran A., Tolley K. Reducing the burden of coronary heart disease: health promotion, its effectiveness and cost. Health Education Research 1996;11(4):487-499.

Burrows R., Bunton R., Muncer S., Gillen K. The efficacy of health promotion, health economics and late modernism. Health Education Research 1995;10(2):241-249

Cohen D. Health promotion and cost effectiveness. Health Promotion International 1994;9(4):281-287

Cohen D.R. Utility model of preventive behaviour. Journal of Epidemiology and Community Health 1984;38:61-65

Craig N., Walker D. Choice and accountability in health promotion: the role of health economics. Health Education Research 1996;11(3):355-360

Cribb A., Haycox A. Economic analysis of the evaluation of health promotion. Community Medicine, 1989;11:299-305

Dunt D. R., Crowley S., Day N.A. Is prevention really better than cure? Parameters of the debate and implications for programme evaluation design. Health Promotion International 1995;10(4):325-334

Pelletier K (ed.) A review and analysis of the health and cost-effective outcome studies of comprehensive health promotion and disease prevention programmes. American Journal of Health Promotion 1991;5(4):311-315

Rosen M., Lindholm L. The neglected effects of lifestyle interventions in cost-effectiveness analysis. Health Promotion International 1992;7(3):163-169

Shiell A., Hawe P. Health promotion, community development and the tyranny of individualism. Health Economics 1996;5:241-247

Spoth R. Simulating smokers' acceptance of modifications in a cessation program. Public Health Reports 1992;107(1):81-93

Spoth R. Smoking cessation program preferences associated with stage of quitting. Addictive Behaviours 1991;16:427-440

Spoth R. Applying conjoint analysis of consumer preferences to the development of utility-responsive health promotion programs. Health Education Research 1989;4(4):439-449

Spoth R., Redmond C. Identifying program preferences through conjoint analysis: Illustrative results from a parent sample. American Journal of Health Promotion 1993;8(2):124-133

Tolley K. Health promotion: How to measure cost-effectiveness. Health Education Authority, London 1993.

Tolley K., Buck D., Godfrey C. Health promotion and health economics. Health Education Research 1996;11(3):361-364

Van der Pol M., Ryan M. Using conjoint analysis to establish consumer preferences for fruit and vegetables. British Food Journal 1996;98(8):5-12