**** WORK-IN-PROGRESS: PLEASE DO NOT QUOTE ****

Micro Solutions To Macro Problems: Economics And Health Authority Decision-Making

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Introduction

The recent letter in *Health Economics* by Ruth McDonald (1999) provides an excellent *post hoc* rationalisation of why we considered this to be an important topic. The letter was a response to David Kernick, a General Practitioner who argued in the *British Medical Journal* [Kernick, 1998] that "health economists have lost their way". McDonald's response argues that Kernick is at least partly correct, and suggests that:

> "what is required is that health economists work more closely with NHS policy-makers, within their decision-making environment, in order to understand the context, values and processes faced by those whose resource allocation decisions we seek to inform" [McDonald, 1999, p.176]

This paper outlines the process by which a group of health economists are seeking to inform the decisions which are central to the development of Health Improvement Programmes, within the constraints faced by Health Authorities in their day-to-day decision-making environment.

Policy context

The 1997 White Paper *The New NHS: modern, dependable* [Department of Health, 1997] signalled the end of the internal market, a new emphasis upon co-operation in health care and, perhaps most significantly, a return to service planning. The centralist approach of the new Labour administration can be seen in a number of policy documents which have emerged since the 1997 White Paper. Not only is the approach carefully controlled from the centre, it is also increasingly consistent across different parts of the public sector.

This consistency is evident from the National Priorities Guidance for 1999/00 – 2001/02 [Department of Health, 1998a], aimed at modernising health and social services. The guidance indicates areas where it is expected that there will be NHS lead, social services lead and shared lead for action to improve health (see Table 1).

Table 1: National priorities

Social Services Lead	*Shared Lead*	*NHS Lead*
Children's Welfare	Cutting Health Inequalities	Waiting Lists / Times
Inter-Agency Working	Mental Health	Primary Care
Regulation	Promoting Independence	Coronary Heart Disease
		Cancer

The Health Improvement Programme (HImP) is the key co-ordinating and planning framework for achieving national and local priorities. The HImP covers the most important health needs, the main healthcare requirements of local people, and the range, location and investment required in local health services to meet the needs of local people. It is a prime responsibility of the Health Authority to develop this (three-year) planning framework collaboratively with all relevant agencies, and it is the Health Authority that will ultimately be held to account for meeting targets outlined in the HImP. Additionally, it is clear that Health Authorities will be able to hold others to account in ensuring delivery of the NHS contribution to the HImP .

By bringing together different organisations responsible for community welfare in the widest sense, HImPs explicitly "embody the Government's aim of building high quality public services and strong communities. They are, in essence, the local plan of action to improve health and modernise services" [Department of Health, 1998b].

A key feature of the HImP is that targets should be measurable, and the new national frameworks for assessing performance in both health and social services reflect this objective [Department of Health, 1998c; Department of Health, 1999]. The consistency in tone of the two frameworks is striking, with an emphasis upon (for example) the effective delivery of services / care, ensuring fair access and achieving efficiency gains in securing measurable improvements in health.

The Government's commitment to monitoring quality in the NHS is reinforced in *A First Class Service: quality in the new NHS* [Department of Health, 1998d]. 'Quality' in the context of the National Framework for Assessing Performance [Department of Health, 1998c] includes both process and outcome concepts: for example, reductions in waiting times and reduced mortality from certain conditions. The latter is consistent with the high-level targets outlined in *Our Healthier Nation* [Department of Health, 1998e] in the areas of coronary heart disease, cancers, mental health and accidents. The choice of topics for our project reflected these priorities (see page 8).

The central co-ordination is reinforced by the specification of service models (National Service Frameworks), the precursor to which can be seen in the Calman-Hine framework for the development of cancer services [Department of Health, 1995]. *Inter alia*, these frameworks will emphasise the concept of networks of care that are patient-centred and consistent with the development of a primary care-led NHS (through Primary Care Groups), together with appropriate clinical sub-specialisation. Emerging findings are available in relation to National Service Frameworks (NSFs) for coronary heart disease [Department of Health, 1998e] and mental health (forthcoming). Part of the rationale for the development of NSFs is to ensure that the best available evidence on clinical and cost-effectiveness is translated into an

appropriate pattern of service provision through the HImP, for example in relation to the range and location of services.

The final strands to this ambitious, but coherent, series of policy initiatives are the development of a National Institute for Clinical Excellence (NICE) and an "arm's-length" Commission for Health Improvement to enforce required improvements in quality. The task of NICE – which has the status of a Special Health Authority - will be to produce evidence-based summaries or guidelines for new and existing clinical interventions. The Commission could be viewed as the overall regulator of quality, charged with ensuring that 'clinical governance'[a] systems are in place throughout the NHS.

In practice, the logistical problems of the Commission – which intends to conduct a rolling programme of reviews of all Trusts over a 3-4 year period – are likely to be such that the Health Authority will become the *de facto* local regulator of health care quality [Ferguson, 1998]. It is anticipated that the majority of problems or disputes between Primary Care Groups (PCGs) and Trusts will be resolved by the Health Authority as local mediator / regulator, with the Regional Office as the next 'port of call' if agreement cannot be reached. In the same way as the Bank of England has typically been viewed as the 'lender of last resort', the Commission could be viewed as the 'regulator of last resort' in relation to health care quality.

The practical implications are clear for the Health Authority. The HImP is the planning framework which must incorporate national and local priorities, the overall approach to performance assessment and quality (through the development and implementation of clinical governance arrangements), and evidence-based health care through the recommendations of NICE and the implementation of NSFs. Longer-term agreements between PCGs (or Health Authorities in areas of specialist commissioning) and Trusts will need to reflect the elements of this overall framework.

The combination of a more explicit link between clinical and service issues, the application of the best available evidence of clinical and cost-effectiveness, and the increasing need to prioritise within and across HImP programme areas, means that there can surely never have been a better time for economic principles to be applied to health care decision-making. In practice, how feasible is this objective in the NHS, and what economic frameworks may be relevant to guide decisions?

Micro and macro approaches

Although an over-simplification, it is useful to analyse the contribution of economics by level of health care decision-making. Health Authorities and PCGs have to decide how to spend comprehensive budgets across a wide range of services, which can be differentiated by the type of care (e.g. preventative, treatment, rehabilitative, palliative), the speciality, the client group or the care sector (e.g. primary, community, tertiary). In theory these decisions would be undertaken to maximise allocative

[a] The concept of clinical governance represents a statutory duty for quality in both Primary Care Groups and hospital Trusts; it has been defined as "a framework through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish" (Department of Health, 1998d).

efficiency. Techniques such as Programme Budgeting and Marginal Analysis (PBMA) have been proposed to inform such decisions at a macro level.

Specific economic evaluations, such as cost-effectiveness analyses (CEAs), can provide information on the relative cost-effectiveness of particular interventions, aimed at applying evidence-based health care when set within a decision-making context. Such information is typically available to inform decisions at a micro level: for example, is drug X more cost-effective than drug Y; is cognitive therapy more or less cost-effective when applied in primary care settings? By their very nature, CEAs (which are obviously only one, albeit very common, form of economic evaluation) are concerned with the narrow question of achieving a given outcome at least cost, not the wider question of whether resources could in fact be diverted to more 'productive' uses (in terms of generating improvements in health). Specific CEAs can be part of a PBMA approach, if they follow on from previous broad analysis. If CEAs are presented as a cost-per-QALY league table, then the issues of allocative efficiency may be addressed. However, CEAs are mostly directed at narrower questions.

To summarise this dichotomy within the context of the HImP, microeconomic evaluation could be viewed as informing the application of evidence-based health care (a prerequisite to implementing clinical governance), while PBMA or similar techniques could be viewed as informing the wider resource allocation process. Craig *et al.* (1995) make a similar distinction between what they term "micro and macro allocative efficiency".

To some extent the dichotomy is, of course, false: it is to be hoped that decisions to re-allocate resources within or across health care programmes would be informed by the best available evidence from economic evaluations. There is, however, a clear tension: systematically applying cost-effectiveness evidence to HImPs requires that evidence is available on all types of intervention commissioned within the HImP framework (given that HImPs are intended to be all-inclusive, this implies a full information set). In the real world of partial information, to what extent can the micro and macro approaches be reconciled: in other words, can economic analysis and techniques guide the development of HImPs?

Programme budgeting and marginal analysis

There is a significant literature on this subject[b] and it is not the purpose of this paper to debate the merits or drawbacks of the PBMA approach. The approach, however, is an obvious conceptual starting-point in considering the decisions which Health Authorities – and, increasingly, PCGs – will have to make within the context of the HImP.

Examples of HImP programmes from two Health Authorities are outlined below:

Health Authority A

- coronary heart disease and stroke
- cancers
- mental health

[b] For example, a whole issue of Health Policy was devoted to PBMA (Vol. 33, No. 2, 1995)

- accidents
- respiratory disease
- the health of older people

Health Authority B

- cancer
- chronic disease and disability
- coronary heart disease
- elective care
- emergency care
- maternity services and services for children
- mental health
- promoting positive health

It is clear that, while the HImP is intended to be all-inclusive, there will be a considerable 'bucket' category of health care activity which does not fall neatly into programme areas (e.g. general medicine). This will continue to be the case even as the number of programme areas expands over time, although it is expected that the bucket category would gradually lessen in size. Given this problem of residual activity which does not fall within a particular programme, and the problems of comparing evidence **across** health care programmes, a less ambitious aim of PBMA is to explore its usefulness **within** programmes. This is consistent with the summary stages of PBMA outlined by Donaldson (1995) – see Table 2 below.

Table 2: Stages of PBMA

Stage	*Description*
1	Start within programmes
2	Identify your programme
3	Statement of expenditure and activity by sub-programmes (i.e. the 'programme budget')
4	Decide on services which are candidates for expansion / introduction and services which are candidates for reduction
5	Measure costs and benefits of proposed changes (i.e. marginal analysis)

Source: Donaldson (1995)

Clearly there will remain the problem of partial information even within a programme area: the question is to what extent economic analysis can help to inform the decisions which have to be taken by parties to the HImP in this imperfect world.

Craig *et al.* (1995) caution against the dangers of restricting analysis to micro-level problems, since this will "fail to realise the potential of programme budgeting in identifying broad expenditure priorities and in generating the pressure to change them". This is an important warning and we take the same view as Craig *et al.* that it is necessary to find ways of synthesising the micro and macro approaches. What we argue here, however, is that decision-making in practice involves making use of micro-level information to inform macro-level decisions, whilst recognising that there

has been considerable debate {see references 19-22 in Craig *et al.*} about the sequencing of decisions.

It is important to recognise that, when examining one particular programme area, PBMA need not be viewed as one integrated process: in other words, it may not be necessary to undertake the detailed programme budgeting component and go straight to the marginal analysis component. This was a key message from the Mid Glamorgan experience [Cohen, 1995]: "programme budgets are useful, but if marginal expansions/contractions are being considered only within single programme areas, they are probably unnecessary unless further divided into expenditures on sub-programmes".

Topic selection within the HImP

As Craig *et al.* [1995] point out, micro-level work needs to be set within the context of overall priorities based on a macro perspective. Discussions with Health Authorities A and B revealed a number of areas of overlap in HImP priorities. It was decided to focus upon two major programmes: cancers and mental health. The rationale for this was fourfold:

- strong evidence base, including at least some information on cost-effectiveness in certain areas;
- high-profile national priorities;
- service framework explicit [Department of Health, 1995; Department of Health, 1998a];
- change was desirable / feasible /mandatory.

The next stage of discussions involved targeting a small number of areas within programmes where at least one of the above criteria was applicable. This led to the following selection of topics:

Table 3: Topics Selected for the HImP Project

Disease Area	*Topic*
Cancers	♦ use of paclitaxel as a first-line treatment for advanced ovarian cancer ♦ implementing recent lung cancer national guidelines ♦ cost-effectiveness of smoking cessation interventions ♦ assessing the impact of guidance on cancer waiting times.
Mental Health	♦ managing depression in primary care ♦ use of atypical anti-psychotics ♦ evaluating low / medium-term secure units ♦ evaluating assertive outreach services.

The intention within the project is to examine all of these areas over time; the brief rationale for selecting these topics is as follows. The cost-effectiveness implications of using paclitaxel (Taxol) as a first-line treatment for ovarian cancer was requested by the participating Health Authorities to inform their ongoing decision-making

processes. In addition, the evidence base for this topic was considered to be relatively strong.

Development money for lung cancer was anticipated and so this was selected as one of the cancer areas. An important local priority was to examine the impact of implementing the recently produced national guidelines on lung cancer [Department of Health, 1998g]. Within the lung cancer area, it was decided that the cost-effectiveness of smoking-cessation interventions should be investigated, in line with the government priorities set out in the White Paper *'Smoking Kills'* (Department of Health, 1998h].

Concern was expressed by both Health Authorities about the implications of the '2-week rule' policy [Department of Health, 1997] for breast cancer waiting times (by April 1999), and for **all** cancers by April 2000 [Department of Health, 1998a]; this was therefore selected as the final cancer topic, although it should be noted that little evidence on this area was thought to be available. Nevertheless, the policy is of sufficient importance to merit further examination of the available evidence base for different cancer sites.

With regard to mental health, the Health Authorities indicated that little was known about the economic implications of using secure units. Secondly, the use of the new atypical antipsychotics as a first-line therapy for schizophrenia was identified as an area where there was local and national pressure to follow the best evidence. The management of depression in primary care was identified as the third topic area in mental health, including both drug and non-drug therapies (principally counselling and psychotherapy). Finally, it was noted that different models of assertive outreach were available but that there was uncertainty about whether cost-effectiveness information was available to aid the decision-making process.

Process Followed

As a starting point, the decision was taken to focus upon two areas within cancer: the cost-effectiveness of smoking cessation programmes, and the use of paclitaxel as a first-line therapy in ovarian cancer. The first of these provides a good example of an area in which an inter-sectoral approach is essential, a central requirement of HImPs in involving different organisations. The second was of particular interest since it represented a fairly typical scenario in the NHS with the use of a high-cost drug being extended on the basis of relatively recent clinical trial evidence.

Once the clinical areas of interest were identified, we reviewed the literature using electronic databases to locate reviews and original investigations of both clinical effectiveness and economic evaluations. Our primary aim was to find UK-specific literature if possible. We then contacted researchers within the UK to identify further references that were missed in our literature searching, and to enquire regarding further work that was ongoing or planned. We then used this literature base to adapt the results to the local (Health Authority) level, taking into consideration several factors which have been previously identified as being potentially important [Bryan and Brown, 1998; Drummond et al, 1997, Ch. 9]. These factors included the demographic structure of the population, variations in clinical practice, and relative price differences. Consideration of these factors allowed us to make estimates of

budgetary impact, effectiveness (in common units, e.g. life years gained) and cost-effectiveness ratios.

For smoking cessation, the main reference used was 'Guidance for Commissioners on the Cost Effectiveness of Smoking Cessation Interventions' [Parrott et al., 1998]. The guidance uses the PREVENT model to estimate the impact of a change in an exposure category (smoking prevalence) upon the incidence of a number of diseases. The relevant diseases are lung cancer, coronary heart disease and chronic obstructive pulmonary disease. PREVENT estimates total life years gained up to the year 2041 and assumes an annual baseline quit-rate of 1%. Estimates of effectiveness for these interventions were derived from systematic reviews and then checked by expert opinion. These effectiveness estimates were used in the PREVENT model to derive life years gained. Costs to the Health Authority of the face-to-face intervention included the costs of GP visits, self-help materials and the cost of the clinic. The costs of the community-wide interventions were derived from estimates in the literature. Results were presented in terms of costs and effects for a typical Health Authority with a population of 500,000. These results were adapted for the Health Authorities using local data on demographic structure (age and sex distribution) and population size. Two general types of smoking cessation interventions were included, face-to-face and community-wide. The costs, outcomes and cost-effectiveness ratios are presented in Table 4 (see Appendix). It can be seen that the cost-effectiveness ratio for face-to-face interventions ranged between £174 to £269 per (discounted) life year gained and from £34 to £1,143 for a discounted year of life gained from a community-wide intervention. The annual budgetary impact (cost to the Health Authority) also varied widely, with the cost to Health Authority A ranging from £180,000 to £488,000 for face-to-face interventions, and from £8,000 to over £600,000 for community-wide interventions.

The cost-effectiveness of smoking cessation affects at least three programme areas in Health Authority A's HImP, and is still being evaluated locally with health and social care organisations. Ideally the information provided by adopting the PREVENT model locally will be set alongside relative cost-effectiveness information from other interventions aimed at improving outcomes in lung cancer particularly (see next section).

The economic evaluation of paclitaxel as first-line therapy in advanced ovarian cancer used information from several economic evaluations in the literature, as well as consideration of local dosing regimens from the major cancer centre in the Health Authority, and local patterns of cancer incidence from cancer registry information. The evidence base used in the economic evaluations was mainly from a single clinical trial [McGuire et al, 1996] in the US, but also included consideration of interim results from several European clinical trials. It was estimated that about 45 patients would be eligible for this treatment in Health Authority A. The estimated costs to the Health Authority were about £350,000, with an effectiveness of about 45 life years gained; the cost-effectiveness ratio was almost £8,000 per life year gained.

Having gained some information on the cost-effectiveness of certain interventions, attention turned to how such information could be set alongside information available routinely to Health Authorities to aid their decision-making.

Practical application of PBMA techniques within a Health Authority

A programme budget for cancer is not easy to construct and the information required is not available routinely. Health Authority A analyses its expenditure by speciality across providers and (more recently) as a total spend per Primary Care Group (PCG). In 1995 the Health Authority attempted to examine the division of expenditure between specialist cancer centres and cancer units. However, a true 'within programme' budget would need to include information about all aspects of cancer expenditure from prevention through to palliative care. Some of the difficulties in accessing this type of information are shown in Table 5 (see Appendix).

A detailed programme budget would be extremely time-consuming to construct and it is not clear that the expected value of information gained would outweigh the additional workload involved. As Cohen (1995) suggests, it may be unnecessary to construct a programme budget within a single programme. However, the process of constructing the programme budget may of itself yield benefits; for example, Peacock and Richardson (1998) found that:

- participants in the process had to address directly their objectives in providing a service;
- the process raised awareness of costs, activity levels and outcomes;
- programme budgeting increased the emphasis upon a strategic approach to priorities and planning, leading to a move away from implicit and potentially *ad hoc* decision-making to more open and explicit decisions;
- in the absence of the programme budgeting process, priority-setting would have been beset with definitional problems in identifying the services to be considered and in estimating the activities and resource implications of future levels of services.

Additionally, the Anglia and Oxford Resource Mapping Group (1996) found that programme budgeting highlighted differences in activity levels between providers and shed some light on cost differences. Clearly there are other ways of achieving these outcomes than constructing detailed programme budgets. However, it appears that there is some evidence to suggest that establishing a common view among participants of the objectives and definitions of a programme is essential before any marginal analysis can be considered.

The difficulties around generating options for the marginal analysis component have been well-documented; for example, Posnett and Street (1996) argue that a disproportionate emphasis has been placed on the role of 'expert groups' in identifying options for evaluation. Instead, focusing on a description of how patients flow through the health care system allows options for change to be identified systematically and prioritised for further detailed evaluation. This is an important methodological issue in PBMA, but it is not the purpose of this section to debate **how** options are selected for detailed evaluation. It is worth, however, focusing on some of the practical problems involved in bringing about change once options have been identified for marginal (re-)investment of resources. This issue of extracting real resources for re-investment is particularly relevant in an acute hospital setting

[Ferguson & Baker, 1998]. The Anglia and Oxford Resource Mapping Group classified some of the problems faced by Health Authorities as follows:

- the relatively small size of variable costs involved;
- the inability to restrict provider activity and the temptation to replace the activity with another procedure within the same speciality;
- the ways in which providers price other services in response to a reduction in activity in one area.

One of the ways in which these practical issues can be avoided - at least partly - is to focus upon new resources in the system, attempting to ensure that these are allocated as cost-effectively as possible. Theoretically, of course, the marginal cost-effectiveness associated with new investments would have to be compared with all other possible investments - in practice, however, decisions have to be taken by NHS organisations based only on identified new monies (for example, waiting list initiatives, implementing new guidance / guidelines). There is a well-recognised danger of 'disjointed incrementalism' when new investments are viewed in isolation, but this decision-making mode is consistent with the reality of the NHS.

During the course of the project an opportunity to examine this arose within Health Authority A when development monies for lung cancer were released following the issue of national lung cancer guidelines [Department of Health, 1998g]. The only constraint imposed by the Department of Health was that this development money should be spent in areas highlighted by the guidance as being clinically effective. The Health Authority had a period of three weeks in which to submit bids for using this money (approximately £150,000).

Local providers were involved in the decision about how the new money would be spent, with lung cancer specialists in secondary care being asked to submit ideas for bids. At the same time a local cross-Health Authority group met to discuss the possibility of bidding collaboratively in areas where the cost to one Health Authority would be prohibitive (bearing in mind that one Cancer Centre would serve the populations of several Health Authorities).

The consequence of these processes was that Health Authority A decided to bid for a lung cancer nurse for each local Trust and at the same time to collaborate in a bid to implement CHART (continuous hyperfractionated accelerated radiotherapy). The underlying reasons were largely pragmatic:

- there was evidence of effectiveness for both initiatives;
- all local Trusts had identified the need for additional nursing input to their lung cancer work, hence this was perceived as fair;
- the new money was seen as one of the only opportunities to fund CHART collaboratively;
- the two areas identified were affordable and would utilise all of the development monies.

It is interesting to note the implicit equity objective of the Health Authority: being perceived to be 'fair' to different providers was an important consideration. The existence of cost-effectiveness evidence was not considered explicitly as part of the decision-making process.

By restricting bids to secondary care, the Health Authority excluded initiatives aimed at prevention and to a lesser extent palliative care. Ironically, cost-effectiveness information from the smoking cessation work suggests that prevention would be an efficient use of resources to tackle lung cancer. However, meeting shorter-term health targets are an imperative for Health Authorities given government initiatives such as *Our Healthier Nation* (which outlines clear targets for reductions in lung cancer deaths within 10 years); spending development monies on activities aimed at promoting health is by definition unlikely to have a major impact on the public's health in the short-term. Proposals which have an identifiable short-run impact on existing patients (e.g. additional specialist nursing, greater access to radiotherapy treatment) are more likely to win favour for Chief Executives with their political masters.

In the case of paclitaxel in advanced ovarian cancer, both Health Authorities were rapidly moving toward a decision, having started the decision making process before our involvement. A decision was taken to fund the use of paclitaxel before our analysis was finished for both Health Authorities. We were unable to make an impact on this process, principally because of the timing of our analysis.

It is not difficult to criticise such pragmatic and *ad hoc* decision-making. However, as McDonald (1999) notes: if health economics is to have an impact on Health Authority decision-making, it must be able to take into account the **context** in which decisions are made and "acknowledge the constraints on decision-makers and recognise that if room for manoeuvre is limited then binding constraints cannot be assumed away". A relevant question to consider is whether health economics could have influenced the decision regarding where lung cancer development monies should be allocated to secure measurable improvements in health.

In order to spend the lung cancer development monies within the framework expressed in this paper, economic evaluations of each of the competing proposals (e.g. additional specialist nursing, greater access to radiotherapy treatment) would be needed. Efforts were hampered in this endeavour because of lack of communication (e.g. it was not clear that these proposals were explicitly being considered), and a lack of primary economic evaluations on which to base local estimates. As already noted, short time scales do not help: three weeks is not a sufficient time in which to search for and present the available cost-effectiveness evidence which might influence the decision. Arguably, it should also not be the role of individual Health Authorities to attempt this task: perhaps it should be the role of those producing national guidelines (usually dealing with clinical effectiveness rather than cost-effectiveness) to identify where new resources could best be targeted in a particular clinical area.

Health Authority A is currently examining the available cost-effectiveness evidence around gynaecological cancer in anticipation of the forthcoming RCWG gynaecological cancer guidelines. On the assumption that similar development

monies will be made available to Health Authorities, the intention is to assess whether the cost-effectiveness information presented can usefully inform the resource allocation process. In essence, will the economic evidence have an impact on the decision as to how this marginal investment should be targeted?

Conclusions

Analysis at the Health Authority level needs to be timely. as the agenda shifts rapidly (e.g., the issue of Taxol for ovarian cancer quickly became passé).

Given the pace of decision-making, there is insufficient time to undertake economic evaluations from scratch. Therefore, economists should concentrate on situations where an existing study can be adapted, or where a model exists that can be populated with local data (e.g., the PREVENT model for smoking cessation).

Given this, the role of the NICE appraisal process is crucial in the case of new and emerging health technologies. Under the NICE appraisal process, evaluation resources can be concentrated so as to make an adequate assessment.

We need to consider in more detail how local economic analysis can contribute by adapting studies done elsewhere: e.g. by considering the different patient population, local facilities and clinical conventions and local prices. Perhaps NICE assessments could anticipate the need for subsequent local adaptation.

The macro approach to the use of economic evaluation, based on PBMA, has substantial data requirements and is somewhat indirect. That is, considerable analysis is often required before specific issues, suitable for economic evaluation, are identified.

An alternative approach to using economic evaluation, called the micro approach here, would be more opportunistic. When operating at the local level it is important to consider what opportunities exist for triggering an evaluation. Amongst the case studies considered here, the types of triggers were;

- central or local funding becoming available;
- the need to meet a new performance target (e.g. waiting times for cancer referrals);
- a new, high cost, health technology becoming available.

The micro and macro approaches to economic evaluation can exist side-by-side, but the micro approach is likely to attract more local buy-in and is generally quickest at getting to the issues that people think are important, or where decisions are likely to be taken.

The main risk with the micro approach is that we will drift into disjointed incrementalism and that major areas of inefficient activity will remain unevaluated. Such areas may be identified by a PBMA approach, but the disadvantage of relying only on a PBMA approach is that many opportunities for applying economic evaluation may be missed.

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Appendix

Table 4: Smoking Cessation Interventions Effectiveness rates, Life years gained and costs for each intervention for Health Authorities A & B

	Effectiveness rate[1]	*Life years gained for Health Authority A, discounted at 1.5%*	*Cost to Health Authority A (£)*[2]	*Life years gained for Health Authority B, discounted at 1.5%*	*Cost to Health Authority B (£)*[2]	*Cost-effectiveness ratio, discounted (£)*
FACE TO FACE						
brief advice (BA)	0.6%	1,044	181,276	1315	228,346	174
BA + self help materials (SHM)	0.8%	1,394	307,608	1756	387,482	221
BA +SHM + advice to use NRT	0.9%	1,568	422,495	1975	532,200	269
BA +SHM + advice to use NRT + specialist smoking-cessation service	1.1%	1,918	488,455	2415	615,288	255
COMMUNITY WIDE						
Local No Smoking Day	0.15%	236	8,051	297	10,141	34
Broader Community-wide interventions with:						
high effectiveness	0.5%	870	[443,645][3]	1096	[558,842][3]	509
medium effectiveness	0.1%	174	44,312	219	55,818	252
low effectiveness	0.05%	87	[4,478][3]	110	[5,641][3]	51
Quit and win competition with:						
average cost and participation	8%	176	147,900	221	186,304	874
low cost and participation	6%	28	24,650	35	31,051	842
high cost and participation	10%	543	619,773	684	780,704	1143

[1] Parrott S et al (1998).

[2] = typical HA figures, adjusted for the local populations: assumes national smoking rate and national costs apply to both Health Authorities.

[3] [figures in square brackets] = Derived from cost-effectiveness ratio.

Table 5: Sources of information for Programme Budget

Activity	*Information source*	*Practical problems*
Prevention	♦ Subjective apportionment of health promotion and public health budget. ♦ Breast and cervical screening programme costs. ♦ Payment through GMS to GPs for cervical cytology.	Very difficult to apportion activity not solely aimed at cancer prevention e.g. smoking cessation affects all circulatory diseases as well as cancer
Presentation to diagnosis	♦ Costs of direct access tests from GPs for pathology and radiology. ♦ Costs of diagnostic testing whilst in hospital.	This information is difficult to isolate as it is charged as part of a hospital episode
Treatment	♦ Cost of treatment in primary, secondary and tertiary care.	Information about secondary and tertiary treatment activity is routinely available. However to get the complete picture of lung cancer activity a search would need to be made linking primary diagnosis with activity rather than concentrating on activity categorised as oncology which would miss activity buried in elderly, general medicine etc. Information about treatment of patients in primary care is not readily available and would have to be built up by subjective apportionment in conjunction with routinely available prescribing information. For both primary, secondary and tertiary care costs would then need to be apportioned to that activity. Information about the treatment of patients in the community is therefore not as accurate as that in secondary and tertiary care. This has important implications when comparing client groups who are treated in different settings e.g. children tend to be treated more in the community whilst the elderly have more hospital based care.
Palliative care	♦ Costs of community hospital care for the terminally ill. ♦ Hospice activity. ♦ Community based care.	This would be very difficult to identify from routine data. Hospices could be asked to apportion the amount of their activity based on cancer. However the HA only contributes a very small amount to hospice funding and this is not explicitly linked to activity. As under treatment no routine information is available on this.