

The Issues Panel for Equity in Health

The Discussion Papers

Editors

Adam Oliver, Richard Cookson
and David McDaid

Foreword by
John Wyn Owen



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Foreword

The Nuffield Trust has long had an interest in the topic of Equity in Health. More than 20 years ago Professor Raymond Illsley's Rock Carling Monograph *Professional or Public Health: Sociology in Health and Medicine* raised issues that are under consideration in this publication.

More recently in a Nuffield Trust funded project *Policy Futures for UK Health*,¹ Charlotte Dargie highlighted the recent UN (1998) comparative report *Changing Consumption Patterns for Tomorrow's Human Development*.² In it the United Kingdom is seen to fare poorly on the grounds that while the country is advanced it is divided: 1 in 5 British adults is functionally illiterate; 1 in 6 people live in poverty; and of the 20 most advanced countries in the world, Britain has the highest number of young prisoners and the longest working week.

Drever, Whitehead and Roden³ highlighted that health inequalities that reflect income inequalities are particularly marked amongst children and this has implications for future population health. Children in manual classes are more likely to suffer from chronic disease than children in non-manual classes and the difference is greater for boys than it is for girls. The threat to health from poverty is more pervasive than the incidence of specific diseases. The poorest in society are more likely to suffer premature death from common diseases and vulnerability to long-standing illness and disability varies substantially with social class, most particularly for men.

These analyses indicate that the priority for policy makers should be to tackle the root causes of poor health outcomes. Further, an international perspective is important, particularly as countries like Sweden and recently Spain which had experienced widening health disparities have now been able to reverse some of this trend.

The Trust welcomes the opportunity to publish these papers to encourage a wider debate on the issues. At the present time the infrastructure to address both research and teaching needs is weak and is in need of strengthening. The Trust's trilateral meeting in Canada in 2000 called for the establishment in the United Kingdom of a greater multidisciplinary research capacity for health inequalities with core funding over some 20 years, for a centre with a critical mass to inform policy development, critical evaluation as part of implementation, and that over time there should be similar networked units across the United Kingdom to tackle local problems at local level.

John Wyn Owen CB
July 2001

¹ Dargie C, Dawson S and Garside P. *Policy Futures for UK Health. 2000 Report*. London. The Stationery Office. 2000.

² United Nations. *Changing Today's Consumption Patterns - For Tomorrow's Human Development*. Oxford University Press. 1998.

³ Drever F, Whitehead M and Roden M. *Current Patterns and Trends in Males Mortality by Social Class (based on occupation)*. Population Trends. 1996.86 4 15-20.

THE ISSUES PANEL FOR EQUITY IN HEALTH

The Discussion Papers

Adam Oliver, Richard Cookson and David McDaid

Introduction

The pursuit of equity in health is a worthy cause, and a powerful rallying cry for all kinds of human endeavour. The trouble is, there is little agreement about what 'equity in health' means; still less on how to achieve it. Anyone who seeks agreement is soon confronted with a jungle of issues. Lurking in this jungle are hidden methodological issues that, upon examination, often turn out to be as important as the more obvious political and practical ones.

This set of discussion papers, written by leading UK experts from an unusually wide range of disciplinary backgrounds, attempts to set out and classify, in a reasonably complete and systematic manner, the full range of issues raised by the pursuit of equity in health. This is done in the belief that progress in tackling inequities in health in the UK has been hampered by a lack of clarity on these issues, as well as political and practical obstacles. It is also done in the hope that reading these papers will help people at least to agree on what it is that they are disagreeing about when they argue about equity in health.

The Issues Panel for Equity in Health

Health inequalities and equity concerns continue to be the subject of much debate and policy interest in the UK, most recently evidenced by the announcement by the Department of Health in February 2001 of health inequality targets that aim to reduce infant mortality rates and premature adult mortality. As a contribution towards facilitating this debate, the Health Equity Network (HEN) was launched in March 2000 as a forum for the exchange of views on health equity and inequality issues. The idea of forming an Issues Panel for Equity in Health (IPEH) arose immediately following the inaugural meeting of HEN. At that meeting it was the view of many that if we were to be successful in carrying forward our aim of encouraging multidisciplinary debate and collaboration in the field of equity and inequality in health, it would be helpful if a group of people with diverse backgrounds and enthusiastic to our general aim were convened to work together in a constructive manner. The intention was that the members of this group would each produce a discussion paper outlining in plain language what they considered to be the most important issues relating to health equity and inequality.

The idea and motivation for forming the IPEH came from Alan Williams, who devoted a lot of time and energy to the initiative. Alan persuaded Raymond Illsley to act as a fellow motivator, and with the help of two of us (Adam Oliver and Richard Cookson), they selected and invited a group of individuals to join the IPEH during April-May 2000. The initial members were David Blane, Roy Carr-Hill, Richard Cookson, Raanan Gillon, Iona Heath, Raymond Illsley, Rudolf Klein, Julian Le Grand, Mark McCarthy, Adam Oliver and Alan Williams. Robert Dingwall and

Paul Martin were invited at a slightly later date, as it was decided that it would be useful to have a discussion paper that dealt with the issue of genetics, as were Mark Petticrew and Sally Macintyre when it became clear that we needed a paper that reviewed the evidence on the effectiveness and cost-effectiveness of health inequalities interventions. David McDaid joined the Panel in May 2000 to provide additional administrative and editorial input.

The work of the IPEH was discussed at a meeting attended by approximately 120 people, held at the King's Fund on January 29th 2001. The meeting was organised into three main sessions, falling under the general themes of:

Session 1: Which health inequalities matter most?

Session 2: What are the causes of health inequality?

Session 3: What's to be done about health inequality?

Six discussants, two in each session, were invited to give presentations. They were each asked to comment from their own perspective on the discussion papers that were written by the Panel members, highlighting the issues that they thought most important, particularly those issues that they thought the Panel had overlooked. John Wyn Owen and Anna Coote served as the discussants in the first session, David Leon and Peter Townsend in the second session, and Trevor Sheldon and Simon Stevens in the third session. The discussants have written papers based on their presentations, and they are included in this booklet. Dominant themes that arose during the discussion were that the Panel ought to have adopted a more internationally-minded approach, that the Panel had focussed too explicitly on downstream issues and had not paid enough attention to issues such as race, discrimination, globalisation and material deprivation, and that the Panel ought to have laid more emphasis on what could be done at the practical policy-making level.

The IPEH has now come under the wing of HEN (www.ukhen.org.uk), with many of the IPEH members serving on the HEN Advisory Board. The IPEH has helped to provide a focussed outlook for HEN, and a series of one day HEN seminars on specific themes in equity and inequalities in health will be held over the coming years.

The discussion papers

It is important to note that this set of papers is not a guide on how to reduce inequalities in health. It is a series of self-contained reflections on the issues that each author regards as important in the health inequalities debate, and no consensus was sought amongst the Panel members. *IPEH had a remit to raise and clarify issues, not to solve problems.*

This document is organised as follows. First, Alan Williams and Raymond Illsley provide a preamble to the IPEH discussion papers, where they detail the background and rationale for the Panel, and give a synopsis of the main issues that were raised by the Panel members. The IPEH discussion papers are then presented in their entirety. Since each paper is self-contained, each contains any tables or appendices to which its author draws attention, though all references cited within the papers are provided at the very end of the booklet. The papers produced by the discussants at the January 29th meeting follow the IPEH discussion papers.

Very briefly, in the papers that follow, David Blane provides a discussion of where we have got

to and where we should go in the health inequalities debate, Raanan Gillon examines the ethical status of the value judgements that are made about equity in health, Roy Carr-Hill and Alan Williams review the problems of measurement, Roy Carr-Hill also provides a note on how health care resources are allocated in the NHS, Mark McCarthy reviews the role of public health in the health inequalities debate, Julian Le Grand calls for greater clarity in the kind of health inequality that should form the focus of interest, Iona Heath outlines the role of the NHS in tackling health inequalities, Rudolf Klein argues against explicit health inequalities targets, Robert Dingwall and Paul Martin discuss the implications of genetic advances on inequalities in health, Raymond Illsley explores some policy options, Alan Williams provides some suggestions on how health inequality imperatives could be incorporated into the framework of economic evaluation, and Mark Petticrew and Sally Macintyre review the literature on the effectiveness and cost-effectiveness of health inequalities interventions.

Acknowledgements

We would like to acknowledge our gratitude first and foremost to Alan Williams and Raymond Illsley for providing the original inspiration for the Issues Panel, and for guiding it through all stages of its progress. We would also like to thank all of the Panel members and the discussants, who generously gave a lot of their time to this work. The willingness of such eminent figures to contribute their time in writing these discussion papers has been most heartening, and has not gone unappreciated. We are also indebted to all of those who attended the open meeting at the King's Fund to discuss the work of the Issues Panel, for contributing so constructively towards a lively and informative debate. The contribution of everyone involved in the work of the IPEH has been invaluable.

Finally, we would like to thank the King's Fund and the Nuffield Trust for their continuing financial and logistical support, which has made possible this contribution towards clarity in the debate about equity and inequalities in health.

Adam Oliver
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London, May 2001

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EQUITY IN HEALTH: AN INTRODUCTORY PREAMBLE

Alan Williams and Raymond Illsley

The pursuit of greater equity in health is fraught with difficulties, which start with differences of opinion concerning the meaning and significance of key terms in the debate, continuing through ideological differences about the nature of a good society, imperfect understanding of the underlying causal mechanisms which generate inequalities, varying assessments of which inequalities are the most inequitable, and ending with uncertainty about what, if anything, can realistically be done to remedy the situation.

It was not the intention of the Issues Panel for Equity in Health (IPEH)¹ to resolve any of these issues, but rather to identify them so that it would be possible to pinpoint where people's views differed. We started by asking each member of the panel to write a short note indicating where their chief interests lay, and the essence of their views. Then each person was asked (sometimes jointly with someone else) to take responsibility for writing a brief think piece on one broad topic, so that collectively we aimed to cover everything important. These essays were then circulated to the panel members for our only face-to-face meeting, which took place on 1st November 2000 at the Nuffield Trust. In addition, at that meeting, the panel considered a 'Table of Key Issues' extracted from a reading of the papers and compiled by Alan Williams, who chaired that meeting. Authors then had an opportunity to revise their documents to clear up possible ambiguities, but no attempt was made to persuade anyone to adopt a different view from that which they had expressed initially. It seemed to us better to expose and accept diversity than to attempt to reach any kind of consensus (which would inevitably have been anodyne and vacuous since we disagree markedly amongst ourselves on many issues).

The members of IPEH were encouraged to amend and expand the initial 'Table of Key Issues' to ensure that it covered everybody's principal concerns. We will highlight a few of the issues.

¹ IPEH was a small self-selected group of people, assembled on the initiative of Alan Williams, Raymond Illsley, Adam Oliver and Richard Cookson. Its members have very diverse backgrounds and interests, but their shared desire to make progress in this field led them to explore the possibility of creating a framework within which all our diverse views could be accommodated without any of us having to make concessions about our substantive beliefs. Its members comprised: David Blane, Roy Carr-Hill, Richard Cookson, Robert Dingwall, Raanan Gillon, Iona Heath, Raymond Illsley, Rudolf Klein, Julian Le Grand, Sally Macintyre, Paul Martin, Mark McCarthy, David McDaid, Adam Oliver, Mark Petticrew and Alan Williams. Through the offices of Adam Oliver (assisted by Richard Cookson and David McDaid) we conducted most of our discussions by e-mail, but we did have one face-to-face meeting on 1st November, 2000 in which we sought to explore each other's views, and agree on the programme for the meeting on 29th January, 2001.

Table of Key Issues

	Issue to be considered	Raised in the papers by
A	IPEH's terms of reference	
A.1	Is IPEH's central focus of interest to be inequalities in health itself rather than in access to, or utilisation of, health care or other services (except as instrumental)?	CW;H
A.2	Is IPEH's central focus of interest to be the UK (considering other countries only to the extent that this sheds light on our own situation)?	CW;G;M
B	What do we mean by equity?	
B.1	Is Aristotle's framework the best one to work with (are we concerned both with the equal treatment of equals and with the unequal treatment of unequals)?	G
B.2	Can we list all of the things that people might regard as morally relevant in judging the respects in which people might be regarded as equal or unequal?	G
B.3	Is there a distinction to be drawn between 'morally relevant' and 'politically relevant'?	G
B.4	To what extent should inequality reduction be constrained by respect for personal liberty (including the right to private health care)?	G
B.5	When making moral judgements about inequalities, to what extent should a person's fault or merit be weighed in the balance?	G
B.6	Is an inequality caused by a democratic decision to decentralise decision-making nevertheless morally reprehensible?	G
B.7	Is it morally unacceptable to deny the better off improved services that might be offered to the worse off?	K
C	What do we mean by health?	
C.1	In an equity context, should we be adopting a 'current health state' approach, or a 'lifetime health' approach?	CW;G
C.2	Which concepts of health are to be preferred when addressing inequalities in health?	CW;H
C.3	What are the rival definitions of 'health need' and 'health care need'?	G;H
D	Which inequalities in health matter most?	
D.1	Are social class differences the most important ones (compared, say, to ethnicity, gender, urban/rural, region, etc.)?	B;CW;K
D.2	What issues have recent official documents addressed and which ones have they left out (and why might this be so)?	B;CW;K
D.3	Where reducing health inequalities clashes with health maximisation, how should the balance be struck?	CW; G; W
D.4	How is the trade-off to be struck between immediate benefits to some and long-term benefits to others?	G;I
E	How should inequalities be measured?	
E.1	Are particular ways of measuring particular inequalities likely to bias their estimated magnitude upwards or downwards?	B;LG
E.2	Are trends in inequality likely to be more revealing than the level at any point in time?	I;M
E.3	To what extent do conventional summary measures of the extent of inequality already contain an implicit set of weights about aversion to inequality?	CW
E.4	What are the respective merits and demerits of different types and sources of data?	CW;H
E.5	Are there existing data sets which are under-exploited?	H
E.6	What data are we going to need in future to take us beyond the currently conventional measures?	H

F What causes inequalities in health?	
E1 What is the initial causal sequence between health and various indicators of demographic, economic and social status (which causes which, and to what extent are they mutually reinforcing)?	B;LG
F.2 What is the relative importance of each of the following broad groups of possible causes: a) behaviours b) psycho-social hazards c) material hazards and what other candidates are there (e.g. genetics)?	B;DM;I;LG;M
F.3 Does the relative importance of each of these factors differ according to the particular inequality under consideration?	
F.4 What is the balance of evidence concerned the importance of relative <i>versus</i> absolute deprivation?	B;M
F.5 Is longitudinal evidence to be preferred to cross-sectional evidence?	B;CW;M
F.6 How important is it to take a very broad historical perspective?	M
F.7 What impact are advances in genetics likely to have on current inequalities in health?	DM
G Through what agencies are remedies to be sought?	
G.1 Should we assign a central role to the health care system (and especially to primary care)?	G;H;M
G.2 Is target setting for particular agencies the way forward?	I;K
G.3 In view of the importance of family background, should this not be a more salient variable in remedial measures?	I
G.4 Are there any demonstrably worthwhile interventions at all?	LG;PM
G.5 What should be the future role of the public health community?	M
H What currently are the principal barriers to reducing health inequalities in the UK?	
H.1 Lack of consensus among analysts about the nature, causes and remedies of these inequalities?	LG
H.2 Lack of clarity among policy-makers concerning their own priorities, and which agencies are responsible for what?	I
H.3 Communication failures between the research community and those in the field?	H
H.4 Political sensitivities about media coverage of, and voter reaction to, positive discrimination which might disadvantage the better off?	
H.5 Lack of appropriate incentives in the resource allocation system?	C
I Why do we know so little about the effectiveness and costs of policy options?	
1.1 Are there insurmountable methodological obstacles to getting better evidence?	PM
1.2 Should inequality policies be evaluated more rigorously, using quasi-experimental study designs, and incorporating costs as well as health outcome measures?	
1.3 Could more be done to evaluate policies using existing data, through more sophisticated secondary review and analysis techniques?	
1.4 Are there special difficulties with evaluating inequality-reducing policies compared with health policies in general?	PM

Key to papers:

B = Blane

C = Carr-Hill

LG = Le Grand

CW = Carr-Hill & Williams

DM = Dingwall & Martin

G = Gillon

H = Heath

I = Illsley

K = Klein

M = McCarthy

PM = Petticrew/Macintyre

W = Williams

Items without attribution arose in subsequent discussions.

Section A: IPEH's terms of reference

In narrowing our focus to equity in health within the UK we are not implying that inequities in health at an international level are unimportant, or that the UK should not play an important role in alleviating those inequities. But there is another body with that wider perspective,² and with such a large agenda of our own it would be foolish to attempt to duplicate their role. The other distinctive aspect of our frame of reference is our focus on health itself, rather than on agencies concerned with health, such as the NHS. This broader perspective is very important and needs constantly to be kept in mind. Again, this is not to deny that at some point we have to assess which agencies might be the best ones through which to seek an amelioration of the present situation in the UK, but we must not automatically place any one agency in a central role to the exclusion of others. Inequities in access to health care may prove to be a contributory factor in causing inequities in health, and may therefore need to be remedied, but the objective is remedying the inequity in health, and access to health care is here to be seen as instrumental in pursuing that more fundamental objective.³

Section B: What do we mean by equity?

Many people take it for granted that the identification of an inequality is *ipso facto* the identification of an inequity, but this is not necessarily so. Moreover, there are other sources of inequity besides those generated by inequalities. Some preliminary moral discourse therefore seems called for, not because it will be conclusive, but because it may reveal one of the hidden sources of disagreement between protagonists in this debate, and help to clarify what is at issue between them.

Section C: What do we mean by health?

There are many different ways of representing a person's healthiness, and each will focus attention on a particular attribute of a person's situation. This may well become a source of disagreement between observers as to whether one group of people is more or less healthy than another group, or as to whether the trend in healthiness over time is different between them. Although the health concept used in any particular study is usually clearly stated, those interpreting its implications in a wider context may lose sight of that specificity. The broad issue here is whether some concepts might be more appropriate than others in a particular situation.

Section D: Which inequalities in health matter most?

Most of the public discussion in the UK has centred on geographical inequalities and social class inequalities (which often overlap), but in some contexts other inequalities are also significant (e.g. differences by age, sex and ethnicity). But there is also a broader issue to consider, namely how important for the welfare of population is the reduction of inequalities in health compared with raising the average level of health? There may be cases where these two

² The International Society for Equity in Health (www.iseqh.org).

³ In other contexts, more equitable access to health care may of course be seen as an objective in its own right, irrespective of its implications for equity in health.

objectives conflict, and then the issue of 'which matters most' will arise in this broader context, and some inequalities are likely to be regarded as being worth larger sacrifices in population health than others are.

Section E: How should inequalities be measured?

Just as there are many different concepts of health that might be used, so there are many different ways of measuring inequalities within each of them, and they will each have their own characteristic measurement properties. This can be seen at its simplest with the choice between measures of central tendency, where the comparison of means, medians and modes between different groups may give quite different results. This is equally true (though not so easily discerned) in conventional summary measures of variance, skewness and inequality, each of which assigns specific weight to individuals according to where they are in the distribution of health. When to all this is added the further interpretative complications from the use of imperfect data (which may nevertheless be the best available) it is obvious that even when the conceptual difficulties have been cleared away, there is still plenty of room for disagreement about the interpretation of empirical findings due to the actual measurements that have been presented.

Section F: What causes inequalities in health?

Probably more has been written on this issue than on any other in this list, and, since it is the core issue, that is neither surprising nor inappropriate. But unfortunately it remains contentious and disputed territory, sometimes generating more heat than light. It might help to clarify matters by initially supposing that different inequalities have different causes, and that these causes might change over time as economic, political, medical, scientific and social circumstances change. Thus the particular historical circumstances may lead to different conclusions for the UK from those reached elsewhere. Whilst the search for 'the' cause is almost certainly misguided, the search for principal causes is important if remedial policies are to be soundly based. In conducting that search a very wide range of issues has to be addressed, possibly wider even than those we have listed here.

Section G: Through what agencies are remedies to be sought?

The notion of 'agency' here should not be interpreted wholly in institutional terms, since it might also encompass self-help groups and intra-familial activities. But public policy implications are inevitably our principal focus of interest, which is perfectly understandable if official intervention at some level in the system is likely to be needed even to stimulate and facilitate changes in individual attitudes or behaviour. For this reason it is important to assess (and recognise) the potential and limitations of different public and private agencies, if feasible and effective remedies are to be devised, and it may even be necessary to create new ones. Even with a good working understanding of the causal mechanisms, and good data indicating their relative importance and susceptibility to particular interventions, we still need to find feasible mechanisms that can effect improvements at reasonable cost.

H: What currently are the principal barriers to reducing health inequalities in the UK?

Here, even more than elsewhere, we are in territory where opinions differ sharply, and where rival positions can only be tested by following their policy implications to see if they work. Some broad categorisation of rival views is the best we have been able to achieve, and we think they are best regarded as hypotheses awaiting testing. But in a more immediate context they are to be seen as the beliefs that help to explain why those holding each of them have committed themselves to improve equity in health by operating in different realms of action. Those who have chosen the analyst's role face not only the various intellectual difficulties listed earlier, but also the important additional factor that they are drawn from different disciplines, each with its own culture and characteristic research paradigm, which makes the exchange of knowledge between them difficult. Likewise the 'policy-makers' do not always recognise themselves (or each other) as playing that role. They may see themselves simply as practitioners deciding how best to devote their own time and energy to the conflicting demands made upon them, and regard as 'policy-makers' only those politicians with explicit responsibility to the electorate for the policies pursued at national or local level. But policy is made at many different levels in the system, and there is no guarantee in any agency that what those at the top think is guiding the system is necessarily what is guiding the behaviour of those at the point of contact with the people the agency serves. This raises another important issue, which is whether the incentives created by the system of resource distribution are appropriate or perverse when it comes to encouraging the pursuit of policies which would reduce inequalities in health. The gap between analysts and policy-makers can be another major obstacle to effective action. This leaves us finally with the problems faced by those whose task it is to resolve conflicts of interest that are being played out in a very public adversarial forum where the dominant notion of 'evidence' is very different from that employed in a scientific or managerial (or even legal) context. This raises the important question of how we wish to distribute our attention and energies between these various tasks in future activities.

Section I - Why do we know so little about the effectiveness and costs of policy options?

The notion that policies should be based on systematic evidence that goes beyond that commonly brought to bear hitherto in 'political' discussions raises a final set of issues as to why that kind of evidence might be so sparse. It could be that the difficulties are methodological (e.g. formulating the policy issue in a manner that makes it empirically researchable, given the available research tools, is very difficult). It could be that people are unwilling to embark upon the kind of information-gathering activities that rigorous hypothesis testing requires. It could be that existing knowledge is so fragmented that we do not exploit it efficiently. Or it could be that the field of 'equity in health' is so much more difficult than any other field of study that we are bound to lag far behind what has been achieved elsewhere. Who knows? But since each potential candidate suggests a different course of remedial action, it may be important to form a view on which is likely to generate the most progress in the short or medium term so that we know where to concentrate resources.

The IPEH meeting

The Issues Panel deliberately decided not to attempt to resolve any of the above issues, but to concentrate on getting them into some sort of order. We asked the discussants of the meeting on January 29th 2001 to do likewise. Each discussant was asked to address the following two questions:

1. From your perspective, have we covered the major issues, and, if not, what is missing?
2. In what order of importance would you place these matters?

But we should not continue simply trying to identify controversial issues without actually confronting them. The problem we face is deciding what distinctive contribution can we make that exploits our assets without straining our resources. Our main assets are our very varied backgrounds and our common commitment to improving equity in health. Our resources are mainly personal goodwill and dedication, aided by a very small amount of finance from charitable sources to cover the logistical costs of communicating with each other, by email and snailmail and by holding occasional meetings. This suggests that our main role should be to act as a forum for multidisciplinary discussion between people with very different roles, which takes people out of their normal environment and provides insights that they might not otherwise have. But if that is to work, it places a heavy responsibility on participants to strive to communicate in plain English, to be patient with those having difficulty with arcane concepts and terminology, and to adopt a persuasive educational mode rather than a polemical or hectoring one.

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WHERE HAVE WE GOT TO? WHERE SHOULD WE GO?

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Our understanding of health inequalities has come a long way since the Black Report (Black et al., 1980). Some two decades of research since 1980 has established that health inequalities are real (goodbye *artefact* explanations⁴) and uni-directional (exit *selection* explanations⁵). Freed from distracting clamour about numerator-denominator biases,⁶ health-related social mobility⁷ and their like, we can concentrate, at last, on the *causes* of social class differences in health.

Social class differences in health are a fascinating example of the social affecting the biological. Social classes, self-evidently, are a human creation, yet they influence our chances of health, disease and premature death which, equally self-evidently, are biological phenomena. There are two potentially important aspects to this situation. First, 'the social determinants of health': a phrase which encapsulates our potential contribution to understanding the causes of health and disease; if you like, to understanding the environmental part of gene-environment interactions. Second, 'interventions': despite the current excitement about possible gene therapies, changes to the social and physical environment remain the more realistic way of trying to promote health and prevent disease and premature death.

In addition to motivation and intellectual space, for the time being we benefit also from a government which is keen to reduce class differences in health. Establishing an independent inquiry into inequalities in health was among its first actions on coming to power. The resulting Acheson Report (Acheson, 1998) built on the two decades of research post-Black and on previous official and quasi-official reviews (NHS Centre for Reviews and Dissemination, 1995; Variations Sub-Group of the Chief Medical Officer's Health of the Nation Working Group, 1995). The simplest way of answering the first question posed by this Introduction (Where have we got to?), is to point to the evidence presented to the Acheson Committee (Gordon et al., 1999) and the priority areas and recommendations of its report (Acheson, 1998). We need to recognise, however, that a considerable amount of new knowledge will emerge over the next few years. The Economic and Social Research Council, the Medical Research Council and the Department of Health (to say nothing of the European Science Foundation, the European Union, the

⁴ Artefact explanations suggest that apparent social class differences in health could be due to the methods by which the phenomenon is measured.

⁵ Selection explanations suggest that social class differences in health could be due to the health of individuals determining their social class position.

⁶ Numerator-denominator bias refers to the distortion of social class differences in mortality which could result if people's occupation, and hence their social class, was reported differently at decennial census, which gives the denominator, and death registration, which gives the numerator.

⁷ Health-related social mobility refers to the idea that social class differences in health could result from the differential social mobility of the healthy (upwards) and the unhealthy (downwards).

MacArthur Foundation and the National Institutes of Health) have established research programmes into inequalities in health. Results from these studies will be reported at various times during at least the next five years. We are working with a knowledge base which may change rapidly.

The second question asks, where should we go? Two main routes are apparent. The first involves maximising the benefits to be gained from existing knowledge. A widespread feeling exists that work is required in such areas as:

- Cost-benefit analysis of the Acheson Report's various recommendations;
- Criteria for prioritising these recommendations;
- Methods of health inequality impact assessment;
- Methods of target setting;
- Methods of monitoring and evaluating the implementation of the Acheson recommendations.

Some studies in these areas have been funded already, but much work remains to be done.

The second route involves understanding the causes of social class differences in health. Social classes differ in three ways which could affect the health of their members. Classes differ in the prevalence with which they adopt health-damaging and health-promoting behaviours. Classes differ in their level of exposure to psycho-social hazards. And classes differ in their level of exposure to material hazards. Important questions remain unanswered about each of these socially and biologically plausible pathways between social class and health. These questions are being debated at present in the following terms:

(i) Relative versus absolute effects

This debate stems from the work of Richard Wilkinson, who uses aggregate national and US State data to argue two points. First, the absolute effect of living standards on health in rich countries has ceased to be of decisive importance, because the basic needs of the great majority of these populations are being satisfied. Second, the persistence and widening of health inequalities in these countries is due to the effects of relative poverty (such as the humiliation of not being at the top of a social hierarchy; and the anger and frustration at being poor while others are rich) and the corrosive effect of inequality on social solidarity (the hostility and lack of trust between members of unequal societies).

Certain key terms within this debate, in particular 'basic needs' and 'relative poverty' have a long history within social science which contrasts markedly with the rarely questioned and somewhat commonsensical way in which they are used within social epidemiology. Clarification of these issues would be a most useful contribution to this debate.

(ii) Psychosocial versus material factors

This debate stems from the work of Michael Marmot, who uses Whitehall II study data to argue two points. First, the difference in mortality risk between, for example, civil service administrators and their professional and executive colleagues cannot be due to material factors, because both grades of civil servant receive salaries which are more than sufficient to meet their basic needs. Second, the mortality difference between these groups is due to psychosocial factors

related to work, such as demand-control strain and effort-reward imbalance, and general lifestyle (classic behavioural risk factors).

The emphasis of social epidemiology on psychosocial factors down-plays the contribution of other potentially relevant disciplines. Occupational and environmental epidemiology have identified a range of health hazards, exposure to which is likely to vary by social position. Social policy, similarly, has identified many knock-on effects of poverty which are likely to affect health. These more material aspects of social disadvantage are likely to cluster with its psychosocial aspects to affect health either in combination or interactively. Analyses of the social structure which examine the intertwining of its material and psychosocial aspects would help take this debate forward.

(iii) Cross-sectional versus life course effects

This debate stems from a variety of sources including Michael Wadsworth, Mel Bartley and George Davey Smith. The life course perspective on health inequalities recognises that the diseases which contribute most to these inequalities are chronic and degenerative, with long natural histories often stretching back decades. This recognition has been reinforced by David Barker's work on biological programming and the analyses which became possible with the maturing of the 1946,1958 and 1970 British birth cohort studies. From the life course point of view, social class differences in health result from the social structuring of advantage or disadvantage, and their accumulation across life. Key issues remain unresolved about the pathways and processes by which these effects are produced.

In summary, now is an excellent time to bring new disciplines into the study of health inequalities and to re-activate personnel who previously made distinguished contributions to this intellectual endeavour. Much work remains to be done.

VALUE JUDGEMENTS ABOUT EQUITY IN HEALTH

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Aristotle was surely right when he said that justice was clearly about equality but *not just* about equality. Rather it was about equality in relation to some other morally relevant property or properties. What is sometimes referred to as Aristotle's formal theory of justice states that equals should be treated equally and unequals should be treated unequally in proportion to the morally relevant inequalities. Ever since, for 2500 years, philosophers, theologians, politicians and we the people have been arguing about what *are* the morally relevant inequalities that make it just to treat people unequally. And while the question of what should be meant by 'equals' is not so frequently addressed, that too is a vital question for any adequate substantive theory of justice, including any theory of distributive justice for scarce health care resources.

The members of IPEH recognise a wide disparity of views about the proper contents for any such substantive theory. While various views are represented amongst the members, most agree on the following propositions:

(i) There are morally respectable competing claims for how to limit the 'scope' of our obligation to provide resources to others (i.e. to decide who, or even what - animals for example - should be eligible to receive any of our limited resources). For an obvious example, some would wish us to consider within our remit our obligations to provide resources for improving health care to people outside the UK. Inequalities in health, they argue, are as important, perhaps more important, when considered globally than they are when considered within the comparatively healthy context of the UK. On this issue, the members of IPEH acknowledge both the controversial importance of this issue, and the need for richer nations to contribute towards meeting the needs of poorer nations. It decided:

(a) To limit the scope of its own work to consideration of inequalities in health within the UK.

(b) To reject any substantive theory of justice that rejects even a *prima facie* obligation to help those in health need simply because they live in different countries. An acceptable theory of justice ought to include some *prima facie* obligation to provide some help to those in health need regardless of where they live. In this sense the equalities that justify equality of consideration are their common humanity - an equality of humanity - and their equality of human need. But the members of IPEH acknowledge too that a substantive theory of justice would also require respect for the autonomy of those expected to donate the resources necessary to help those in health need. Such deliberation will include consideration of competing interests, including other moral obligations as outlined below, and including perceived special obligations to those who are in some particularly important relationship to the giver. It is thus a matter for deliberation and decision, both personal and political, as to what should the extent of this *prima facie* obligation to help those in health need. Nonetheless, some international obligation to those in health need should be acknowledged.

Health need is the most widely accepted and least controversial of the various candidates for morally acceptable inequalities that justify treating people unequally when distributing scarce health care resources. The members of IPEH agree that at least a necessary condition for an adequate substantive theory of distributive justice for scarce health care resources would be that scarce communal health care resources should be distributed in proportion to health care need, with the greater the need the greater the *prima facie* claim to consideration and necessary resources to meet that need.

The members of IPEH recognise that in assessing health need there is a potential conflict between assessing people's health need at any particular time and assessing it over people's whole lives.

In this context I hope we shall differentiate between meetable and unmeetable need. I shall argue that even unmeetable need creates an additional moral claim such that people with unmeetable health care needs have additional *prima facie* claims to having their meetable needs met (for example people dying from incurable diseases, or people with incurable disabilities, have - at least currently - unmeetable health care needs, notably to cure their incurable diseases, or to cure their incurable disabilities. While this in no way justifies using ineffective treatments to try to achieve these unachievable ends, it does justify giving them extra (unequal) consideration and resources for meeting their meetable health care needs (for example by providing good palliative care, better facilities for compensating for their disabilities, and doing research to find ways of meeting their currently unmeetable needs); and the greater are people's unmeetable health care needs the greater their *prima facie* claims on our consideration and resources.

(ii) The members of IPEH acknowledge that a second morally relevant consideration that can properly compete with need as a criterion that justifies treating people unequally when distributing scarce health care resources is the amount of benefit produced by a unit of resource - with a *prima facie* obligation to direct scarce resources at those who are more likely to benefit rather than towards those who are less likely to benefit and, other things being equal, a *prima facie* obligation to aim to produce the greatest overall benefit. The members acknowledge that both of these are morally respectable criteria and that each may in many circumstances simply conflict with the criterion of need, as well as with each other.

The greater amount of benefit criterion can apply both at the individual level and at the population level, and can be considered from the point of view of people with similar medical or health care problems or from an aggregated health benefit perspective. Such consideration may often lead to different and mutually inconsistent decisions. Admission to an intensive care unit may prolong the lives of two patients with severe brain damage. But one patient with known prior and probably irreparable brain damage is considerably less likely to recover any degree of independent function than the other who, say, has suffered acute and potentially recoverable brain damage in a road accident but has not had any significant prior brain damage. Many would argue that a single available ITU bed should go to the latter rather than the former, though others might argue that in such a case the bed should be distributed at random - e.g. by the toss of a coin. On the other hand, if the amount of aggregated health benefit is to be the criterion then it might turn out that such beds should not be available for either candidate, since far greater aggregated health benefit (for example as measured by QALYs, DALYs etc) could be obtained by putting the resources into hip replacement surgery, or anti-smoking measures.

Clearly this population benefit maximising approach can and often will conflict with an individual benefit maximising approach; and both can and sometimes will conflict with a needs orientated approach.

Even within the benefit maximising approach there is a major tension between provision of benefits to those who are already ill (and thus in current need) versus providing benefits to those who are not currently ill (and thus not in current need) in order to prevent them from becoming ill. While prevention is better than cure, in practice 'prevention' may not prevent so much as postpone and/or alter subsequent need, and both are justifiably desired; all that the members were able to agree about this was that there is an inevitable tension between the two, with some members wanting greater emphasis on provision of resources for prevention even at the expense of resources currently devoted to cure and care.

(iii) A third morally relevant criterion for justly treating people unequally in the distribution of scarce health care is respect for people's autonomy or thought out choices for themselves (which here I shall simply assimilate to a 'thick' concept of personal liberty). This applies both to the people who are potential recipients of the scarce health care resources and to the people who provide those resources (and these may or may not be the same people).

Thus and most obviously a person in great need of health care and likely to gain considerable benefit from it may nonetheless autonomously reject those resources. I assume that none of our group will wish to impose health care on such people on the grounds that they need and will benefit from it (and agree that this is the case). If so we shall be giving greater weight in such cases to respect for people's autonomy rather than to meeting their needs and or providing them health benefits.

What about respect for people's autonomous desire for health care? I presume, but of course perhaps wrongly, that the members of IPEH agree that within the NHS people's autonomous desires for scarce health care resources will have lower priority than distribution in relation to people's need for health care; and indeed in some circumstances lower priority than distribution in relation to the probability of health gain.

But what about people's autonomous desire for health care outside the NHS when they are prepared to pay for it themselves? I hope we will recognise that there are moral justifications in respect for people's autonomy for the provision of health care privately in addition to provision under an NHS, that this health care may not necessarily be in proportion to health need (think for example of cosmetic surgery in cases where there is no health need, merely a desire for, say, more attractive breasts or noses); nor necessarily in relation to health benefit, nor indeed to any other sort of actual benefit.

Finally, in this context of respect for autonomy as a morally relevant criterion for justly treating people unequally, what about respect for the autonomy of those providing the health care resources, not when they are the consumer of the resources but when they provide the resources as a community, for example as taxpayers in countries with national health services, or with special limited community health services for the poor or elderly (think of the Oregon experiment in distributing scarce health care resources). If democratic processes are seen as in part mechanisms for attempting to respect the autonomous views of members of those communities, then should not the views of those communities have a legitimate role to play not only in deciding how much of their taxes should go to health care but also how they should be divided amongst different claimants to those health care resources?

(iv) A further candidate criterion for justly treating people unequally is desert in relation to a person's fault or merit, retrospective or even prospective. While in some areas of justice (legal justice and 'competition justice' are two examples) there is little dispute that merit and fault are potentially relevant criteria for justly treating people as unequal (and for example justly punishing those at fault and rewarding those demonstrating merit), it is probably accurate to assert that there is widespread doubt, at least within both medicine generally and within academic medical ethics, about its relevance to the distribution of scarce health care resources. Part of this doubt stems from epistemic worries about the possibility of reliably distinguishing ill health caused by 'fault' from ill health caused through no fault, part from a widespread desire to treat all health care need of equal magnitude as of equal desert, no matter how caused, and part from the practical and resource problems that implementing a quasi judicial criterion of fault and merit for distribution of scarce health care resources would entail.

A further issue relating to merit contrasts the political and educational concern for equality of opportunity with the health professional concern with equality of outcome: 'When health and social position are so closely linked you cannot have equality of health outcomes in a meritocracy' (Raymond Illsley, below). Quite so, but what may be just, within a liberal democracy, is that health interventions should aim at producing equal health benefits proportional to people's equal meetable health needs. Achieving this may well require differential resources (for example, in favour of those who for one reason or another, including social deprivation, have difficulty in making use of health services) - but it does not require a general concern with equality of health, nor a general concern with equalising health between different social classes.

(v) Part of an adequate theory of distributive justice for scarce health care resources should also be to decide which morally unacceptable criteria for treating people as unequal are in practice being applied, or threaten to be applied, and then to decide what priority should be given to eliminating and/or preventing such unjust practices. For example, if it were found that resources were distributed or threatened to be distributed according to social class preferences, or racial preferences or geographical preferences of (say) doctors, and assuming that this is agreed to be unjust, what priority in resource allocation should be given to eliminating or preventing such unjust distribution, given that mechanisms to do so will themselves require resources and thus further reduce the available health care resources?

One issue is whether distributing scarce health care resources differentially on the basis of special commitments to certain people or groups of people can be morally justified. My own view is that it can, and that it is quite proper, for example, for a doctor to give some priority to his or her own patients over the patients of another doctor (though this must not be an absolute priority - take for example the obligation to treat or advise people in emergencies whether or not they are the doctor's patients). Similarly, it is morally justified for an area or regional health authority to give priority to patients/citizens living within its area of responsibility over those living elsewhere. But of course such differentiation can lead to 'post-code' rationing. It is not at all clear to me that post-code rationing is intrinsically a bad thing, nor that it is in principle any different from the large scale post-code rationing represented by acceptance of national budgets for health care being mainly allocated to residents or even nationals of the nation concerned.

(vi) I hope the IPEH members agree that these competing moral concerns cannot always be

reconciled and indeed that equity within the NHS will often involve rationing or prioritisation in ways that honour one or more of these moral values at the expense of one or more of the competing moral values. I personally do not believe that there is any way of reconciling all these competing moral values or of obtaining universal agreement about how to prioritise them in particular types of case or in particular cases. I suspect that choosing between competing moral values involves a complex mix of emotions and intuitions, social and cultural norms. I believe that the best we can do and therefore the best that we should aim to do, is to seek to represent all the competing moral values to some extent in our system, whatever it may be, (rather than simply excluding one or more values as being of lesser importance). We should accept that different cultures may choose different priorities, and the same cultures may change their priorities at different times. We should then make clear what system or systems we have established, following wide social consultation, for making such choices and make the system itself reasonably 'transparent'. We should make explicit how public views are assessed and how they influence both the nature of the system established for making such choices and how they influence particular choices. Finally we need some sort of appeal system available to people who challenge either the agreed system itself or the working of the agreed system, as well as some system for regular review and if necessary reform of the workings of the system.

(vii) I very much hope that while the members of IPEH may state that more resources devoted to health care would reduce some of the problems that stem from inadequate health care resources, no amount of resources that in practice could be made available would be sufficient to provide for every health care need, let alone for every health care desire. Thus the problem of a just distribution of scarce health care resources would remain even if a government were to double the percentage of GNP made available to health care.

(viii) The main conclusions that I would like us to draw from these points are that there will inevitably be competing moral values represented in any adequate theory of distributive justice for scarce health care resources - i.e. health care rationing, prioritisation or equity - and that all of those moral values are morally desirable; are moral goods. Given the starting premise - inescapable in practice - that not all these moral goods can always be achieved, any decision is likely to override at least one of these goods and therefore there is bound to be moral dissatisfaction with the decision, even if it is considered to be a good decision in the circumstances. As well as trying to minimise such dissatisfaction by the measures specified in paragraph (vi) we should, I think, build in to our conclusions that any decision that fails to honour all competing moral values in any case or type of case is bound to leave residual moral dissatisfaction even if it is a good decision in the circumstances. Therefore even good equity decisions in the context of scarce resources are likely to leave residual moral dissatisfaction. Far from trying to deny the appropriateness of such dissatisfaction we should honour it - and be morally concerned if it is absent!

MEASUREMENT ISSUES CONCERNING EQUITY IN HEALTH

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Prior contextual assumptions

Our distinctive focus as a group is on inequalities in HEALTH, not on inequalities in resources, or in access to, or utilisation of particular services. It may turn out that some of these resource-related or service-related inequalities help to explain the inequalities in health, but that makes them instrumental rather than fundamental.

Our realm of interest is the UK, and inequalities within it, including inequalities between the component parts of the UK, but not inequalities between the UK and other parts of the world. Again, the latter may nevertheless be of interest in helping us to understand the UK situation, but that is the only reason why we as a group are interested in them.

Prior conceptual matters

Before we can start measuring inequalities in health we need to be clear about which concept of health we are using, and why.

We also have to beware of confusing the measurement of inequality with the measurement of inequity. The former is a factual matter, the latter is an ethical judgement. It is possible to measure the strength of people's aversion to inequalities in health or the strength of their views about the political importance of inequalities in health, distinguished by the nature, size and cause of the inequality, so it is not the case that this ethical dimension is incapable of quantification.

It is important to note that all of the summary measures of the extent of inequality (such as Gini Coefficients and the Atkinson Index) give a particular set of weights to different parts of the distribution and therefore weight people according to which part of the distribution they are in. Thus, in using any particular summary measure for policy purposes, an implicit commitment to the ethical appropriateness of that particular set of weights has been made. Of course, proponents of the different indices are well aware of this; but it does mean that distinguishing the factual (positive) approach from the judgemental (normative) approach, when using these summary indices, is extremely difficult. Moreover, although the same argument does not directly apply to more 'raw' measures such as the direct comparison of death rates between socio-economic groups, the decision to make that comparison (rather than another one) is of course a normative decision.

Choosing a concept of health

To some extent the appropriate concept of health to measure must be contextual to the policy issue under discussion, but in general terms there is a hierarchy which is established by considering how much of a person's whole lifetime experience of health does that particular item cover. For instance, differences in (quality adjusted) life expectancy cover the rest of a person's life. Age at death covers the whole of their life. Childhood sickness covers only a small part of a person's life, but may be good predictors as to what the rest will be like. Generally speaking, the argument here is that one should prefer to analyse lifetime consequences, and the further removed a health concept is from this, the less significance it has for our particular concerns.

A further problem arises when measures are used which are not easily attributable to particular individuals, because then the possibility of multiple health deficits concentrating on particular (groups of) people may be missed. This is a particular problem with the health of the old, where multiple morbidity is the norm.

Health concepts which are frequently found in the inequalities literature are:

Biomedical concepts: e.g. diseases (incidence, prevalence, risk factors);

Length of life concepts: e.g. life expectancy, survival rates, mortality risks;

Quality of life concepts: e.g. disability, pain, mood, functional capacity, self-reports of (limiting) long-standing illness;

Composite concepts: e.g. time without symptoms or disease, disability free life expectancy, quality-adjusted life expectancy, avoidable mortality;

[Note that some of the literature will also use concepts such as utilisation which we have explicitly excluded from this discussion]

They may each be measured:

Cross-sectionally at a point in time;

Trend in cross-sectional data;

Following particular individuals over time (panel data);

Estimated whole lifetime experience for individuals;

Although it would be a major task, it would be useful to classify the major studies according to where they fall in this double taxonomy. It is likely that the different concepts and approaches to measurement produce different results and conclusions, according to the purpose of, and the audience for, the study.

Choosing a target sub-population

There is a school of thought which argues that one should not choose a target population *a priori* but simply work on data about individuals, and then let their salient characteristics emerge if they have explanatory value in accounting for inequalities in health. The alternative view is that we do have a prior policy interest in particular socio-demographic groups, and that we should choose the sub-populations for which the analysis is to be done accordingly. The first of

these approaches is equivalent to choosing subgroups *ex post* according to how great the inequalities are between them, and the second is equivalent to choosing them *ex ante* according to their political sensitivity. They will not necessarily highlight the same subgroups. For instance, the differences in life expectancy between men and women are roughly the same as those between males in social class 5 and males in social class 1, yet it is the latter that attracts most policy interest. Geographical differences play a prominent role in the formulae for distributing finance, and the NHS Executive is currently exploring the possibility of adjusting resource allocation mechanisms to address more directly conditions where there are the greatest inequalities in outcomes.

It may also be of great interest to investigate why policymakers are sensitive to potential health inequalities which turn out not to exist, and why they are not interested in sizeable ones which do exist. Such an analysis could echo the international comparative analyses of why inequalities in health are a concern in one country and not in another published in Fox (1985).

Amongst the subgroups that are commonly analysed are:

- Biological: age, sex, ethnicity, genetic endowment;
- Socio-economic: social class, education level, culture, occupation, income, wealth;
- Geographic: place of residence or work, urban/rural, environmental quality;
- Risk Status: drinkers, homeless, smokers.

Degree of aversion to inequality

The question as to which inequalities are to be regarded as the more inequitable can be tackled in two ways: the theoretical and the empirical. The theoretical route takes us into a discussion of the respective merits of rival principles of distributive justice and where they lead us. The empirical route leads us into surveys of public (and professional) opinion about which inequalities people feel should be the major focus for public policy, and how much weight these equity concerns have compared with other concerns. There is plenty of tension between the two approaches, with 'experts' distrusting 'populist' positions and vice-versa.

Since our immediate concern is with measurement issues, it is the empirical approach on which we must concentrate. There are two kinds of measurement approaches in evidence: one counts the number of people who hold various views, and the other measures the relative intensity of people's views. There is no technical reason in principle why they should not be combined to give some weighted intensity of aversion to different inequalities. It would also be of interest to know what background characteristics of respondents are associated with the different views.

[We are assuming that it is not part of our remit to go into the measurement problems associated with attributing causes to inequalities, but only to think about the measurement of the inequality itself.]

Typical Data Sources and their Limitations

Although the focus is on inequalities in *health*, nearly all of the analysis and argument is based on comparisons (and statistical analyses) of death, disease or illness. There are very few (none?)

making comparisons of levels of health (assuming that there could be agreement about which concept to use).

There are five main sources of data:

- Birth and death registers with, in principle, 100% coverage;
- Censuses, again with presumed 100% coverage;
- Other Registers with pretensions to 100% coverage;
- Cross-Sectional National Sample Surveys;
- Longitudinal Surveys.

Birth and Death Registers

There is no evidence that these registers are other than 100% complete. However, the classifications of cause of death are suspect and can affect comparisons, for example, of avoidable mortality.

Census

For the UK, we know that the presumption of 100% coverage of the 1991 Census is not secure and indeed, ONS has attempted estimates to compensate for Thatcher's missing million. This affects both age group comparisons (as young men are presumed to be the most under-counted) and ethnic group comparisons.

Other Registers

For example, the Cancer Registry sets out to document all cancers in the UK. However, in practice, the application of the criteria for someone appearing on the registry varies between areas.

Cross-Sectional National (Household) Surveys

There are several problems when using survey data to address inequalities in health: sampling frame usually restricted to households; adequacy of sample size to address the problem; consistency in the quality of the data collected (this also applies to interview based censuses); and non-response. The latter is particularly difficult to handle since it is clearly possible that non-responders are more ill than responders.

Longitudinal Studies

Their advantage over cross-sectional studies is that the temporal dimension is part of the design; but they suffer more than cross-sectional surveys from attrition. Moreover, issues which are now seen as important may not have been addressed because they were not seen as significant when the longitudinal study started.

Interpreting the Results of Analysis

In this area, it is tempting to construct trends from series of cross-sectional data. This raises the problem of the comparability of the sub-groups at different points in time both in size and salience. A similar problem arises when attempting to construct lifetime profiles from cross-sectional data from different cohorts; although with long-running series of cross-sectional surveys this can be in part circumvented.

[In addition, of course, there is the problem of interpreting (cross-sectional) associations as reflecting (over time) causality, but we are presuming that this is outside our remit.]

General observations

It is very difficult to compile a coherent and comprehensive picture of the state of health inequalities in the UK because, depending on their particular interests and expertise, different investigators use different concepts of health, different summary measures of the degree of inequality, and different data sets (often difficult to generalise from because they are specifically collected for the particular purposes of their own studies). Moreover it is very rare for anyone to address systematically the issue of which inequalities are more inequitable than others, it being implicitly assumed that all inequalities in health are inequitable so that must be a sufficient justification for seeking to reduce them. The measurement issues raised in the quantification of individual and/or societal degrees of aversion to different health inequalities is a major hiatus in this field.

EQUITY IN HEALTH: A NOTE ON RESOURCE ALLOCATION

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Most public services in European countries, whilst provided locally, are provided out of general taxation (the USA is different, and most developing countries are different!). The purpose of this note is:

- to lay out the rationale for formula funding as distinct from any other mechanism;
- to very briefly document the extent to which resources for public services are distributed equitably between geographical area and groups as a result of formula funding;
- to consider the potential for incentive mechanisms to reduce inequalities.

Rationale for formula funding

It has to be repeated that this is NOT the same as distributing resources to achieve, or even necessarily aspire to, an equitable outcome. If we take the European (Weberian bureaucratic rationality) as a model, then there are four possible mechanisms for distributing funds:

- (i) according to the size of bids from local areas;
- (ii) on the basis of political patronage;
- (iii) according to historical precedent;
- (iv) on the basis of some independent measure of needs.

When distributing public resources in the context of decentralisation - or perhaps more usually unstoppable public demand for local accountability - there is an increasing tendency to use formulae so as to avoid political pressures from both above and below.

The technical reasons for formulae distribution of funds are:

- The centre wants to be seen as fair and non-partisan. A formula appears to treat everyone the same way. A formula that appears to have been derived in a reasonable (or fast) fashion is more likely to be accepted by the competing recipients.
- To achieve equity objectives recipients (area providers) have to be funded on a level playing field. If certain providers were to receive more than their fair share (given the characteristics of their populations) they would be able to offer better public services.
- If recipients are not provided with funds corresponding to the 'relative' needs of their clientele, they may 'cream-skim' only the less needy clients, so that it may be difficult for more needy citizens to secure the public services to which they are entitled.
- The use of formulae allows an explicit presentation of the criteria for funding - facilitating an informed dialogue - at least among the elite.

- Whilst bidding for funds, simple statistical extrapolation or political patronage appear simpler to implement in the short run, they may generate enormous political pressure in the long run.

Formulae are increasingly used in the North (usually called 'developed' or 'industrialised' countries - I like to call them 'over-serviced' countries). A review of capitation methods has been carried out by Rice and Smith (1999) and their summary table is attached as Appendix I. A review of formula funding for schools in Australia, England and Wales, USA and Canada, and New Zealand has been carried out by Ross and Levacic (1999). They suggest that most school funding formulae include the following four components: a Basic Student Allocation, Student Supplementary Educational Needs, Curriculum Enhancement and School Site Needs.

Use of formulae in UK

The UK is possibly the major exponent of formula funding (Glennester et al. 2000). If we look at total public expenditure in 1998 of £275.3 billion, £96 billion or over a third (35%) were distributed according to formulae, 1998-99 (HM Treasury, July 1999). Some of the other large expenditures cannot obviously be distributed to Regions, e.g. Defence £22.2 billion, Foreign Office and International Development £3.4 billion, Chancellor's Department, Cabinet Office and EC (total £6.8 billion). However, the largest single element in the out-turn is £83.8 billion for social security which is 'needs led' only in the sense that those who are entitled receive payments. Note however, that there is an attempt to move away from formulae in the latest Green Paper on local government finance.

Glennester et al. (2000) have examined the processes of resource allocation in greater detail in the areas of health, education and housing. They show how the vast majority of spending in these areas is formulae driven. They find that the same principles are not used throughout the three areas. Whilst equity - in the sense of equal access for need - is the unacknowledged yet fundamental basic credo of most health workers, there is a much looser consensus in the other areas. Although local authority funding has moved more towards greater precision in equalisation of spending needs, the theme on the ground has been political agitation for more resources for social housing.

Inclusion of outcomes (like health inequalities) in formulae criteria

The objective of all the formulae is to distribute resources for provision 'fairly'. Most formulae are based on 'need' criteria which usually - although not always - reflect need for provision, rather than on measures of performance although there is no technical reason why measures of performance against a target should not be used as the basic criterion for distributing funds.

Thus the major component of formula funding for schools in the UK and internationally is the number of bums on seats, although current use of league tables which generates movement of said bums might be said to be outcome-related (and it is worth remembering that teachers were paid according to the results of spot tests administered by inspectors following the recommendations of the Newcastle Commission in the middle 19th Century - Lord Newcastle being a great granddaddy of Margaret Thatcher, or so the fable goes). One could, of course,

argue that the current RAEs are 'outcome-related' so long as you suspend disbelief about publications being appropriate measures for 'outcome'). Inasmuch as there is a logic to allocation of housing monies, it seems to be driven by 'deprivation' rather than the achievement of sustainable shelter.

In the health area, the apparently obvious exception is the use of Standardised Mortality Ratio reflecting the final outcome, but if that were taken seriously, then there would be incentives on doctors to kill patients, especially young ones (what is known in the trade as a perverse incentive). Its inclusion - usually restricted to $SMR < 75$ - is, however, intended to reflect the need for care to prevent early death rather than a lament about the result. More recently, however, DoH has asked that the distribution of resources be more directly targeted on 'avoidable health inequalities' (by which the civil servants appear to mean avoidable early death from cancers, CHD and stroke).

The problem is that none of the current allocation formulae are linked to subsequent activity to respond to the needs which are the basis for the allocations in the first place. The most transparently inappropriate are deprivation payments to GPs, based on the Jarman index, originally derived to reflect the extra workload of patients from certain types of area (being mealie-mouthed about it). No one follows up the GP recipients of such payments to see whether they are in fact laying on extra services for those patients, or whether the additional resources are appropriate (see Worrall et al., 1997). Similarly with the new DoH proposal to target resources on health inequalities, no one has yet talked about how activity to reduce health inequalities - e.g. to prevent cancers, CHD and strokes among the poor - would be linked to any extra resources; but I suppose we have to resign ourselves to being British (English) about the whole thing and trust that the gentlemen doctors will do the right thing.

More seriously, we might want to consider as a group, the potential for including incentive mechanisms to tackle health inequalities; and what the practical problems of introducing the corresponding performance indicators would be. Suppose that areas and/or groups - on the lists of particular PCGs - could be identified which need more cancer/CHD/stroke prevention (in itself not a trivial task) and extra resources were targeted towards them, what kind of audit procedures would be required to avoid the possibility of professionals 'gaming' the system (e.g. by simply reporting higher levels of cancer/CH/stroke among their patients and asking for more resources). How could incentive schemes be designed which target inequalities effectively?⁸

⁸ I do realise this question has been asked before! But it is probably worth repeating.

Appendix I: International Experience

Country	Individual level	Plan level	Other factors
Australia	Age Sex Ethnic group Homelessness	Mortality Education level Rurality	Private utilisation Cross-boundary flows Cost variations
Belgium		Age Sex Unemployment Disability Mortality Urbanization	
Canada	Age Sex Ethnicity Welfare status	Remoteness	Cross-boundary flows Funding loss protection Cost variations
Finland	Age Disability	Archipelago Remoteness	Tax base
England	Age	Mortality Morbidity Unemployment Elderly living alone Ethnicity Socio-economic status	Cost variations
Germany	Age Sex		Income base
Israel	Age		
Italy	Age Sex	Mortality	Damping mechanism
Netherlands	Age Sex Welfare/disability status	Urbanisation	Retrospective adjustments income base
New Zealand	Age Sex Welfare status Ethnicity	Rurality	Phased implementation
Northern Ireland	Age Sex	Mortality Elderly living alone Welfare status Low birth weight	Rural costs adjustment
Norway	Age Sex	Mortality Elderly living alone	Tax base
Scotland	Age Sex	Mortality	Rural costs
Spain			Cross-boundary flows Declining population adjustment
Sweden	Age Living alone Employment status Housing tenure Previous inpatient diagnosis		Phased implementation
Switzerland	Age Sex Region		Income base
USA	Age Sex Disability Welfare status Previous inpatient diagnosis County of residence	Labour costs	Phased implementation
USA	Dependency(x2)	Mortality	Sparsity cost adjustment
Wales	Age Sex		

CAUSES AND THE CONTRIBUTION OF PUBLIC HEALTH

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An important review paper by Sally MacIntyre provides a historical perspective on inequalities in health (MacIntyre, 1997). Death rates by occupation were published in Britain from 1851 onwards, and grouped to demonstrate a social gradient from 1911. From the mid-nineteenth century also Medical Officers of Health reported on social-economic differentials in mortality and morbidity at local level, and usually drew both environmental and individual explanations. During the mid-century, Richard Titmuss suggested that the social gradient in infant mortality was widening between 1911 and 1931 (prefiguring later similar findings comparing 1971 and 1981), while Jerry Morris contrasted the steady downward trends for the population as a whole with continued class differentials. Research on 'transmitted deprivation' between generations was initiated by the Conservative government in the 1970s, while the Working Group on Health Inequalities, set up by the following Labour government, was published as the Black Report in 1980.

MacIntyre suggests that the Black Report's four explanations for social class differences - artefact; selection; materialist; and behavioural - have both 'hard' and 'soft' versions, or 'explaining away' compared with 'helping to explain' interpretations. While the Black Report gave greatest support to materialist (especially income) explanations, it did not reject 'soft' versions of any of the four. MacIntyre's review accepts 'that there could be problems validly comparing class death rates over time, that under certain circumstances poor health or disability could lead to social disadvantage, that socially structured patterns of health damaging behaviours could contribute to class gradients in morbidity and mortality, and that socially structured psychological factors and social capital as well as physical factors and material factors and material capital could generate inequalities in health'.

New research goes beyond the four Black Report causes, and especially to understand why the differentials between social groups persist. There appears to have been greater uptake of effective behavioural change (e.g. stopping smoking) in better-off social groups and also increasing exposure to health risks (e.g. from obesity) in more deprived groups. Simpler explanations of 'poverty' have been linked with more complex notions of relative deprivation, recognising that behaviour and self-perception operate within economic and cultural settings. More politicised versions of this debate draw on the idea of 'victim blaming', rejecting 'top-down' policies that seek to ameliorate these differences in favour of 'bottom-up' action to change behaviour through empowerment.

Other research has looked at the broader social and environmental determinants of health. These include the workplace, social networks and social capital, the physical environment, and complex environmental-social factors such as nutrition, housing and transport. There is also

evidence from several longitudinal studies on the 'life-course' perspective within which health inequalities are determined (Kuh and Ben-Schlomo, 1997). Childhood is important, and interventions are supported for this age group partly because of political notions of 'fairness'. But influences on health occur at all stages, and social position determines the frequency, response and impact of these. Behavioural interventions in adult life are thus partly determined by earlier life experiences and also by current cultural patterns.

The experiences of central and eastern European countries in the last ten years provide a further perspective (Sigerist, 2000). Under communism, these countries generally had narrower income differentials than western countries. Yet from the 1970s, improvements in their health indices flattened, as increasing chronic disease wiped out gains from controlling infectious diseases. The social disruption of the changes to capitalism in the 1990s brought rapidly rising mortality rates, particularly for young and middle-aged people. Depression, poverty and alcohol have all been identified as contributing factors, with their greatest impact on disadvantaged groups. In the last two or three years, these indices have improved again in some, but not all, of these countries, and their increased social divisions have been offset by rising economic standards. These trends challenge the hypothesis, suggested by Wilkinson (1996), that average levels of health for a population are inversely related to income differentials.

Mackenbach (2000) has confronted the position, developed over the last quarter century, that medical care has little impact on population health status. He broadly accepts McKeown's view that earlier in the century the main influences on health status were environmental, but shows that medical care has contributed significantly to continued improvements. His view has not been welcomed, perhaps because of the successes of social and epidemiological research in explaining disease aetiology, and their defence against the hegemony of biomedicine. However, one can distinguish between the causes of disease and their remedy: that social and behavioural factors cause ill-health does not invalidate medical interventions that can resolve these differences. Medical care may have a differential effectiveness in relation to social position. Historically, some public health interventions, for example, immunisation, would have helped the health of working class people more because of their higher disease rates. On the other hand, apart from problems of access (e.g., the inverse care law), treatments for major diseases (e.g. for cancer, kidney disease) may be on average less effective for lower socio-economic groups because they more frequently have other conditions (such as obesity, smoking) that contribute to poorer outcomes.

Many believe that poverty reduction will contribute to reducing inequalities in health, and Sweden has proposed a reduction of the country's Gini coefficient as the first of nineteen health targets (Ostlin and Diderichsen, 2000). Yet the field of welfare benefits, incentives and redistribution policy is complex, and fought over by many. Can the welfare state ameliorate the continuing divisive forces of our educational meritocracy (Young, 1961)? Public health practice has, and will always, focus on the needs of disadvantaged groups, and direct policies and services towards them - through behavioural change, inter-sectoral collaboration and improving the quality of medical care. There has been insufficient support - financial, moral, managerial - for local public health work in the UK. But do public health policies need to change to accommodate new understanding of the socio-economic causes of health?

WHAT KIND OF HEALTH INEQUALITY?

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The NHS Plan has raised yet again the spectre of setting national targets for reducing health inequalities (Secretary of State for Health, 2000, pp. 106-107). This raises a fundamental issue that has to be resolved: what kind of health inequality is it that is to be reduced? To answer that question requires three further questions to be answered: how is health to be defined, between whom is the relevant inequality to be assessed, and how is that inequality to be measured?

Most contributions to the debate concerning health inequalities have simple answers to all three of these questions. Health is defined in terms of mortality; the inequality of interest is that between the social classes (usually focusing on men of working age because their class is easiest to define); and the appropriate measure of that inequality is the ratio of mortality rates between the classes.

The most recent Government Report in the area, the Acheson Report (1998), is a classic example. In fact it uses these kinds of inequality calculations to reinforce one of the standard propositions in this debate: that inequalities in health are bad and getting worse. So, for instance, it states that: 'In the early 1970s, the mortality rate among men of working age was almost twice as high as for those in Class V (unskilled) as for class I (professional). By the early 1990s, it was almost three times as high' (Acheson, 1998, p. 11). The Report acknowledges that Classes I and V may not be the right comparators because of their relatively small size, but argues that even when Classes I and II, and IV and V, are combined, the gap has still increased. 'In the late 1970s, death rates were 53% higher among men [aged 35-64⁹] in classes IV and V compared with those in classes I and II. In the late 1980s they were 68 per cent higher' (*ibid*). Both the method of measurement and the conclusions drawn are firmly in the tradition of the Black Report (1980) and many subsequent studies that have tried to track the changes in health inequalities.

Obviously, trends of this kind showing growing inequality are very disturbing. But there are different ways of measuring inequality, and these can yield different conclusions - not only about trends, but about the magnitude of health inequalities in Britain. Hence, if targets in health inequalities are to be set, then these other methods of measurement should be explored to see if they could complement or even replace the social class mortality ratio measures.

To begin at the end, with the third question: how to measure inequality? As we have seen, the Acheson comparisons are expressed in terms of *ratios* of mortality rates. If instead, we look at *absolute* differences between rates, a different story can emerge. The absolute gap between the age-standardised mortality rates per 100,000 people for men aged 35-64 in Classes IV and V and that for classes I and II actually fell from 1976-81 to 1986-92 (from 330 to 309). To move outside the men of working age group, and look at infant mortality, between 1978 and 1996 the absolute

⁹ Acheson gives no combined figures for men aged 20-64: the age range used for the earlier comparison.

gap between the infant mortality rates of Class I and Class V almost halved (ONS, 1998a). Three pages before the earlier quotations, the Report itself argues that comparisons of absolute differences of mortality rates are 'the most critical, particularly with respect to identifying the major problems which need to be addressed' (Acheson, 1998, p.8). If it had followed its own recommendations it might have come to rather different conclusions.

Then consider the measurement of health itself. Although differences in mortality are obviously a crucial indicator of differences in health, they are not the only indicator. Morbidity is also very important,¹⁰ and here the trends in class inequalities are also unclear. The table below takes data from the General Household Surveys of 1974 and 1998 and shows the proportion of those reporting limiting long-standing illness and acute sickness in the professional and unskilled manual socio-economic groups in those years. Somewhat depressingly (and surprisingly) for both groups, morbidity is rising (in fact this is true for all socio-economic groups). For men, the absolute gap between the proportions reporting limiting longstanding illness in the two classes has remained the same; for women, the absolute gap has risen. Note that in both cases the ratio has fallen - illustrating again how different methods of measuring inequality can lead to different conclusions.

Table 1: Limiting longstanding illness by socio-economic group

	Males	Females
1974		
Professionals	8	9
Unskilled	23	23
Gap	15	14
Ratio	2.9	2.6
1998		
Professionals	12	13
Unskilled	27	29
Gap	15	16
Ratio	2.3	2.2

Source: General Household Survey, relevant years

Then what about the between whom question? Partly because of the many weaknesses associated with the class comparisons over time and partly because fundamentally it seems to be addressing a question of at least equal importance, I and others have looked at trends in *population* inequality: that is, differences between individuals rather than groups (Illsley and Le Grand, 1987; Le Grand, 1987). So, for instance, inequalities in an individual indicator such as age-at-death can be measured by summary statistics such as the Gini coefficient or the variance (an absolute measure). Again this gives a rather different picture about trends over time, as illustrated in Table 2. Here the mean is rising but inequality is falling.

¹⁰ This is recognised in the National Plan which promises to set targets to narrow gaps between socio-economic groups in infant and child morbidity as well as mortality (Secretary of State 2000, p. 107).

Table 2: Age-standardised age-at-death

Year	Men			Women		
	Mean	Variance	Gini	Mean	Variance	Gini
1974	67.24	300.8	0.130	73.63	281.1	0.114
1985	68.16	274.4	0.123	74.12	256.0	0.109
1994	68.55	268.8	0.122	74.33	234.7	0.105

Source: Le Grand and Vizard (1998) Table 4.11, p.112

In an important development, this approach has been followed by the recent WHO Report for the year 2000 assessing the performance of different countries' health systems (World Health Organisation, 2000). Among other indicators, this uses inequality measures of individuals' disability-adjusted life-expectancy, thus taking account of morbidity considerations as well as avoiding the pitfalls of group comparisons.

So what to do? If government targets have to be set, then I believe that the most promising course of action is to follow the WHO approach. This (a) takes account of morbidity as well as mortality, (b) covers the whole population and (c) avoids the pitfalls of social group measurement, thus permitting much more sensible comparisons over time as well as internationally." More work would have to be done, for instance, in the methods for adjusting for morbidity: here some of the recent work on QALYs could be useful. Also, the appropriate summary measure of inequality would need to be determined; different measures have different properties and it would be important to sort out which properties were desired. However, overall this kind of approach seems a better bet than those that rely upon narrow indicators using an unreliable metric, such as social class ratios of mortality for men of working age.

¹¹ Actually the Report is slightly vague on detailing its exact methodology. It uses mean disability-adjusted life expectancy as a measure of health system performance; but it is not quite clear whether it uses this or unadjusted life-expectancy as its inequality measurement. The Report also does not indicate which summary statistic of inequality it uses. However, it is the usefulness of the overall approach with which I am concerned here, not the exact detail.

THE ROLE OF THE NHS IN TACKLING HEALTH INEQUALITIES

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Recording of risk factors

Although the power of the socio-economic determinants of ill-health is now widely recognised, socio-economic risk factors have yet to be effectively incorporated into the clinical method. Health care professionals have no simple, user-friendly and non-stigmatising ways of eliciting and recording the various dimensions of poverty of which the most important are probably:

- low income
- inadequate education
- unemployment
- poor housing
- social isolation

Without the routine use of such recording, it will be impossible for health care professionals to target prevention and treatment interventions effectively or to judge whether their interventions are effective. Only when these basic data collection systems are in place will we be able to assess the potential role and effectiveness of equity impact assessment and equity audit methodologies.

To give one example, the approximate doubling of risk of coronary heart disease seen in people in the poorest socio-economic groups compared to those in the richest groups is similar in magnitude to the increased risk produced by cigarette smoking. Details of smoking habit are recorded routinely at consultations and levels of ascertainment are audited regularly. However, and in stark contrast, in the prediction of risk in relation to the thresholds for the treatment of hypertension or adverse lipid profiles, socio-economic risk factors are systematically ignored. If treatment and prevention interventions are offered across the population without targeting on the basis of need, health inequalities will tend to be exacerbated; they will almost never be reduced.

Co-morbidity

We know that there is a socio-economic gradient in the incidence and prevalence of almost all major disease categories. However, few studies describe the true burden of ill health in deprived areas, as characterised by the number, severity and complexity of health and social problems within families. Health care that is increasingly driven by protocols derived from studies of single disease conditions seems likely to disadvantage those with multiple morbidity. There is an urgent need to know much more about the optimal treatment of multiple morbidity. How

should the care of different diseases be prioritised in situations where treatments are incompatible or the burden of treatment becomes too great?

Equity of access

Practical access to health care is a problem for some, such as homeless people, and people in rural areas who may lack transport. However, as well as universal access, effective health care depends on two inter-related factors: the provision of adequate and appropriate services and the extent to which people are able to maximise their benefits from these services. There is some evidence that patients living in more adverse socio-economic circumstances actually see their doctor more often than better off patients. However a number of factors contribute to this higher level of contact not translating into a higher level of care; in fact, it often translates into a lower level of care.

The inverse care law applies at every level of the health service. Health promotion claims by GPs in London show a remarkably close inverse correlation with Jarman scores (Bardsley et al., 1997). While children from one adult households are taken to the doctor more often for infections and accidents, they are less likely to attend for immunisation. Patients who are more educated and better informed about their condition and who feel more involved in management decisions, achieve better clinical outcomes and are more likely to adhere to suggested treatments. In spite of higher rates of ischaemic heart disease among people of South Asian origin in the United Kingdom, this group present to cardiology services at a later stage of disease when compared with their European counterparts. A questionnaire survey found that people of South Asian origin reported a greater likelihood of seeking immediate care for angina symptoms than people of European origin, suggesting the delays in obtaining specialist care are due to differences in the care received rather than differences in illness behaviour. An analogous inequality is seen in cancer. Although people from deprived areas are more likely to develop cancer, they present to specialist services at later stages of disease compared with patients from more affluent areas (Coleman et al., 1999).

The use of mental health services is positively correlated with high levels of deprivation and unemployment but there are disturbing inequities across different ethnic groups. Young Afro-Caribbean men have higher admission rates for schizophrenia but lower consultation rates for mental health problems, whereas both men and women from South Asian populations have much lower rates of general practice consultation for mental health problems compared with the white population.

At an organisational level, general practice can do much to enable equity. All barriers to consultation should be examined to ensure that the poor are not disadvantaged. An obvious example concerns those without a phone who may be easily disadvantaged if appointment systems are rigidly enforced and largely organised by telephone. This situation could be further exacerbated by the increasing use of e-mail. Those unable to read or write are yet more likely to find it difficult to access services, or even to become aware of the range of services available. Equity audits can be used to check that all the services of a practice are used by the appropriate range of patients and that, overall, patients from different socioeconomic groupings have access to services which are proportionate to their needs (Rodewald et al., 1995). The provision of welfare benefits advice within practices can help to ensure that the disadvantaged receive all the

help to which they are entitled (Jarman, 1985). Practices should also seek to acknowledge and address the 'double jeopardy'⁵ (Spencer, 1996) experienced by ethnic minority groups in which poverty is exacerbated by discrimination (Atri et al., 1996).

Similar audits are needed to ensure that access is appropriate to need at all levels of the health service.

Resource allocation

We know a lot about the extent of health inequalities; we know much less about the extent of inequalities in health care. Why is Julian Tudor Hart's inverse care law so pervasive even within the National Health Service and why are the greater needs for health care in some areas not more accurately reflected in more intensive and focussed health care provision? Is the apparent political commitment merely rhetorical? Are more affluent citizens simply not prepared to invest in services for those less fortunate?

An adequate response to the health effects of deprivation has huge implications for workloads within the NHS. Upstream, societal changes are required to prevent further damage, while downstream, the existing damage demands improved medical treatment for those already affected. Services in deprived areas face formidable problems on both fronts.

Firstly, people living in deprivation may have received little in the way of systematic health care, and low levels of preventative care. The clinical workload generated uncovering previously unrecognised pathology, and the effort required to implement effective preventative health care programmes in deprived areas, cannot be under-estimated. Secondly, the greater a practice population's need for social support, the less is its community likely to be able to offer. Local agencies are likely to be over stretched, impairing effective liaison and joint working.

There is an urgent need to find ways of measuring this double jeopardy so that it can be reflected in the allocation of resources at all levels of the health service. Unless resources are differentially distributed to areas of socio-economic deprivation, the NHS cannot contribute to the redress of health inequalities.

Targeting within universal provision

A major strand of the current government's strategy for tackling health inequalities appears to be the provision of additional interventions targeted at defined geographical areas. Examples include Sure Start and Health Action Zones. At the same time, many existing universal services are contracting, the most obvious example being health visiting. Interventions focussed exclusively on some of the most deprived areas are potentially both stigmatising and profoundly inequitable, and additional investment in universal services of high quality seems likely to be more effective and to reach a larger proportion of the deprived population. Within a universal service, health care professionals need the skills to identify those with greatest need and to target their services accordingly.

Workforce

There is a growing shortage of GPs and other primary care professionals in deprived areas (Young and Leese, 1999). In order to try and ensure that resources are adequately focused on

those in most need, the system of deprivation payments needs a complete overhaul to provide real financial incentives for health care professionals working in areas of greatest need. In addition, the extension of needs-based weighting to non-cash limited General Medical Services is urgently required.

Local partnerships

To be effective at this level, general practitioners and other primary health care workers need to forge links with local people to enable health promotion which is based on empowering communities to optimise the health of their members (Thomas, 1995). This approaches the concept of primary care which is espoused and promoted by the WHO (WHO, 1978), but which has been mostly ignored in the UK.

The WHO describes primary health care in relation to developing countries as promoting maximum self-reliance and participation of individuals and communities, making full use of local knowledge and expertise. Primary care is predominantly concerned with the socioeconomic and environmental determinants of health and empowers communities to seek control of these.

In a process which parallels the victim blaming of life style health promotion (Marantz, 1990), successive UK governments have colluded in the medicalisation of primary care to cover their own failure to address the societal determinants of ill-health. By promoting the idea that general practice and primary health care are synonymous, the general practitioner is made responsible for the breakdown of the health of communities, an area in which their influence is in reality only marginal. It is essential that general practice and primary health care are disentangled as the continuing conflation of the two risks is distorting and damaging both.

General practitioners, and particularly those working in urban deprived areas, feel overwhelmed by a tide of illness much of which is fed by poverty, inadequate housing and the absence of opportunity. We know from the survey undertaken by the Inner City Task Force of the Royal College of General Practitioners (Lorentzon et al., 1994) that general practitioners value resources offered to their communities to enhance health (Green and Price, 1996). General practitioners need to acknowledge the limitations of their responsibility for health, recognising the much greater power of socio-economic factors, but actively support those members of the primary care team, and the statutory and voluntary agencies, who work within communities in ways which promote health in the broad sense promulgated by the WHO (Vuori, 1986).

Democratic deficit

The socioeconomically disadvantaged have minimal democratic control over their predicament and the context of their lives. How could this situation be changed? There is a clear democratic deficit within the governance of the NHS and an urgent need to create effective systems of local democratic accountability. Particular effort will be needed to involve the most marginalised communities.

INEQUALITIES: SETTING TARGETS?

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"For the first time ever, local targets will now be reinforced by the creation of national health inequalities targets, to narrow the health gap in childhood and throughout life between socio-economic groups and between the most deprived areas and the rest of the country...In particular, we will set a target to narrow the longstanding gap in infant and early childhood mortality and morbidity between socio-economic groups as well as a target to address inequalities later in life. These inequalities targets will be delivered by a combination of specific health policies and broader government policies, including abolishing child poverty, expanding Sure Start and action on cancer and coronary heart disease."
- The NHS Plan (Secretary of State, 2000).

In setting policy targets of any kind, whether for improving health or securing a more equitable distribution of income, it would seem sensible to start from two simple propositions. The first is that the policies should be feasible in terms of the logic of their design. The second is that there are good reasons for thinking that the targets are achievable in practice as well as desirable in theory. The Government's commitment to set targets for the reduction of inequalities in health risks offending against both these principles of policy making. In what follows, this paper will seek to justify this assertion and outline alternative strategies.

Inequalities in health have one characteristic that distinguish them crucially from many other forms of inequality. That is, they cannot be addressed directly by redistributive policies. In the case of inequalities of income we can - and do - transfer income from the wealthiest to the poorest through the tax and social security systems. We cannot re-distribute health as such: if group X has a life expectancy 10 years longer than group Y, we cannot transfer five of the former's extra life years to the latter. The point is simple and obvious, but the implications are profound and often overlooked. They suggest that there is a fundamental logical incoherence in the attempt to reduce health inequalities. Given that it is impossible to redistribute health, the gap between group X and group Y can only be narrowed if our policies can affect the health of both groups. That is, even if public policies successfully invest in improving the health of the worst-off, there can be no guarantee that this will diminish inequalities: it could well be that the health of the best-off will continue to improve at a faster rate (roughly the pattern in recent decades). Short of actually preventing the healthiest section of the population from becoming healthier still - short of, for example, deliberately denying them improved services, a morally fraught course of action - inequalities may persist even though public policy is triumphantly successful in improving the health of the worst-off. Hence the case for expressing policy targets in terms of improving the health of the worst-off rather than reducing inequalities.

As against this, it is often assumed - as in the Acheson Report (1998) - that although we may not be able to re-distribute health, we can re-distribute the determinants of health. In this respect, the National Plan follows Acheson: reductions in inequality are to be achieved by 'broader government policies, including abolishing child poverty' as well as specific NHS policies. Not only is the political feasibility - and timetable - of the implied redistributive policies problematic. So is the intellectual and administrative feasibility of translating general aspirations into specific policy targets. For here we come to our second proposition. Setting specific targets for reducing health inequalities as distinct from rhetorical invocations of desirable policy directions requires some understanding of the relationship between means and ends. Abolishing child poverty is clearly a highly desirable, and urgent, policy goal in its own right. It would almost certainly make a contribution to reducing infant and early childhood mortality and morbidity among the most deprived. But no one (and certainly not the Acheson Report) has quantified the likely impact of such redistributive policies? So how can targets for reducing inequalities be set if, on the one hand, we cannot hold one side of the equation constant and, on the other hand, we cannot predict with any precision the time it will take for our policy interventions to show an effect or the size of that effect?

There is a further conceptual and practical difficulty about setting such targets: what should be the currency of analysis? As the National Plan indicates, there are two broad alternatives. The first is to adopt the standard approach by looking at inequalities by socio-economic groups. The difficulty with this is that socio-economic groups change over time: in comparing, as the Acheson report does, the ratio of SMRs in social classes I/II to those of social classes IV/V over a 20 years period, we are not comparing like with like. Social classes change in size and composition, with considerable mobility between them; so does the social context, including the structure and availability of work, which gives meaning to social class. In setting targets for the future, we should therefore be able to predict not only policy effects but also the changes in the socio-economic structure likely to affect health status. In other words, if targets expressed in terms of inequalities between socio-economic groups are to have any meaning as distinct from being declaratory gestures, we should be able to answer two questions. First, what would those inequalities be in 10 (or 20) years time absent of any policy interventions designed to reduce them? Second, as argued above, what is the predicted effect of introducing specific strategies?

Setting targets in terms of inequalities between the 'most deprived areas and the rest of the country' seems, at first sight, a more promising strategy. The technology of classifying and identifying geographical deprivation is well developed. Further, given that there often appears to be a strong geographical concentration of the factors linked to poor health - low incomes, bad housing, poor schools, single-parent households, high unemployment, ethnic composition etc. - this would appear to offer a way of steering resources to where they will have the greatest impact. In terms of the policy tools available, this would seem the most manageable strategy. The government is already committed to a variety of projects (though it remains to be seen how effective they turn out to be and how long it takes for evidence of effectiveness to filter through, let alone what their impact on health status will be). The NHS is in a position to give a geographical bias to its service planning in order to discriminate in favour of the 'most deprived areas' and has some experience of so doing. Even here, however, setting targets for the reduction of inequalities is highly problematic. First, most familiar and most fundamental, there is no

acceptable way for ensuring that differences will be narrowed even if the policy interventions are spectacularly successful in improving health in the 'most deprived areas' if health 'in the rest of the country' improves at an even faster rate. Second, there is a problem of social justice. Areas statistically defined as 'deprived' may be exceptional in the degree of *concentration* of the population at risk. But *numerically* most of the population at risk will live outside those areas (unless these are defined with a generosity heedless of all expenditure constraints). Geographical targets for reducing health inequalities may therefore create a new pattern of inequalities, favouring those living in deprived communities as against those living merely in deprived households.

Setting global targets for reducing inequalities in health would therefore seem to be a policy dead-end. In contrast, setting condition-specific targets for improving the health of particular local groups in the population - whether defined by income, ethnicity or gender - offers a sensible way forward. It is doable, in the sense that it is possible to target specific populations and identify specific service delivery interventions (though even here quantifying the likely impact is difficult). It is politically feasible, in the sense that it does not require a massive redistribution of income. It is building on existing initiatives: government policy already requires health authorities to set themselves targets for improving the health of the most deprived (Secretary of State, 1999). Attempting to reduce inequalities in aggregate is probably a doomed enterprise in so far as public policy cannot hope to control all the factors that determine the distribution of health. Unpackaging the problem - by identifying the local opportunities for improving the health of the most deprived and reinforcing the incentives to service providers to address this challenge - may not necessarily reduce inequalities. But it should, at any rate, make life somewhat better for those concerned, which is more than the current rhetoric of target setting is likely to achieve.

IMPLICATIONS OF GENETIC ADVANCES FOR EQUITY IN HEALTH

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The genetic contribution to health inequalities

The important thing to remember about genetics and health inequality is that there is no *a priori* reason to suppose that the distribution of biological advantage and disadvantage will correspond to existing patterns of social stratification. Although some genetic disorders are manifest at birth or early in the life course and contribute to social and economic disadvantage, these are already well known and their effects absorbed into existing structures of inequality. In many cases, they seem to reinforce existing patterns, although, in a few instances, families are able to invest sufficient social or economic capital to mitigate these. Perhaps the more interesting consequence of advances in genetic knowledge will be what we discover about the contribution of genetics to ill health in later life. These are disadvantages that become manifest after the age of reproduction and have not been subject to Darwinian selection pressures. To the extent that there are specific genetic contributions to an enhanced risk of cancers or heart disease, for example, these are unlikely to map neatly onto existing class patterns. They may not be entirely independent, to the extent that reproduction is the result of assortative mate selection processes or that premature death or economic decline as a result of morbidity may be a source of intergenerational disadvantage. However, there is at least as much reason to suppose that Social Classes 1 and 2 will contain affluent and influential individuals who prove to be genetically disadvantaged as that Social Class 5 will be the genetic underclass envisaged by eugenicists for the last hundred years or so.

This proposition cannot, of course, be established without empirical testing and it is regrettable that social scientists do not yet seem to have been brought on board in the MRC/Wellcome plans for creating a very large cohort study of people in mid-life to track the significance of genomic information for morbidity and premature mortality in later life. These data are potentially crucial as a contribution to debates about the relative contributions of health and environment to social mobility - does health affect mobility or mobility health?

Access to genetic medical services

Suppose that we discover good relationships between genomic information and health outcomes? The result may well be to accentuate existing inequalities. It is almost certain that health outcomes will be a function of the relationship between genome and environment, rather than being simply determined by the genome. Everything we know indicates that better-off people tend to benefit more quickly from new health technologies, and are faster to modify their

lifestyle in the light of information about risk factors. Although cost may slow the general introduction of genetic screening, private health providers and their insurers will have a strong incentive to offer, or require this, as a way to manage their risk pool. While it is theoretically possible that there will be some compensation behaviour from those declared to be at low risk, it is more plausible to suppose that it will be outweighed by early adopters of the screening technology taking steps to reduce their personal risk. This might be achieved by lifestyle change and more active medical surveillance with a view to earlier detection of emerging pathology and more rapid intervention. Recent experience with the introduction of BRCA1 and II screening for hereditary breast cancer supports these assumptions and illustrates the potential impact which gene patents might have on access to healthcare.

The position on genetically based therapeutics, such as gene therapy, may well be similar. However, a more immediate challenge will come from the development of drug treatment regimens which are guided by genetic information about the patient; so called pharmacogenetics. It is increasingly recognised that human genetic polymorphism makes a strong contribution to variance in response to medication. Initially, this will probably manifest itself as genetically-sensitive prescribing of common drugs like warfarin, where the speed of liver metabolism is affected by a specific gene which can occur in three different forms (alleles). Knowing which allele is present affects the initial calculation of an effective therapeutic dose. However, this strategy is likely to be followed by the production of drugs designed to operate in a specific genetic environment. Our problem at present is that we do not have a good idea how wide the range of relevant polymorphism is likely to be. The pharmaceutical industry is one of the last survivors of Fordism: it will now be challenged to produce much more customised products, which are likely to be somewhat more expensive in real terms. If warfarin is a typical example, where there are only three relevant alleles and a designer drug could serve about one third of the current market, the additional costs may be relatively small. If it is not typical and important treatments prove to be influenced by a greater level of genetic variation in several genes, production volumes will shrink and costs per unit rise dramatically. We might envisage a two-tier treatment situation where better-off people can purchase a customised drug and others have to make do with the equivalent of a Model T Ford - high volume, cheap but not precisely right for anyone.

Genetics and social exclusion

There has been considerable concern about the prospect of insurance exclusion resulting from genetic testing. This has probably been exaggerated and the real issue may be the shift in the pattern of uninsurability rather than the absolute size of the problem. First, it needs to be recognised that insurers already collect genetic information by asking about the age at death of our parents. This is a pretty strong predictor of our own prospects of longevity. Second, insurers are in the business of selling insurance. Currently, they only refuse about 2 per cent of applications for life or long term care insurance and load another 4 per cent. They do not think these percentages are likely to change. What may change is the composition of those groups. Some people will show that they are at lower risk than current information predicts, while others will find that they are at higher risk. For most of us, the most likely scenario is that we will all

find we have a slightly enhanced risk of something which neither alters the average level of risk in the insurance pool nor justifies the cost and ill-will of mass testing.

Insurers doubt whether life or long term care insurance will ever be as refined as car insurance where information about the distribution of accidents and costs of repair in relation to the type of vehicle and driver is relatively easy and cheap to collect. However, there would be a very serious problem for those who were excluded if there was a major shift to private insurance as a basis of support in later life. Although these people may not, on average, expect to live as long, they may well require higher levels of care because of their enhanced risk of morbidity. Since these exclusions are likely to sweep up at least some people who would currently take the availability of private insurance for granted and have significant political or economic connections, it may affect the basis of support for market-oriented welfare reform. At present the scale of the effect is difficult to judge.

Similar concerns have been expressed about the possible introduction of genetic testing into employment, as this may also lead to new forms of discrimination and social exclusion. Evidence from the USA suggests that this is already a significant problem. However, as a recent report by the Human Genetics Advisory Commission highlighted there is currently little interest amongst UK employers in the use of genetic testing to screen potential employees. In both insurance and employment the extent to which social exclusion will result from the introduction of new genetic screening technologies will be heavily influenced by the way in which they are regulated by public policy. Given that all sections of the population will be equally vulnerable to discrimination on the basis of their genetic endowment, it is likely that such practices will meet widespread opposition. This is well illustrated by the plethora of Federal and State legislation in the USA, which is attempting to prevent genetic discrimination in both areas.

Genetic explanations of health inequalities

Perhaps the most important impact of genetics on policy discussions of equity in health will be the way in which the debate is framed. Genetic explanations are increasingly being used to account for what had previously been thought of as common acquired conditions caused by environmental and social factors. Given that the emphasis of health policy is increasingly on detecting those at higher risk of developing particular diseases, there is a danger that the expansion of genetic testing might be at the expense of public health measures aimed at reducing inequalities. This turn towards genetics has also found expression at a purely explanatory level. For example, one popular science commentator has argued that the excess morbidity experienced by single people compared to their married counterparts is explained by the fact that this group is genetically less fit and are therefore not as attractive to potential mates. In the increasingly fashionable world of evolutionary thinking it is genetics which determines human health and behaviour, and ultimately results in social division and inequality.

POLICY OPTIONS

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We tend to speak about inequalities in health as abnormal, as aberrations from some customary equality. Historically, from whenever to now, they have been an ever-present feature of our society and can be seen as the normal outcome of any success-oriented (meritocratic) social structure. Inequality is either positively encouraged or accepted in other key sectors of our society, such as the economy and the educational system. The resulting inequalities in wealth, knowledge, status and lifestyle are known to be largely responsible for inequalities in health between socially defined groups, which we deplore. Welfare measures have been put in place to mitigate the worst financial consequences of inequality for the most disadvantaged losers. In education a notional equality of input per capita (very different from equality of opportunity) has been accepted as sufficient mitigation. But in health the objective, at least rhetorically, has been equality of outcome, a far more rigorous objective. So long as there are causal links between health and social experience, the socially structured inequalities mentioned above - wealth, knowledge, status and lifestyle - make equality of health outcomes a Utopian objective.

One reason for past tolerance of this apparently illogical position is that too great an emphasis was placed on poverty as a cause both of ill-health and of inequalities in health. The assumption was that with a secular increase in wealth a point would arrive where even the lowest levels of wealth (with a little help from re-distributive policies) would be so high that health would be unaffected. It is now accepted that material poverty was only one, although historically very important, cause. Beyond the poverty, but related to it, were other inequalities which had repercussions on health. These were unhealthy behaviours (smoking, drug and alcohol abuse, lack of exercise); cultural lifestyles affecting diet, child upbringing, sexual and reproductive life; patterns of expenditure etc. These in turn stemmed from inadequate education, limited qualifications, housing segregation, low level and insecure employment, and limited social expectations.

Against that background, what are the options?

1. Breaking the link between health and social experience?

Continued increases in GDP, relatively modest re-distribution, targeted welfare support and concerted action against unemployment and segregated housing blackspots, would go some way to reduce illness caused by material poverty. Continued medical advance will also reduce the severity of the consequences - fewer people will die young or be left with long-term disabilities. Such changes might prevent some of the more unacceptable consequences of continuing inequality but would only marginally affect health inequality itself.

It is salutary to recall that inequalities in health begin to appear between Social Classes 1 and

2 and continue to increase through routine non-manual and skilled occupational groups before reaching the acknowledged poverty classes. Clearly other causes require other measures. It is also worth recalling two salient features of Class 1. They are physically the tallest and educationally the highest qualified. Their health superiority began with early nurturing and was able to be maintained by virtue of both their earning power and the knowledge, attitudes and lifestyle which come with education and success. The early influences which set their trajectory came from their family and social backgrounds. Could such conditions be created on a population scale through public intervention?

2. Working with families to break 'the cycle of deprivation'

This approach has been based on the observation that, in terms of both education and career and of growth and health, the early years are crucial. It has been tried with limited success in the American Headstart programme and is currently being pursued in the English Surestart programme. My reading of the massively half-evaluated Headstart is that, where sufficient resources were targeted onto poor child populations, measurable improvements resulted; and they lasted for up to two years after children left the programme (or the programme left the children). Early engineered gains are lost when children are exposed to the full force of their environment. Sustainable gains require equivalent changes in their parental and community environments and the continuation of enhanced treatment into adult life. That is a massive commitment just for the most disadvantaged groups. And it might still not be successful - can you have social transformation in a bit of a housing estate? To try it on a larger scale (inequality begins in Class II) is politically unthinkable. We should however keep this in mind as a background to other policy options and as a reminder that inequalities in health are not primarily a creation of the health service but the inevitable fall-out from our social structure.

Credible policy options demand that priorities be clearly identified, that the supposed benefits will indeed flow from the policy and the action, that there is some indication of the scope, scale and timing of action and outcomes, that outcomes are measurable and responsibilities clearly allocated and accepted. With present knowledge these requirements cannot be met for such an ambitious option nor does the political will exist or be foreseen. Because of its fundamental importance, and perhaps its ultimate inevitability, experimental testing of the major components of this option should nevertheless be considered.

If these far-reaching options are impracticable, we are left with damage limitation. We can approach this from two directions, that of health policy and that of social policy. I begin with the latter because there has long been general agreement that the causes of health inequality lie in social and economic inequality.

3. The social exclusion route

'Social exclusion' is a term of many meanings. As I perceive its usage, it is a watering down of inequality to signify those bits which are currently politically or morally unacceptable - about which we are embarrassed and about which 'something must be done'. What I have called damage limitation.

One question must be: are there elements of social and economic policy which are specific to health? If ill-health results from unemployment, low and uncertain incomes, dietary

deficiencies, homelessness, is this not a failure of social policy which requires correction in its own right? That is probably true of all ill-health caused by material poverty. The demonstration of damage to health is an *extra* argument for social policies desirable in their own right but for which the public and political will is lacking. Health has a strong emotive appeal - there is the sense that everybody is entitled to health but not to happiness.

Other inequalities operate through the culture of individual and group behaviour rather than directly upon the body. They are more the product of inequality than of material deprivation - although the two are closely associated and intertwine, each being sometimes cause and sometimes effect. The classic examples are smoking, alcohol and drug abuse, poor dietary habits, obesity, child abuse, violence and injury etc. They are not specific to the poor nor do they form a neat package for policy intervention. They do seem however to be associated with combinations of poor knowledge and education, low expectations of work and security, alienation and segregation. All perhaps involve a felt sense of inequality.

Is there any natural order of priority between social policies aimed at damage limitation? Should policy recommendations be based on the demographic status of the sufferer (e.g., child, young earner, old person), the severity of the damage, the number affected, the economic costs of the damage, the long term consequences of inaction, the practicability of effective intervention, value for money etc.? These must essentially be political decisions unless it can be shown that some hierarchy of causation exists whereby one move unlocks others. For example, the argument for concentrating resources on children's social and educational development is that much of the damage is irreversible and stores up problems for the future which spill over into other areas. Against this upstream approach is the moral/political argument that existing inequalities are generating severe damage across the older age-groups day by day which cannot be ignored - and the pragmatic argument that unless wider changes are made the improvements achieved with children will be partially undone as they move into the unequal adult world of work and living conditions. Similar policy dilemmas occur, irrespective of the age-group, between long term /short term choices or between social structural action and that designed to tackle a specific health outcome. In both cases, taking the lesser option may solve a specific problem but leave inequality otherwise untouched. Unless such dilemmas of choice can be resolved policy must continue to be tackled with the familiar mixture of ideology, special interest and ad hoc responses to current events.

If, however, a hierarchy of social causation does exist, if action over the long term might also contribute to short term problem solving, these may be false dichotomies. The causes of inequality, material and behavioural, in both early and adult life, cluster around education, work and housing. Research is urgently needed to show how these causes interact with each other and with health and how far policies directed at one cause, one condition, one age group, affect others. There will be no common cause but there may well be a core process of interaction which could act as a guide to effective intervention. Evidence-based evaluations of interventions using the clinical trial methodology inevitably confine themselves to highly specific issues. As I have argued in detail elsewhere (Illsley, 1980) this is inappropriate for dealing with large-scale structural change in which formal trials are impracticable and in which the ruling out of external influences is self-defeating because the objective should be to allow for the outcome of such influences. The material needed to set up an informed set of hypotheses about the forces

generating inequalities is already available in existing research. It now needs to be formulated and tested. Politically it may be impossible to implement findings from such an analysis of structural processes but social scientists should be able to identify the full range of options.

It will be important to define success. It is discouraging to strive and never to arrive. Success will almost certainly depend upon the scale, consistency and duration of intervention, and upon knowledge of which interventions can be effective. If equality is a distant dream, it might be advisable to define success in terms of limitations of the worst and specifically targeted excesses and a nudge in the right direction.

4. Health action

Across the country the NHS is being asked how it can itself further reduce health inequalities. Some suggestions constantly recur: improvements in access and communication, particularly for ethnic minorities; sharper focusing of resources on deprived areas; regular auditing of progress and the lending of medical credibility to social action (see Benzeval et al., 1995; Acheson, 1998). Beyond that, committees and individuals are scratching their heads and feeling helpless. The NHS has not been structured for social action. General practice is too individually oriented to move actively on social and public health issues. In the days of its great achievements public health was located where action had to occur and it had a workforce capable of intervention. That workforce has been dismantled. Much is now made of partnership - as it was once made of joint action, co-ordination, teamwork etc. But can one expect partnerships of organisations whose priorities lie elsewhere to act decisively and comprehensively on their non-priorities?

Medical advancement and health service action have played little part in the inequalities debate. The assumption has been that social causes required social remedies and that is ultimately correct. On the other hand the contribution of medicine and the health service to damage limitation, in the past and potentially for the future, should not be played down. Trends in health inequalities have been almost totally measured by class death ratios which tend to play down the extent of achievement. The emphasis on ratios obscures not only the size of the fall but the fact that almost by definition all such reductions in mortality have saved or prolonged far more lower than upper class lives. The emphasis on death ignores parallel reductions in sickness and suffering. Medicine and the health services must have contributed something to this. If society had been as well organised as medicine and the NHS, and social policy as effective, today's problem would be less formidable.

EQUITY AND COST-EFFECTIVENESS: A SHORT NOTE

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There is a widespread perception that seeking to be cost-effective and seeking to be equitable are inevitably in conflict with each other. My view is that at the level of principle this is a mistaken view, though at the level of practice it is perfectly understandable why people should have reached that erroneous conclusion.

I will start with the very understandable reasons why people might think that 'equity' and 'cost-effectiveness' are conflicting objectives, then consider how some people have attempted to talk their way out of it, and finally explain why, in strict logic, there was no problem in the first place, or, rather, that the problem needs to be cast in different terms if we are to understand the situation correctly.

The alleged conflict between Equity⁵ and 'cost-effectiveness'

Setting aside those who mistakenly equate 'cost-effectiveness' with cost saving or cost minimisation *no matter what the effects*, the problem seems to stem from the notion that 'cost-effectiveness' equals 'efficiency' equals 'getting the biggest bang (i.e. health gain) for a buck'. Economists themselves (including me) have fostered that view by talking about 'equity-efficiency trade-offs' which clearly implies that the pursuit of efficiency and the pursuit of equity are in conflict with each other. In policy discussions (e.g. concerning the current activities of NICE) this surfaces as an important additional question (to be asked after the submissions have been made): 'how are we to balance equity considerations against the evidence presented about clinical-effectiveness and cost-effectiveness, designed to demonstrate the significant health gains from this product or activity?'. Similarly the drive for more evidence-based medicine (which seldom even takes costs into consideration) concentrates entirely on maximising health gains and not at all upon the specific interpersonal distribution of those gains. So both in the technical discussions between various kinds of expert, and in the wider policy discussions, being (cost) effective is regarded as competitive with being equitable.

Finding an empirical way around this dilemma

Some people have sought a way out by arguing that by being more equitable we would in fact be being more efficient, because in practice there are some things we could do which would not require us to face that dilemma. If by reducing inequalities in health we raise overall levels of health more than would be possible by any other use of our scarce resources, then reducing inequalities in health is a cost-effective policy and should be pursued on those grounds alone. If it were true that such policy possibilities exist, well and good, but in my view that is not the best

response, because it fails to challenge directly the notion that cost-effectiveness is all about getting the biggest bang (i.e. the maximum amount of health gain) for a buck! So let me now do precisely that.

Finding an intellectual way round this dilemma

The problem stems from the unjustifiably narrow interpretation given to the terms 'cost-effectiveness' and 'efficiency'. Let me start with the latter. Economists distinguish two levels of efficiency: *low-level (or technical) efficiency* is about pursuing an activity at minimum cost, and this is clearly a morally relevant objective in the health field as elsewhere, since costs represent sacrifices that someone is going to have to bear, and we need to minimise such sacrifices by avoiding wasteful ways of doing things; but, more important in the present context, is the broader notion of *high-level (or allocative) efficiency* which is about doing those activities that best fulfil your objectives, since it is not enough to pursue every activity at least cost if you are pursuing all the wrong activities. Both kinds of efficiency need to be pursued if a system is to be deemed efficient.

But note carefully that in the preceding paragraph *high-level efficiency* was defined as 'doing those activities that best fulfil your objectives' without specifying what those objectives might be. Replacing the terminology of 'efficiency' with the rival terminology of 'cost-effectiveness', this is equivalent to observing that the terminology itself leaves open what 'effectiveness' is and how it is to be measured and valued. The unfortunate convention has (quite understandably) developed that clinical effectiveness means health gain, hence cost-effectiveness means health gain per buck, and efficiency means maximising health gains per buck. But there is absolutely no reason in principle why this should be so. Maximising health gains is indeed an important objective of public policy, and probably the most important objective of the health care system, and therefore deserves prominence, but not to the exclusion of other significant objectives. Economists have dropped quite naturally into thinking that because efficiency is always about maximising something subject to a budget constraint, then since it is health gains that clinical effectiveness is all about, so it must be health gains that the health care system is trying to maximise, and that a health care system is efficient only when it does so. If it turns out that sometimes some people want to pursue other objectives as well, then this will almost inevitably require some sacrifice of efficiency, i.e. the aggregate level of health (somehow defined) may have to be lower in order that the distribution of health (somehow defined) maybe better (somehow defined). Hence the 'health-maximisation *versus* health-distribution' trade-off becomes the 'efficiency *versus* equity trade-off'.

It is probably too late to do anything about this unfortunate terminological elision at this stage in the development of policy thinking, but my own personal solution to it is as follows. Public policy typically has multiple objectives, and there are many different instruments available for pursuing those objectives, so what we need to know is the relative cost-effectiveness of each instrument with respect to all policy objectives simultaneously. Some policy instruments may affect only one objective, in which case things are greatly simplified, but this will be rare. Because of the complexity of the situation, routine managerial performance measurement of those in control of the various instruments has to simplify things enormously and focus on a few key issues. Hence medical audit concentrates on death and complication rates and procedural

considerations concerning patients actually treated, and does not review whether on equity grounds it would not have been better for society as a whole if other patients had had priority over those that were actually treated. It is this latter kind of question that policy analysts pose, and they find that although people are quick to point out the distortions created by simplifying matters, when the analysts seek clear articulation of these multiple objectives it is not forthcoming, so they have to supply it themselves. This may be done on a contingent basis ('if this is what you think equity means, and if this is the weight you want to give it when it conflicts with other objectives, then this instrument would be the best one to use, and your policy should be to use it in this way') or on an advocacy basis ('obviously the best concept of equity to adopt is this one, and it deserves to be given higher weight than this other objective that you are already pursuing, so you should adopt this instrument and your policy should be to use it in this way'). I observe a dangerous tendency for analysts to be claiming to be doing the former but actually doing the latter. Analysts are entitled to become propagandists, of course, but they should put up a little flag when they cross the line.

But back to my main point, which is that if efficiency and cost-effectiveness are both about pursuing whatever objectives you have at least cost, and if equity is one of those objectives, then there can be no equity-efficiency trade-off. There can, of course, be a health-maximisation versus health-distribution trade-off, which will give rise to the policy issue 'what is the most cost-effective way to pursue both simultaneously, giving each its due policy weight at the margin where they come into conflict'. This is what in economists' jargon is called identifying the arguments in the social welfare function, and specifying its functional form. This is my own particular research interest at present, and it is clear to me that not only is there a health-maximisation-versus-health-distribution trade-off but, because there are many different views as to what constitutes an 'equitable' distribution of health, and they often conflict with other, then there are a host of 'equity-equity trade-offs' too.

A further layer of complication ensues when equity is defined in terms such as 'equal access for equal need', since in this context 'need for health' and 'need for health care' are often not distinguished clearly. People 'need health' whenever they are unhealthy, but they only 'need health care' if there is some health care that will alleviate the particular kind of ill health with which they are suffering. Thus a need for health care implies a capacity to benefit from health care, and the greater the health gains a person will get from some specific health care activity, the greater is their need for that intervention. If this is the meaning to be attached to 'equal access for equal need', then this is precisely what a policy of health maximisation achieves and it is not really an additional equity objective at all, but a condition required if health is to be maximised. But for some people 'equal need' means equal need for health, and this is to be measured by the severity of illness, not by the efficacy of treatment. But if there is no efficacious treatment (and 'treatment' includes tender loving care), what is it that they are supposed to have 'equal access' to if we are to treat them equitably?

There is of course still an argument in equity for providing marginally effective treatments to those who have enjoyed poor lifetime health compared with those who have enjoyed, or look likely to enjoy, a 'fair innings'. This is an equity argument for being prepared to spend more on prolonging the life of a young person than on prolonging the life of an old person, and for being prepared to spend more to bring about a small improvement in the quality of life of someone

who has been permanently disabled compared with doing the same for someone whose lifetime experience of health has been better than average. This is the essence of the trade-off between health-maximisation and health-inequality-reduction as the twin objectives of health care.

A recommendation

So what I would recommend is that we accept that trade-offs have to be made between the often conflicting multiple objectives of public policy, and that every policy recommendation has implicitly taken a stance on what (at least some of) these trade-offs should be, and we should try to make these as explicit as possible and test the sensitivity of our recommendations to changes in these relative weights, because not everyone will agree with them. But wherever we place ourselves in this policy arena, the issue of efficiency or cost-effectiveness will present itself, not in the narrow interpretation with which I started, but in the broader interpretation with which I finished. The implication of that is that in the pursuit of any particular objective we want to minimise the sacrifices we have to make in the successful pursuit of our other objectives. That is what efficiency, and cost-effectiveness, is really all about. As such it is something more than an unfortunate necessity; it is an ethical imperative!

WHAT DO WE KNOW ABOUT THE EFFECTIVENESS, AND COST-EFFECTIVENESS OF MEASURES TO REDUCE INEQUALITIES IN HEALTH?

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Summary

This paper provides a summary of existing reviews and systematic reviews of the effectiveness of interventions to reduce health inequalities. These reviews were identified through contacts with authors, and searches of electronic databases. It also discusses some of the problems with identifying evidence of such interventions.

The list of effective and potentially effective interventions includes the following: structural measures, such as free school milk and meals, and water fluoridation; home injury prevention, and health education in children; improvements in accessibility of health care services; some home visiting interventions; some aspects of mental health promotion; dietary interventions in pregnancy; and social, financial and psychological support during pregnancy and childbirth. Evidence about effectiveness is, however, currently sparse, and evidence about cost-effectiveness even more so, but several ongoing studies are likely to provide relevant information.

There are several reasons for this lack of evidence, one of which may be an unwillingness to accept that concepts such as 'effectiveness' or 'evidence' should be used in this context at all. There remains a pressing need to rigorously evaluate the health impact of policies, and to address the structured social inequalities that create health inequalities in the first place.

Introduction

Health inequalities associated with income inequality have been documented since the 1970s and are common to most industrial nations (Wagstaff and van Doorslaer, 2000). Most current literature on the topic is oriented towards documenting those inequalities, with a much smaller literature discussing the effectiveness of interventions. Occasionally this literature expresses an outright antipathy towards research attempts to find out 'what works' (in particular, studies based on experimental or quasi-experimental methods). Nonetheless there have been several published reviews with the explicit aim of summarising evidence of effective interventions to reduce health inequalities, and there have been other recent systematic reviews which, while not aimed primarily at reducing health inequalities, do suggest a range of interventions which have the potential to do so. This paper aims to:

- 1) summarise the evidence presented by these reviews and other studies, and
- 2) highlight some problems in the identification of evidence of effectiveness and cost-effectiveness.

What is an 'effective' intervention?

It may be helpful to start by considering what is meant by effectiveness in this context. In the health care literature, an effective intervention from the view of the health care professional is one where desired outcomes are achieved (Muir Gray, 1997), or more generally where a greater improvement in health is brought about compared to standard care (or doing nothing). This definition is however not easily applied to interventions to reduce health inequalities, where the desired outcome is not simply an overall improvement but the narrowing of the health gap between higher and lower socioeconomic groups (Acheson, 1998). For example, in Gepkens and Gunning Schepers' (1995) review, an intervention is only considered 'effective' when it is at least as effective for the lowest socioeconomic status groups as for the highest - and is considered ineffective when the intervention is more effective in the higher socioeconomic groups (Gepkens and Gunning-Schepers, 1995; 1996). The Acheson report took a slightly different approach, emphasising the importance of addressing inequalities across the whole social spectrum, as it argued that policies addressed solely at those at the bottom of the social hierarchy would alone not decrease inequalities (Acheson, 1998).

This underlines the general problem that interventions that are effective in general public health terms may be ineffective in reducing health inequalities. For example, health promotion messages may be taken up more by those who need them least, such as the well-off and well-educated, while interventions which do not need to be mediated by the effects of education may have better prospects for improving health without increasing inequalities. Thus, structural and environmental interventions (such as water fluoridation) may prove particularly effective (Woodward and Kawachi, 2000; Macintyre et al., 1998). In contrast, interventions that rely on access to the health system may actually increase inequalities, if there are socioeconomic differences in access to health services (Woodward and Kawachi, 2000).

In identifying 'what works', therefore, there are two possible sources of evidence: approaches which concentrate on deliberately tackling health inequalities, and those which reduce health inequalities as a 'beneficial side-effect' of some intervention (that is, the reduction of inequalities was not the primary intended target). The second of these maybe more common; in one recent review the authors commented that none of the interventions they identified were specifically aimed at a reduction of socioeconomic differences in health (Mackenbach and Droomers, 1999). Examples of these interventions are described in the next section.

What is known of the effectiveness and cost-effectiveness of interventions to reduce health inequalities?

1. Effective interventions

A number of systematic reviews in recent years have set out to explicitly identify evidence of effective interventions to reduce health inequalities (see Table 1 and Appendix 1). Specific interventions identified by these reviews include the following:

In addition, the Evaluation Group examining the evidence presented to the Independent Inquiry into Inequalities in Health presented a summary of particularly promising policies for reducing health inequalities (Appendix 2) (Macintyre et al., 1998). This includes many of the

Table 1: Specific interventions identified by existing reviews

- Structural measures, such as free school milk and meals, and water fluoridation
- Heating installation in damp, cold houses
- Home injury prevention in children
- Health education in children
- Improvements in accessibility of health care services
- Many home visiting interventions
- Support to young mothers from ethnic minority groups
- Some aspects of mental health promotion
- Social, financial and psychological support during pregnancy and childbirth
- Dietary interventions in pregnancy

interventions already described in Table 1. The evaluation group recognised the paucity of studies, but also noted that some existing evidence of effective interventions had not been presented to the Inquiry.

The 1995 NHS CRD review also identifies *general characteristics* of health service interventions likely to be successful (see Appendix 1) (Arblaster et al., 1996; NHS CRD, 1995). Some reviews are also currently in preparation but not yet published: for example, Barnardo's will very shortly publish a report on effective interventions in child health, which includes public, social and fiscal policies (Roberts, 2000), and the European Network on Interventions to Reduce Inequalities in Health is preparing a handbook of effective interventions, which will be published in 2001 (Stronks, personal communication)).

2. *Cost-effective interventions*

There may be few studies of the effectiveness of policies to reduce inequalities, but it is even more difficult to determine the cost-effectiveness of interventions. This is not surprising; the infancy of cost-effectiveness and cost-benefit analyses in the public sector is well known, and much the same could be said of healthcare interventions (Davies et al., 2000). However, some limited information is currently available. A systematic review of the health impacts of housing improvement interventions identified an unpublished study with a cost analysis, which found that home heating improvements resulted in savings on NHS treatment costs (Thomson et al., ongoing; Somerville et al., 1999). The savings to the NHS alone exceeded the annual equivalent cost of the housing improvement (Somerville et al., 1999). However, the study is uncontrolled and caution is advised by the authors. Other ongoing housing studies may provide additional information on the effectiveness and cost-effectiveness of housing improvement as a tool for reducing health inequalities. For example, the Glasgow Warm Homes study, an ongoing controlled study of the health effects of housing improvement in 500 homes, will include an economic analysis.

Other ongoing studies in the UK will also address questions of effectiveness and cost-effectiveness. A study in Devon is currently using a randomised stepped-wedge design to assess the effects of refurbishing local authority housing. The National Research Register also describes RCTs of safety advice and interventions for families in deprived areas, of smoke alarms in inner

city housing, of the effects of day care on health and welfare of disadvantaged families with children.¹² Controlled studies of breakfast provision for children in a deprived area, of a school 'Food Club' for children from deprived backgrounds (which includes a cost analysis) are also described.

In summary, existing reviews have found little information so far on the cost-effectiveness of interventions, but some ongoing studies are expected to provide such information. However, decisions based on cost-effectiveness alone are likely to remain difficult, and often impossible. Given this relative absence of cost-effectiveness data, Woodward and Kawachi take the view that, as the cost-effectiveness of the few programmes designed to reduce health inequalities is largely unknown, other arguments in favour of such interventions can be employed, such as fairness (Woodward and Kawachi, 2000).

Why do we know so little?

One reason for the current lack of good evidence lies in the continuing 'paradigm wars' over the most appropriate research methods for evaluating social interventions. It is still commonly argued that the search for interventions that 'work' is a biomedical enterprise which is inappropriate to the reduction of health inequalities. Perhaps as a result, community level interventions are often evaluated inappropriately (Smith et al., 1997), and more generally there is often an unwillingness to seek or provide robust evidence of 'what works'. This may act as a barrier to finding effective ways to reduce health inequalities.

There are several common arguments which are used to reject the idea that the effectiveness of interventions (such as policy options) should be assessed in experimental studies. These include the following:

1. There are insurmountable methodological problems (for example, the impossibility of randomisation, the risk of dilution bias, and the long timescales sometimes involved in measuring some health outcomes).
2. Such studies are ethically unacceptable.
3. Studies of effectiveness are simply not necessary ('we know they work').
4. Studies of effectiveness are not sufficient (the process, and the quality of the intervention are more important).

Methodological arguments

These arguments have been frequently and thoroughly discussed and frequently refuted, and so will be considered only briefly here. Firstly, the argument that there are methodological difficulties with social experimentation is true, but the fact that many randomised field studies already exist suggests that the arguments are overstated. A list of these studies was compiled by Boruch and colleagues over 20 years ago (Boruch et al., 1978) and a more recent review gives a number of specific examples of RCTs relevant to reducing health inequalities (such as free school milk, and maternal home support) (NHS CRD, 1995).

¹² A recent Cochrane review on day care for pre-school children also suggests that day care may be significantly cost-effective in terms of increasing maternal earnings (Zoritch et al., 2000; based on Joshi and Davies, 1992).

Other methodological objections can be overcome. For example, the long timescales which are sometimes necessary can be addressed by assessing plausible pre-specified short-term outcomes on the causal pathway between the intervention and the final health outcome. Take for example the health effects of urban regeneration: in order to assess health outcomes we would need to start by thinking of the socially and biologically plausible potential mechanisms by which urban regeneration might improve (or damage) health, and then develop a framework which allows us to evaluate the interventions in terms of relevant intermediate or long-term outcomes. It is unlikely that urban regeneration would have immediate effects on major health outcomes such as death rates or hospital admissions, or would influence these in all population groups. We would therefore need to identify shorter term effects, plausibly associated with the intervention. For example, in mental health we could consider the effects on substance use (smoking, alcohol, illicit drugs) among young people, and depression and anxiety among young people and adults. Thus, in studies where it is not feasible to measure 'hard' endpoints such as mortality, relevant plausible risk factors may be identified and measured.

Ethical arguments

A range of other specific methodological problems and possible solutions have also been addressed elsewhere (Boruch et al, 1978; Cook and Shadish, 1994; Oakley, 1998). In general, we believe the methodological arguments against social experimentation to be overstated, as Berk, Boruch and colleagues pointed out in 1985: 'Practical and ethical obstacles to social policy experiments have been vastly overrated...useful social policy experiments can be funded for modest sums and can be highly cost-effective.' The ethical arguments can seem particularly weak, with their implication that routine, uncontrolled experimentation (which is currently the norm), is somehow more ethically acceptable than well-designed studies in which informed consent is obtained, and in which there is a prospect of obtaining useful information on benefits and harms.

Arguments that effectiveness studies are not necessary or sufficient

Similarly, the argument that RCTs of social interventions are simply unnecessary, because some interventions are obviously beneficial, is also difficult to support. Many interventions supported by observational studies have subsequently been shown to be ineffective in RCTs; for example, observational studies of adolescent pregnancy prevention interventions yield systematically greater estimates of treatment effects (Guyatt et al., 2000). Many other well-meaning interventions simply do more harm than good (Macintyre and Petticrew, 2000), and in the case of public health interventions which affect so many people, these small individual harms may be magnified, to create considerable social costs.

There is also a common perception that experimental methods are simply answering irrelevant questions, because the processes and the quality of delivery of interventions to individuals are paramount, and attempts to summarise the effects of an intervention at an aggregate level are meaningless. In the place of robust generalisations about effectiveness, are assurances that if a programme helps just one person, then it is worthwhile. The possibility that this help may well be achieved at cost to others is not often explored. The risks of focussing solely on processes and on intervention quality are however demonstrated by a recent systematic

review of the effectiveness of a juvenile delinquency intervention, 'Scared Straight.' (Petrosino et al., 2000). This programme involved showing young delinquents around US prisons and introducing them to long-term prisoners, in an attempt to scare them away from a life of crime. All the process indicators were positive: the programme was enthusiastically received by state legislators, prisoners, offenders, and the public. Unfortunately, 7 RCTs found that 'Scared Straight' increased the percentage of the treatment group committing new offences anywhere between 1% and 30%. Despite its widespread popularity, 'Scared Straight' was clearly harmful. This suggests that while evaluating the actual outcomes of social interventions may not be a popular exercise, it is a necessary one. Without rigorous outcome evaluation there is a real risk of perpetuating ineffective and harmful policies, on the basis that participants and stakeholders value them.

Summary and conclusions

One of the implications of the UK's historical disinterest in social experimentation is that we now have little UK-relevant experimental evidence to fall back on to help inform policy and practice in the reduction of health inequalities. The continuing antagonism toward social experimentation may also have resulted in the loss of opportunities for assessing the health effects of interventions, as appears to be the case with studies of income supplementation.¹²³¹ This increases the risk that we import 'good ideas' unevaluated, on the grounds that they are 'likely' to work, or on the grounds that they worked in the US. Evidence from locally relevant research is clearly needed, and such evidence is currently accruing from a number of ongoing UK studies. Other evidence may be derived from health impact assessments of policies (Dahlgren et al., 1996).

Finally, there is a risk that the search for evidence will focus primarily on downstream interventions, which simply manage the consequences of poverty, while the policies that cause it remain unchanged (Macintyre, 2000). One unintended effect of downstream interventions may simply be to legitimise poverty, making it both more tolerable for individuals and less costly for society. There still remains a pressing need to evaluate the health impacts of policies, and to address the structured social inequalities that create health inequalities in the first place (Macintyre, 2000).

Appendix 1: Reviews and systematic reviews of (mainly non-health sector) interventions to reduce health inequalities

Authors	Objective of review	Methods	Most effective interventions, as specified by authors	Conclusions on cost-effectiveness of interventions
Bunton et al. (1994)	Critical review of effectiveness of interventions to promote health in economically deprived areas	Systematic review of literature in any language	'There is a dearth of evaluation studies... work is at a formative stage... North American Work leads the field [and] it is difficult to translate the American findings to the British context... UK studies to date have been small and local.'	Although a number of studies of costs have been undertaken, and though a number of these studies have produced suggestive findings, none of them are robust enough to provide solid advice to purchasers on the most cost-effective intervention options.
Gepkens and Gunning Schepers (1995; 1996)	An evaluation of interventions to reduce socioeconomic health differences	Systematic review of structural, health care, and health education/promotion interventions. Literature identified through searches of MEDLINE; contacts with Dutch and UK experts and libraries; searches of grey literature from the Netherlands and the UK	<i>Structural measures:</i> Free school meals or school milk; fluoridation of drinking water; home injury prevention in children; installation of heating in cold, damp houses. Support to pregnant women promotes use of preventive care in children, and improves their mental and physical development; Health education in children has a positive effect on nutrition, dental care, and substance abuse; stress management lowers stress in low SES women. <i>Health care and disease-specific interventions:</i> intensive education and guidance reduces risk of CVD in low SES children and adults. Personal education and support for smoking cessation. Interventions targeting general health determinants: in the US, financing programs such as Medicare and Medicaid, and free medical care; provision of interpreters to enable migrants to access services; personal guidance to the economically disadvantaged to increase health care access. <i>Health educational/promotion interventions:</i> personal support improves knowledge and behaviour, but effect on health gain is largely unknown; health education and promotion is effective in low SES groups only as part of an intensive intervention; specially 'tailored' mass media campaigns.	The costs of the various interventions are hardly ever discussed, thereby rendering a cost-effectiveness analysis virtually impossible.
Mackenbach (1999)	Proceedings of workshop on interventions to reduce socioeconomic inequalities in health	Summary of various national experiences with interventions and policies	Most reviews of national experiences in this area suggest that reducing health inequalities has not been a target of the intervention, so data is lacking. Results of targeted, well-defined interventions are as yet sparse but a range of interventions with potential are identified (e.g., legislative, social, fiscal), e.g., Droomers and Mackenbach review interventions to reduce health inequalities in the Netherlands; most are aimed at lifestyle modification and are ongoing, so results not summarised. Graham, Benzeval and Whitehead review employment-related initiatives, and area-based initiatives (e.g. HAZs, EAZs). Health impacts of welfare to work: work is ongoing, no evaluation of the health impacts working family tax credit, or the National Minimum Wage was found, and evaluations of area-based interventions are ongoing, and may have the potential for reducing socioeconomic health differentials.	

Appendix 1: Cont'd

Authors	Objective of review	Methods	Most effective interventions, as specified by authors	Conclusions on cost-effectiveness of interventions
McDonagh et al. (2000)	Objective 3 of systematic review of public water fluoridation: Determination of whether fluoridation results in reduction in caries across social groups	Systematic literature review off 214 studies (before/after, cross-sectional, ecological, cohort and case control studies)	15 studies investigated the association between water fluoridation, caries and social class. There appears to be some evidence that water fluoridation reduces inequalities in dental health in 5 and 12 year olds, though little data relating to other age groups.	Review did not identify research related to the cost-effectiveness of water fluoridation. A search of the NHS Economic Evaluation Database did not identify any recent studies meeting the criteria for a full economic evaluation.
NHSCRD Report 3	Review of the research on effectiveness of health service interventions to reduce variations in health	Systematic review of published and unpublished literature	Characteristics of successful interventions include: systematic and intensive approaches to delivery; improvements in accessibility; prompts to encourage use; multifaceted strategies and approaches involving collaboration between interest groups, and the involvement of peers in the delivery of interventions such as home visiting (though these characteristics alone are not sufficient for success), Many successful interventions involved home visiting (e.g., to reduce accidents, improve quality of child care, and improve nutrition). Concerns raised about the generalisability of interventions to the UK from other countries.	Very few studies explicitly considered the cost-effectiveness of the intervention used. Even basic data on costs was rarely given. Research to collect and report basic cost data should be strongly encouraged.
Other interventions with potential for reducing socioeconomic differences in health				
Effective Health Care Bulletin (2000)	Promotion of breastfeeding	Systematic literature review of RCTs and non-RCTs	Some evidence for the effectiveness of educational initiatives such as discussion classes; limited evidence for effectiveness of peer support programmes, or media activities.	Further research is needed to identify the most cost-effective interventions; evidence is currently very limited
Effective Health Care Bulletin (1997)	Mental health promotion in high risk groups	Based on systematic literature reviews	Effective interventions are identified to promote mental health and prevent mental health problems in high risk groups (including those in poor social environments); e.g. interventions to reduce the psychological impact of job loss, and promote re-employment. These include cognitive-behavioural interventions, seminars and social support.	Need for more reliable evidence of cost-effectiveness of mental health interventions needed.

Appendix 2: The Independent Inquiry Evaluation Group's potentially promising interventions' (Macintyre et al., 1998)

- Structural measures, such as free school milk and meals, and water fluoridation
- Smoking cessation (nicotine replacement, and behavioural therapy)
- Pre-school education/child care
- Fluoridation of drinking water
- Accident prevention (structural rather than educational)
- Drug educational programmes in schools
- Social support during/after childbirth (to promote mental health and breast feeding)
- Measures to improve the uptake of NHS services among ethnic minority workers (e.g., link workers)
- Addition of folate to flour
- Free school milk
- The provision of free smoke alarms

WHICH HEALTH INEQUALITIES MATTER MOST?

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Introduction

I have been asked to respond from my own perspective about what are the most important issues, which inequalities matter most and what may the panel have overlooked. Let me begin with a confession: having read the papers I am now more confused about my understanding of the issues and, as a result, am driven back to the comfort of the positions I have held most recently and ways in which some aspects of health inequalities have been addressed.

The perspective I bring to today's meeting is that of an administrator who has served as part of the Chief Executive Service of the Government of Australia and prior to that as Director of NHS Wales. And I also bring a Nuffield Trust perspective.

I want to focus my observations on the following:

- an overview of inequalities;
- health, not just health care;
- an international perspective;
- overall health or individual health;
- globalisation.

The Nuffield Trust's interest in this topic spans at least the last twenty years. Notable contributions to the issues under consideration today were raised by Raymond Illsley in a publication of the Nuffield Provincial Hospitals Trust in 1980, *Professional or Public Health? Sociology in Health and Medicine*. Professor Illsley said 'Since the days of the celebrated epidemiologists of the early and middle nineteenth century there has been no dearth of discoveries linking disease to environmental conditions and experience. From the overcrowding of poor populations in large insanitary cities through the polluted atmosphere of industrial life and the dangers of heavy traffic, to cigarette smoking and inadequate exercise. Epidemiologists have demonstrated the effects of social and environmental experience on such diverse conditions as infectious diseases, the cancers, industrial and traffic accident, chronic bronchitis and heart disease. If we add differences in class and regional mortality revealed periodically by the decennial census, the total volume of known socially induced illness and premature death is formidable.'

Overview of inequalities

In December 2000 the new Policy Institute, supported by the Joseph Rowntree Foundation, produced its third Annual Report of indicators of poverty and social exclusion. The data is the most comprehensive and up-to-date available with the latest years being 1999 or 2000

depending on data availability. One of the key points of the report is a claim that significant health inequalities persist. 'Premature deaths are becoming more geographically concentrated, children in the manual social classes are twice as likely to die in an accident as those in the non-manual classes, and the poorest two-fifths are one and a half times as likely to be at risk of a mental illness as the richest two fifths.'

The report also goes on to say that the number of people living in households with less than half average income, after housing costs, was 14.25 million in 1998/99. This is more than double the number of the early 1980s and half a million greater than at the previous high point in 1992/93. The numbers with less than 40% of average income have followed a similar trend.

The summary of the poverty and social exclusion indicators have shown that the following have worsened over the last year:

- intensity of low income (below 40% of average income)
- low birthweight babies
- children 10-16 in young offender institutions
- problem drug use in the 15-24 age range
- obesity
- excess winter deaths
- help from social services to live at home
- households in temporary accommodation

These figures merely underline why it was important that Sir Donald Acheson be invited to lead an independent inquiry into inequalities in health and why also the government, in announcing its NHS Plan for England, said that it would bring health improvements across the board for patients but for the first time there would be a national inequalities target.

Health, not just health care

I welcome the distinctive focus on health rather than on the agencies concerned with health such as the NHS. In Alan Williams' and Raymond Illsley's preamble they recognise that access to healthcare may prove to be a contributory factor in causing inequities in health and need to be remedied. I support this view and we must not allow the heavy emphasis on overall NHS operational performance to obscure the wider health of the people perspective. Iona Heath makes the point in her paper of the importance of incorporating socioeconomic risk factors into the clinical method. There is, as she says, 'a socioeconomic gradient in the incidence and prevalence of all major disease categories. Practical access to healthcare is a problem for some, such as the homeless and people in rural areas who may lack transport.' She goes on to say that universal access depends on two inter-related factors: the provision of adequate and appropriate services and the extent to which people are able to maximise their benefits from these services. Iona Heath also cites evidence of inequality in cancer, quoting Coleman et al. (1999). She says 'Although people from deprived areas are more likely to develop cancer, they present to specialist services at later stages of disease compared with patients from more affluent areas'. The use of mental health services is positively correlated with high levels of deprivation and unemployment but there are disturbing inequities across different ethnic groups. This latter point features prominently in the government's release of the publication of the results of the most extensive

survey into the health of minority ethnic groups, and the first national survey to include minority ethnic children as well as adults.

Rudolf Klein in his paper on setting targets stresses that inequalities in health have a distinguishing feature from other forms of inequality in that they cannot be addressed directly by redistributive policies. Hence the case for expressing policy targets in terms of improving the health of the worst off by setting condition-specific targets whether defined by income, ethnicity or gender. But above all targets must be do-able. I would like to quote Sir Douglas Black writing about the position of medicine (Black, 1984). 'The discussions which took place during the three-year gestation of our report 'Inequalities in Health' convinced me of the essential correctness of the thesis put forward by many, but perhaps most convincingly by McKeown (1979) that the major determinants of health and disease lie outside the realm of direct medical competence, so long as 'medicine' is narrowly conceived. But my whole thesis is that medicine must not be narrowly conceived and that we must on the one hand gladly accept the gifts brought to us by the progress of medical science, and apply them for the benefit of patients; and on the other, as Virchow recognised, we must be the natural advocates of the disadvantaged. In other words we need a synthesis of care for the individual and concern for the people.'

This was very much the thinking that informed the Secretary of State for Wales's initiative on Team Care Valleys. So I return to my comfort zone, which is that the NHS can make a contribution to reducing inequalities by ensuring access and availability of appropriate services in some of the most deprived areas and for the most disadvantaged individuals.

International perspectives

My Welsh Office experience - our priorities and the scale of our task - in developing and implementing a Strategic Intent and Direction for NHS Wales:

'working with others to enable the people of Wales to enjoy a level of health amongst the best in Europe' (*Welsh Office NHS Directorate, 1990*)

would have been very different if we had taken a United Kingdom benchmark, as opposed to benchmarking Wales in the wider European region of WHO. And furthermore, the benchmarking of the United Kingdom in terms of life expectancy, coronary heart disease and in cancer, and our average overall expenditure was one of the most defining features of the Prime Minister's initiative to raise the average expenditure on the NHS in the UK to the European average. So international perspectives and international benchmarks are important in informing and providing some transparency for policy making, policy analysis and monitoring and evaluating performance.

In the Nuffield Trust funded project *Policy Futures for UK Health* - a project on how fit-for-purpose is UK policy - Charlotte Dargie highlights the recent UN (1998) report - *Changing Consumption Patterns for Tomorrow's Human Development*. In it the United Kingdom was seen to fare poorly on the grounds that while the country is advanced, it is divided: one in five British adults is functionally illiterate, one in six people live in poverty and, of the twenty most advanced countries in the world, Britain has the highest number of young prisoners and the

longest working week. I recognise that the IPEH have concentrated on the United Kingdom and deliberately excluded international comparisons which, I believe, is not in the overall project's best interest, and in any case it would be worthwhile to look at countries like Sweden and recently Spain which had been experiencing widened disparities in health and have now been able to reverse some of this trend (Drever and Whitehead, 1997).

Reducing health inequalities rather than improving general population health

Adam Oliver (2001) in his recent publication *Why Care About Health Inequality?* raises the same question as Williams and Illsley in their preamble; namely that most of the public discussion in the UK has centred on geographical inequalities and social class inequalities, taking little account of the significance of age, sex, ethnicity. But there is a broader question to consider; namely how important to the population is the reduction in inequalities compared with raising the average level of health. Williams and Illsley explain that there may be cases where these objectives conflict and the issue arises of which matters more.

I would claim that both policy objectives should be pursued. In Australia, whilst I was Director-General of New South Wales Health, the national policy objective was to enable Australian people to enjoy a level of health amongst the best in the world. In New South Wales this was also the same general objective but there was a specific additional task of closing the gap and focusing on the worst off, such as Aboriginal people.

Globalisation

I would like to highlight the need for the inequalities issue to be viewed in the wider context of globalisation. This is one of the major themes of the Nuffield Trust - Global Health: A Local Issue. The challenge is best summed up in the following quote from Ilona Kickbusch.

'Governments fought to preserve their rights and sovereignty over health care policy but have lost sovereignty over the determinants of health to multinational enterprises, global finance and marketing of lifestyle goods - food, tobacco, information - which determine health outcome more than health care'.

Nuffield Trust interest

I began by referring to Raymond Illsley's Nuffield Provincial Hospitals Trust publication. I would like to come back to that and quote again from it:

'We have not yet developed satisfactory overall measures of illness and death, and the aggregation of conditions of differing aetiology might well, through cancelling-out effects, understate the true position. The net result is an insoluble jigsaw puzzle, in which the perceptible pieces receive more attention than the fragmented ungraspable whole. Specificity may assist diagnosis and treatment of the individual, but it hides the implications for political, economic and social policy which might emerge from a more holistic presentation.'

This issue of measurement serves as a central part of the current WHO agenda. Murray et al. (2001) say 'we define health inequality to be variations in health status across individuals in a population' and, as Amartya Sen (1992) has said, 'the classic question in the context of health is equality of what?' It is critical for a debate on health and inequality first to articulate what the quantity of interest is and why, and then to proceed to measure it, depending on the available data.

The Nuffield Trust organised a trilateral meeting - USA, UK and Canada - in Chateau Montebello in September 2000 entitled *What Determines Health and Quality of Life - Health as Good Economics*, and a number of its recommendations are relevant to this point. We need to develop a set of headline health indicators to be used as benchmarks. They could be set alongside existing economic indicators and the government and the public could refer to them periodically to assess progress. The US, as the meeting heard, has already made a good start in developing a set of headline indicators, and Canada is intent on following suit. There is scope for co-operation between the three countries in this area, perhaps involving the Department of Health, the Health Development Agency in the UK and their equivalent institutions in Canada and the United States. The indicators would serve a variety of purposes at all levels from national policy-making to action at the level of local communities. Priority must be to popularise the indicators when reporting them back to the public: connecting with the public and adopting an inclusive approach at a local community level is essential.

Also relevant to this meeting was the importance of reorienting and strengthening the research and teaching agenda. Universities are a strategic resource, part of an international community of scholars. They play a vital role in promoting and implementing a health policy agenda in respect of research, teaching and education. At present the infrastructure to address both research and teaching needs is weak and in need of strengthening. The skill base is too thin and investment is needed to build capacity. Our Canada meeting supported the establishment in the United Kingdom of a greater multidisciplinary research capacity for health inequalities. We suggest that there should be core funding - say over some 20 years - for a centre with a critical mass to inform policy development and implementation. Further, that this centre's remit over time is to ensure the setting up of smaller units across the United Kingdom to tackle local problems at a local level. As far as possible the policy direction and research endeavour must be aligned but there is a risk that short-term policy research, governed by a political timetable, would provide unsatisfactory answers or advice. There is a need to invest for the long term. The final point is the notion of creating health promoting universities as a focus for the totality of the intellectual effort. For the inequalities agenda this would appear to be appropriate because the skills base needs to extend from health sciences through to sociology, economics and community development.

Conclusion

In this paper I've highlighted what are some of the major inequalities and the extent to which some have worsened. I welcome the emphasis on health but we should not lose the opportunities that the NHS itself offers to tackle health inequalities by targeting its disease-specific programmes at target populations and also ensuring that the operational health service takes a broader population - health of the people - perspective. Whereas it is right to concentrate most

effort on looking at the United Kingdom, this should be informed by taking an international perspective and learning from experience elsewhere. This international perspective should also take account of the emerging appreciation of globalisation and health.

In addressing the inequalities question of which matters most, I'd like to conclude by making reference to a project under the auspices of the National Heart Forum - Young@Heart. The objective is to develop a framework of policy proposals and recommendations including action at local, regional and national level, to tackle the origins of coronary heart disease in childhood. The intention is to path-build for cross-sectoral policy implementation to eliminate avoidable CHD before the age of 65. As I have said, I looked for comfort zones as I reviewed the literature for today's meeting and I believe here is a practical project to be commended: it deals with some of the most disadvantaged and it also takes what is known from medical science on the economic, environmental, health and educational policy context. This is a tangible, do-able project and I believe it can make a difference in respect of inequalities and health.

WHICH HEALTH INEQUALITIES MATTER MOST?

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The question that has been posed is: which inequalities matter most? This begs another question: matter to whom? It is a political, not merely a technical or philosophical question.

An economist or epidemiologist, for example, may try to determine which inequalities affect the largest numbers, or which have the steepest gradients between certain groups. Or which inequalities are likely to lead to greater, or lesser, efficiency or cost-effectiveness. A philosopher may relate the question to ideas about social justice. And so on.

Apart from perspectives shaped by intellectual disciplines, individuals addressing the question are likely to be influenced by their personal experience and interests. If I were from a black or other ethnic minority, I might decide that inequalities in morbidity between ethnic groups were most important. If a man, the very startling differences between male and female mortality rates. Or, if I were old, it might be inequalities in access to services between age groups - age discrimination. A country dweller may feel strongly that the most important inequality is the quality and scope of a whole range of public services, compared with those who live in cities. And, conversely of course, if I lived in a town or city, I might be most concerned about unequal rates of respiratory disease and how these linked with traffic and air pollution. Different inequalities matter more or less to different people.

So the question probably does not have a right or a wrong answer. It is a question of politics.

To a Conservative, inequalities might not matter at all - so the question would be irrelevant. A Liberal Democrat would probably be concerned with equal citizenship, so that the health inequalities that mattered most would be those that prevented or inhibited the exercise of citizenship - access to education, employment, civic participation, mobility and so forth. A good old-fashioned socialist would be most concerned about inequalities between social classes. And a follower of New Labour would probably give priority to inequalities between poor and socially excluded communities, and some sort of average of the rest of society. These are crude distinctions and are not intended to do more than underline the point that the question is a political one. There are far more shades of opinion and complex perspectives in political life.

Let me take for example, the issue of gender inequality. This is not an issue that is normally paid much attention. But why not? Between 1841 and 1991 average male life expectancy increased from 41 to 73, while female life expectancy increased from 43 to 79 - and the gap has been growing. Only recently has it begun to narrow very slightly, and that is thought to be largely because of increased smoking among women (Acheson, 1998).

But the most striking aspect of gender inequalities in health is that they override income inequalities. It is well known that poverty and health are closely related. Women's income over a lifetime is significantly lower than men's. Yet, using the Townsend index as a measure of

deprivation, the least well-off women have lower mortality rates than the most well-off men. It was not until 1992 that men's relative ill-health was officially recognised in the annual report of the Chief Medical Officer (Department of Health, 1993). The fact that it remained buried for so long may have been due - at least partly - to the fact that men, who have remained largely in control of the development of health policy, have not been able or prepared to scrutinise men as a specific group. It took a couple of decades, from the time when feminists first put gender on the health policy agenda, for it to become legitimate, and then desirable to study the specifics of male experience.

Even then, the differences between men's and women's chances of good health and long life have proved hard to unpack and understand. Men's health and men's attitudes to their bodies and their health are intimately bound up with their masculine identity. As Petersen and Lupton (1996) put it in their book *The New Public Health*, 'The ideal male body suffers no pain or weakness, is never ill and never breaks down... to be a man is to invite, rather than avoid risk.' Trying to improve men's health relative to women's would almost certainly involve challenging male attitudes and behaviour. Yet this is a sensitive matter - gender politics remains an awkward outsider in political life. Politicians broach the subject at their peril.

I don't want to dwell on gender inequalities any longer. My political judgement is that they are not *the most* important. But they serve to illustrate the point that whether one kind of inequality is considered important or not can depend on an interplay of diverse political interests and imperatives.

Let's take another perspective. From the point of view of a government that has just pledged itself to produce a national inequalities target, the most important inequality is one, I would think, that lends itself to targeting. That means it must be:

- related to things that are easily measurable in ways that produce uncontested figures,
- not likely to have compromising political side-effects (like gender),
- susceptible to specific public policy interventions that are also affordable (by whatever criteria of affordability are currently in place),
- likely to show results within a politically acceptable time frame,
- consistent with the broader political agenda of the government and
- politically defensible - so that if it is primarily a symbolic target, it should promise a genuine influence over inequalities that are widely recognised as important (if not *most* important).

This narrows the field considerably. The front runner at present looks like being post neo-natal mortality rates. Another option under consideration is the gap between mortality rates in different health authority areas. But in order for any 'headline' target to be defensible, it almost certainly needs to be accompanied by a 'basket' of other targets related to activities and processes that are thought likely to signal progress in the right direction.

A difficulty with national targets is how they can be linked with the widely differing circumstances that prevail at local levels. These may arise from different population mixes and more or less severe health problems relating to, for example, ethnicity, social and economic conditions, rural or urban conditions, local politics and traditions - and so forth. The inequalities that matter most will vary from one locality to another. It also may be sensible to focus public policy not just on pursuing a national target, but on creating the conditions in

which local agencies can identify and tackle the inequalities that *they* consider most important. And to do so in ways that make most sense to local people, and which they think are most likely to make a difference. That would mean involving local people in the process of deciding which inequalities are most important, and what to do about them.

We have evidence from a project recently completed at the King's Fund (Staley, 2001) that when citizens are involved in choices of this kind, they don't choose purely out of self-interest but according to their understanding of what is good for the community as a whole. They will decide on a course of action that is not directly in their own interests, but for the greater good of others. However, they will do this only if they are persuaded by evidence from a source they consider trustworthy. So if there is going to be an informed dialogue about this highly political matter of deciding which inequalities matter most, then it is important to have a robust model for conducting a dialogue with the public that combines lay and professional expertise.

This approach may, of course, open up further inequalities between localities - an almost inevitable result of empowering local people to participate in decisions that affect their lives. But if the question is essentially political, then surely it is a matter - ultimately - for democratic decision-making.

WHAT ARE THE CAUSES OF HEALTH INEQUALITY?

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Within a UK context the term 'inequalities in health' is usually understood to refer to socioeconomic differences in health or disease status that are regarded as being inequitable. The Black Report (Black, 1980) and the more recent Report of the Acheson Committee on Inequalities in Health (Acheson, 1998) have taken this as their primary focus. How to understand these inequitable differences in health status and what may be done to redress them has been the central agenda. The UK is not alone in this and within Europe there are a number of countries, notably Sweden and the Netherlands, that share a common understanding of 'inequalities in health'. In contrast, in low and middle income countries, 'inequalities in health' are generally regarded as being to do with issues of equitable access to health services and health care - which are very problematic in many countries of the South (Leon et al., 2001). In this discussion of the causes of inequalities in health I will focus on the issue of the generation of inequalities in disease and mortality. It is clear, however, that the generation of inequitable socio-economic differences in health status and inequitable access to health services are both important issues everywhere.

The processes that generate socio-economic inequalities in health status vary by cause and context. As Williams and Illsley note in their preamble: "... different inequalities have different causes, and these causes might change over time as economic, political, medical, scientific and social circumstances change". The specific biological and social mechanisms that generate socioeconomic differences in one disease are not necessarily the same as those that generate differences in another disease. Moreover, socioeconomic differences can vary over time. These points are well illustrated by reference to lung, stomach and breast cancer (Leon, 2000). Socioeconomic differences in lung cancer today are pronounced, with higher rates among men and women who are in manual social classes compared to non-manual classes. However, this has not always been the case. Although rates of lung cancer rose steeply in Britain in men in the first half of the 20th Century, pronounced socioeconomic gradients only emerged in the decade after the end of the second world war, driven by earlier divergence in smoking prevalence and habits between social classes. Mortality from stomach cancer has been declining in Britain for almost 100 years. Throughout this period social class differences in mortality have remained roughly constant, again with higher rates in manual compared to non-manual classes. These persistent effects are almost certainly driven by past differences in exposure to and hence prevalence of *H. pylori* infection. Finally, emphasising that socio-economic differences vary in strength and direction by cause (Davey Smith et al., 2000), breast cancer mortality in women showed a pronounced positive gradient in the middle part of the 20th century, with rates higher in non-manual compared to manual classes. However, more recently there are indications that

this pattern is disappearing, with some evidence of the mortality gradient being reversed. These social class patterns are driven by a variety of factors including patterns of childbearing, growth in childhood and most recently by treatment. Similar observations may be made concerning the variability and likely determinants of social class gradients in mortality from coronary heart disease compared to stroke (Leon, 2000).

These few examples underline the importance of taking a disease-specific approach to inequalities in health status. The variability over time and the heterogeneity of socioeconomic gradients by disease provide clear evidence against socioeconomic differences in general being driven by some 'general susceptibility' factor, such as psycho-social stress. This of course is not to deny that there do exist some general socioeconomic differences in conditions of life that have common effects on a range of diseases. For instance, in countries and epochs where poor living conditions include overcrowding and poor sanitation, these circumstances can generate increased risks of a wide range of communicable diseases from tuberculosis to diarrhoeal disease. As already mentioned, differences in hygiene and hence risk of infection with *H. pylori* lie behind the social class differences in stomach cancer, while differences in streptococcal infection in children gives rise to social class gradients in rheumatic heart disease later in life. In countries that have gone through the epidemiological transition, it is obvious that there is socially-patterned clustering of health-related behaviours (smoking, drinking, diet, etc.) that affect the risk of a range of aetiologically distinct diseases. However, this is not the same as a 'general susceptibility'⁵ factor in which socioeconomic differences in disease rates are driven by some ultimate (biological) cause.

There is one central issue in understanding trends and differences in disease and mortality rates that is often overlooked. This is that some non-communicable diseases involve substantial lag times between the onset of exposure to the aetiological agent(s) and the diagnosis of disease or death. This is well known with respect to cancer. Case in his classic studies of chemical workers (Case, 1966) showed that there was a delay between first exposure to C-naphthylamine (a potent bladder carcinogen) and diagnosis of bladder cancer that ranged between 10 and 40 years. Similarly there is a delay of many decades between starting smoking and development of lung cancer. Moreover, the decline in lung cancer risk following quitting of smoking occurs over a period of 20 years (Enstrom and Heath, 1999). The concept of latent periods between exposure and disease onset also applies to coronary heart disease, in the sense that this is a condition with origins in early life. The Bogalusa autopsy studies of children have shown very clearly that there is evidence of early stage atherosclerosis in the first few decades of life (Berenson, 1987). Occurrence of a myocardial infarction or death from coronary heart disease is the end point of a pathogenic process that spans the entire life-course. Thus, even for coronary heart disease crucial aspects of risk are set decades before clinical signs are evident.

There are of course, influences on disease risk and mortality whose effects are manifest over much shorter periods of time. The most obvious example is the link between alcohol consumption and deaths from injury in a population. A change in alcohol consumption levels (by whatever means) will feed through immediately to changes in rates of motor vehicle accidents and associated fatalities. This sort of acute phenomenon is writ large in the recent perturbations in mortality from a wide range of causes seen in Russia since 1985 (Leon et al., 1997; Shkolnikov et al., 2001). In this context there is good evidence that changes in binge

drinking have a profound and almost immediate affect on mortality from cardiovascular disease.

Given this variety in short and long-term influences on disease risk and mortality, it is evident that while some changes in exposures will have immediate effects, others will take a lot longer to become apparent. In the context of socioeconomic inequalities in health status, therefore, this means that interventions to reduce these inequalities are going to vary in terms of the rapidity with which they will be effective. In general, however, assessments of this temporal dimension of policy impact have been ignored. A first step in making good this important omission would be to grapple with the following thought experiment:

'If conditions of life (exposures) and access to health care (screening and treatment) were instantly made the same across all socio-economic groups how quickly would differences in disease incidence and mortality equalise?'

To answer this question we need to make better use of our understanding of disease aetiology. However, it is not just a question of academic and theoretical interest. Given the short time-horizons of the policy makers and politicians, it would be highly desirable in advancing the case for various interventions to reduce inequalities in health if we are able to state clearly over what time frame they are likely to be effective. Such information is clearly highly pertinent to the rational development of policies. To the extent that some interventions represent long-term investments, making this clear at the outset will provide the basis for continuity in policy despite the absence of immediate short-term advances.

Finally, socioeconomic inequalities in disease status within countries should be seen as part of a broader canvas of socioeconomically induced variations and trends in disease rates over time in populations and between countries and regions, a point I have argued in detail elsewhere (Leon, 2000). Making connections between phenomena at different scales is likely to be highly informative with regard to our understanding of the dynamic relationship between social change and health.

WHAT ARE THE CAUSES OF HEALTH INEQUALITY?

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Cause and policy: An international approach

The growth of inequalities in health cannot be understood except in an international context. There are general forces of globalisation at work, common across all countries, which have to be analysed if social polarisation¹³ is to be tracked and explained, so that trends in health can also be explained. And the growth of transnational companies (for example, Korten, 1996) must lie at the heart of such analysis.

The World Health Organisation

Acknowledgement by the international agencies of the growth of inequalities is all too fleeting. For example the World Health Organisation testified in one of its reports to the strong impact on health of structural change. "Globalisation of the economic system is accompanied by trends towards privatisation and market economies. In many countries, social disintegration related to poverty and unemployment has led to a deterioration in health", affecting children, women and the elderly in particular (WHO, 1995, p. ii).

The first authoritative testimony of this dismaying development for the 'transitional' economies of Eastern Europe and the former Soviet Union came from UNICEF in the early 1990s (see, most lately, Cornia and Pannicia, 1999). Millions had been impoverished and mortality among large sections of population was increasing fast (see UNDP, 1998 and 2000). But trends common to different regions of the world and the responsibility in part of the policies of the international financial agencies and TNCs, including pharmaceutical giants (Mossialos and Dukes, forthcoming) have not been systematically examined. Indeed, at the June 2000 review in Geneva of progress since the World Summit for Social Development of 1995, John Martin, for the WHO, appealed for 'poverty-oriented initiatives'. WHO had felt relegated in the 1990s "to a role of safety net, a matter of delivery of basic, publicly funded services". Although the Organisation had established a Commission on Macroeconomics and Health it continued to look only at the major diseases causing poverty rather than the principal causes of poverty itself.

It was in 1985 that WHO adopted a target, in fulfilment of its policy of health for all, of reducing inequalities in health by 25% by the year 2000. Today that promise looks hollow. In its World Health Report for 1999 the Organisation stated "The incomes of rich and poor continue to diverge" and went on to say that "Those living on less than \$ 1 a day are five times more likely to die

¹³ This is documented for many countries in Townsend P. Prisoners of the global market: Social Polarisation and the growth of poverty. In: Baudot J. (Ed.) Building a world community: Globalisation and the common good. Copenhagen: Royal Danish Ministry of Foreign Affairs, 2000. See also Gordon D, Townsend P. (Eds.) Breadline Europe: The measurement of poverty. Bristol: Policy Press, 2001.

before age five than those living on more than \$1 a day" (WHO, 1999, pp. 14 and 19). Investigation of countries like Sri Lanka and India showed that level of income and material facilities like sanitation, safe drinking water and collection of waste, rather than health care systems as such, were the key factors concerned with the statistics of mortality. If we are to take health impact assessment (for example Birley, 1995) seriously, the impact of policies on the health of population groups with low and high income has to be measured routinely, and exactly.

The United Kingdom

The lessons from the huge historical literature on inequalities in health in the UK can be applied internationally. Health is a function primarily of social development. The investigation of health inequalities gives best access to an understanding of the creation, maintenance and destruction of individual health, for the good reason that this generalises what individuals experience in relation to health and focuses sharp attention on extreme contrasts and on the causes for the trends that are taking place. By looking at an entire structure of population health the significance of different contributory elements can be put into proportion and therefore the causes and policy responsibilities can be better prioritised.

The Black Report of 1980 and the Acheson Report of 1998¹⁴ demonstrate the heightened problem created by dramatically widening living standards in the UK since the late 1970s. The Acheson report made 39 principal recommendations. Pride of place was given to the need for policies to "reduce income inequalities and improve the living standards of households in receipt of social security benefits" (Acheson, p. 36). Benefits in cash or in kind had to be increased to reduce "poverty in women of childbearing age, expectant mothers, young children and older people". That also applied to pensioners. There were 9 supporting recommendations explicitly linked to reinforce the call for integrated action on unemployment, ethnicity, the elderly and disability, as well as generally on families with children, to bring about increases in levels of benefit and real living standards. Another 10 of the 39 Acheson recommendations sought to meet material needs in schools, housing, the environment, transport, and in relation to diet. Like the Black report of 1980, Acheson concluded that a dual strategy of action within and outside the health care system was required.

The Government reacted by avoiding the key structural question. The White Paper "Saving Lives: Our Healthier Nation" made almost no mention of the growing inequality of income and of measures to boost the inadequate incomes of the poor, other than a reference to the minimum wage and to the Working Families Tax Credit and the Childcare Tax Credit (Cm 4386, p. 45). The Government's initiatives on cancer, heart disease, accidents and mental illness, together with the acceptance that "while the roots of health inequality run deep, we refuse to accept such inequality as inevitable" (Ibid, p.44) were welcomed. But the message about the substantial structural action required to turn round the growing divisions in society, especially by addressing the inadequacy of many current social security benefits, was not in that report raised or discussed. There was no signal that the dual strategy was going to be extensively developed.

¹⁴ See also the collected set of evidence submitted to the Acheson inquiry: Gordon D, Shaw M, Dorling D, Davey Smith G. Inequalities in health. Bristol: Policy Press, 1999.

Structural action needed

According to official statistics the structural problem continued to grow - at least up to the latest available national evidence - 1999. The poorest 20 per cent of households (nearly 12 million people), who depend for 80 per cent of their income on benefits, had an average disposable weekly income of only £86 a week (at 1997-8 prices) in the financial year 1994-5 and, three years later, £87. In 1998-9 the average was £92. The richest 20 per cent of households had an average of £707 in 1994-5 and advanced to £753 in 1997-8 and £807 in 1998-99. The richest 20 per cent had 8.2 times the income of the poorest 20 per cent in 1994-5, 8.6 times their income in 1997-8 (ONS, 1998b, Table 8.3), 8.8 times their income in 1998-9 (ONS, 1999, Table 8.3) and 9.4 times their income in 2000-2001 (ONS, 2000, Table 8.3). It remains to be seen whether the data for 2001-2002, the final year of the Labour Government's term in office from May 1997, when published, will show that the widening trend in disposable income on the part of major sections of the population is still continuing.

The Acheson team argued for policies which "increase the income of the poorest" and showed how important it will be to raise benefit levels, restore the earnings link to national insurance and other universal benefits, and introduce more progressive taxation (Acheson, 1998, pp. 32-36). The Government's Action Report of July 1999 was intended to address this central recommendation but did not. It remains unexamined. The plea to equalise incomes and raise different social security benefits for millions of poor people still needs to be turned into exact operational elements of a bold integrated national plan.

In its third report to the Prime Minister in September 1998 (Cm 4045) the Social Exclusion Unit proposed a broad programme for "tackling poor neighbourhoods". The New Deal for Communities programme for 17 districts was launched. Funds for local initiatives covering everything from jobs and crime to health and housing were introduced. Ten Whitehall departments were to be involved. Their assignments include getting more people into work, better management of neighbourhoods and housing, reducing anti-social behaviour, extending schools and youth facilities, improving access to shops, financial services and information technology and making the government work better.

The strategy is imaginative and undoubtedly obliges different departments and specialists to work together. However, while the Downing Street Unit is inter-departmental, pump-priming and experimental, it is clearly preoccupied with anti-social behaviour as well as with access to services and to job and other opportunities, and is not dealing with really major Government expenditure. Its work is distinct from that required to assault poverty. There is a structural problem of poverty of the first magnitude - illustrated above - which needs to be dealt with immediately.

With support from authoritative recent reviews of income and of health, including those formally sponsored by many of the principal organisations acting on behalf of medicine (i.e. the Royal Colleges of General Practitioners, Nursing, and Physicians, the Faculty of Public Health Medicine, Action in International Medicine and the BMJ (for example, Hills, 1998; Davey-Smith, Hart, Blane, Gillis and Hawthorne, 1997; Wilkinson R.G., 1994; Shaw, Dorling, Gordon and Davey Smith 1999; Pantazis and Gordon, 2000)), the harmful effects on the distribution of income of particular policies (such as the abandonment of the link between earnings and benefits, cuts or reductions of benefits for some vulnerable groups and the flagging level of child benefit) have to be identified as obstacles to the reduction in inequalities of health.

In particular, a report might be prepared on the minimally adequate income and benefit needs of differently constituted families - setting appropriate targets in relation to the Government's minimum wage and anti-poverty policies, especially for children. This would be the basis for a phased programme to raise benefits of impoverished groups who have little chance of getting back into paid employment. That is the top priority. This would represent the necessary step towards implementing the recommendations of both the Black and Acheson Committees - making substantial real improvements in child benefit, lone parent benefit, incapacity and disability living allowance benefits and the basic state retirement pension. Such a programme would have special value for discussions in the international agencies about the global strategies that are necessary.

International dual strategy

I have given priority here to action outside the health care system.¹⁵ But, as indicated in many of the international reports about inequalities of provision of health care, the challenge within all country systems of care is also of immense importance. There is a growing literature about equity of access - applying to the poorest as well as the richest countries. One cross-national report is concerned with countries such as China, Vietnam and the United States (Manh Hung et al,2000).

Equity of access is much worse in the US than in many rich and middle-income countries. Equity is a structural problem within the system there, and some of the lessons from the poorest countries, as well as from European experience, apply. Public health care reforms turn out to be more efficient than market-oriented reforms. As Dahlgren concludes: "An evidence-based health care policy should take into account that privatisation is likely to increase total costs for health services as well as inequities in terms of access to good health care. These negative effects will be further reinforced when private providers are subsidised by public funds, as this usually implies that a greater share of available public funds will be allocated to economically better-off urban areas" (Dahlgren, in Manh Hung et al, eds., 2000, p. 263).

¹⁵ I have developed the arguments at greater length in Forbes I. (Ed.) *Health inequalities: Poverty and policy*. London: Academy of Learned Societies for the Social Sciences, 2001.

WHAT IS TO BE DONE ABOUT HEALTH INEQUALITY?

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Can anything be changed until everything is changed?

Research shows clearly that health inequalities are principally generated by socioeconomic or structural social factors operating throughout the life course. This usefully points to the need for social policy to address these structural factors. However, it can also lead to decision makers taking a rather fatalistic stance and to researchers carrying out more and more research which simply reinforces these associations. To quote Helen Roberts, "can anything be changed until everything is changed?" (Roberts, 1997). Do we need to wait for governments to undertake radical and comprehensive change or are there effective actions that can be implemented locally without waiting for whole scale political and policy change?

Hard to redistribute health

One of the fundamental problems faced by those with a policy objective of reducing inequalities in health is that, unlike income and wealth which can at least to some extent be redistributed, health cannot be directly redistributed between people or groups. One cannot make direct transfers of QALYs between social groups. Thus the usual fiscal approaches cannot be used for such redistribution in the short term. Redistribution in any fundamental or structural sense can only be made by means of redistributing the causes of health or ill health. At one level this means redistributing the socioeconomic circumstances which affect health outcomes, such as income, and command over resources, like housing. However, simple transfers may not affect health in the ways predicted because though personal resources can be redistributed, their use cannot be controlled. Thus, for example, lifestyle and cultural differences may mean that an extra pound allocated to a poor family may be used more unhealthily (e.g. in the purchase of cigarettes) than it would be in a richer family. More importantly in this context, the marginal gain in health for a poor family due to an extra pound may be less than the loss of health in a richer family when reducing their income by a pound. There is growing research evidence that marginal rates of transformation of resources into health are lower for poorer people. Even simple, moderate income redistribution, therefore, may not be particularly effective. Also there is growing evidence that in periods of economic growth when the whole of society is gaining income, this differential rate of transformation may in fact result in an increase in health inequalities.

Whilst significant reform in which the fundamental determinants of health are redistributed on a permanent basis is probably necessary to reduce inequalities (note the lack of significant change in the extent of inequalities in health associated with moderate reform), are there other interventions which can make a difference?

NHS interventions

The main approach which has been used up to now is that of making health care generally available. National health service and social insurance approaches which have reduced or removed financial barriers to accessing health care provide the preconditions for getting health care to those in need; however, the persistence of inequalities of access to health care documented in the UK and elsewhere demonstrate that this is not sufficient. More attention needs to be given to ensure that those with most need get the appropriate care. Rather than relying on the system to passively distribute care equitably, a more active approach is needed with 'equity audits' to target those in most need and monitor the distribution of access and resource use relative to need.

It is important that this be accompanied by focussing effective interventions on those most in need. Just because resources are allocated to areas based on need and there is relatively open access doesn't mean that resources are deployed equitably. There is evidence that the poorest groups do not get the most appropriate care and that resources are not used for those health technologies most likely to deliver the greatest health gain for these populations. Studies showing success in tackling these problems include Stamler et al. (1987) who vigorously targeted an at risk population in the USA to improve their access to hypertensive care resulting in a narrowing of social inequalities in stroke. Targeting cost-effective interventions to reduce smoking for revascularisation and contraception for teenagers can all improve health in poorer groups.

Such a policy requires local political nerve in order to ensure that poorer groups are targeted, which is important since general interventions (e.g. screening and vaccination) often increase inequalities. What is not clear of course is whether the NHS is capable of using its resources in pursuit of such an explicitly social objective. The NHS was never designed to be a mechanism for reducing social inequalities and redistributing health to the poor. GPs prefer to deal with the middle classes, and are unlikely to be willing participants in social rationing which is inversely correlated with the mildly regressive patterns of health care use that currently exists.

Non-NHS interventions

This gives some pointers as to NHS approaches that can help to reduce inequalities in health. However, they are all downstream interventions, dealing with or ameliorating the effects of poverty. These will never be entirely successful and will not result in a level playing field. For example, whereas health care is probably responsible for the near elimination in inequality in infant mortality in babies of lone mothers compared to couple registrations, this has been confined to the neonatal period and not shown in the post neonatal period (Whitehead and Drever, 1999). Only more fundamental social interventions will have that effect.

Probably the most important variable in affecting long term life chances is education. We know that this is the single most important predictor of teenage pregnancy and various experiments such as *High Scope* have shown that supplementary education in the early years for disadvantaged groups can affect health and social outcomes many years later (Roberts, 1997). Randomised controlled trials have also demonstrated the benefits of out-of-home daycare for preschool children on their cognitive and social development (Zoritch et al. 1998). The

government's attention to education is, therefore, to be welcomed as is their investment in Sure Start. However, it is not clear the extent to which they fully appreciate the importance of education, especially in the early years, or else more resources would have been targeted on education than, say, health. It is probable that the marginal return on investment in education in the early years (in particular) is greater than the huge investment in reducing waiting lists.

This highlights the need for more evaluation of the social return on different forms of investment in poorer groups. Good intentions are not sufficient, and there are several examples where social interventions such as social work for delinquency and rehousing have resulted in unchanged or worse outcomes for disadvantaged groups.

Outstanding issues

Several policy issues remain to be considered. Firstly, the health inequalities debate can become rather parochial. Whilst health is of course important, it is not the only or even the most valued outcome. We have become obsessed with health and a broader perspective on the distribution of welfare or happiness is needed. This is especially true given the opportunity cost of health generating investments.

Secondly, we need to manage our own expectations about what reduction in inequality is achievable within a 'free' society. We can redistribute income, we can provide access to services but enabling people to make choices that society prefers does not mean that they will (Birch, 1994). We need, therefore, to come to a view as to how much we want to reduce health inequalities and how far we are prepared to go to achieve them. Perhaps we need to shift the debate from exclusive focus on relative health (inequalities) to absolute health and the idea of minimum standards. Whilst the interventions may be much the same, the ability to monitor these and set achievable policies is probably greater.

Whichever approach is adopted, it will be important for government to develop a more coherent policy agenda in which the various performance targets do not compete with each other.

WHAT IS TO BE DONE ABOUT HEALTH INEQUALITY?

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For too long, policy makers wanting to tackle health inequalities have been offered a choice between the superficial and the apparently impossible. They have been asked to try and modify individual lifestyle behaviours, or to overhaul the entire economy.

Why? By privileging one layer of causation over another, rival analysts have sought to attribute power - and culpability - to different social actors and mechanisms. Blame has been apportioned to negligent individuals on the one hand, or to oppressive economic and social structures on the other.

Explanation shapes action. But rather than mobilising effort, this sterile dichotomy has bred paralysis and excused inaction. The more individualistic and behavioural the explanation, the smaller the role for government. The more totalising and structuralist the explanation, the harder it has seemed for communities and other agencies to act.

The time has come to accept a multilayered set of explanations for health inequality - and to match that with a similarly eclectic and wide-ranging set of policy responses (Dahlgren and Whitehead, 1991). This is broadly the approach of the Acheson Report (Acheson, 1998). It means abandoning the sectarianism of the 'one right answer'. It means accepting that there are macro, meso and micro causes and influencers. And it means implementing both 'upstream' and 'downstream' interventions.

Take smoking. It kills 120,000 people a year, and is one of the most important contributors to class-based inequalities in mortality (Department of Health, 1998; Peto et al., 1994). Right-libertarians claim these smokers are purely exercising free choice - but ignore the impact of poverty, powerlessness, culture and nicotine dependency in shaping this choice. By contrast, Left-determinists regard smoking by the poorest as an almost inevitable response to life circumstances - even though 70% of smokers say they want to quit (Freeth, 1998). The alternative involves a broad-based response that tackles poverty and powerlessness, and complements it with measures such as a ban on tobacco advertising, and free nicotine replacement therapy and bupropion for smokers who want to give up.

A similar, multilayered approach can be applied across a range of health risks and determinants. It usually involves action across a range of policy domains. Employment, housing, environment, social security, and education policies are all implicated. While health itself cannot be redistributed, many of the factors that influence health can either be distributed more equally upstream (such as education) or be redistributed downstream (such as income).

But that fact alone is insufficient to achieve cross-sectoral action for health. Each sector has its powerful vested interests. Each has its own policy objectives and internal logic which may relate

* The opinions expressed here reflect my own personal views. They are in no way officially representative of the Cabinet Office.

only tangentially, if at all, to a concern for health inequalities. There is no guarantee that cutting health inequalities is a more powerful rallying cry to mobilise the necessary coalition of action than, say, the call to raise educational standards for all, to cut crime, or to ensure ecological sustainability. So health inequalities work will sometimes need to sail under a flag of convenience.

Focusing on children's health inequalities has some important advantages. Acheson concluded that many of the interventions with the best chance of reducing health inequalities relate to children and their mothers (Acheson, 1998). Such a policy appeals to people's sense of natural justice: that every child should have a fair start in life. Importantly it also trumps Right-libertarian attempts at victim-blaming, since the question of young children's own agency does not arise.

National targets can galvanise effort. Of course there are uncertainties about what can be achieved, so they need to be kept under review. But the very process of setting national health inequalities reduction targets has two benefits. It forces policy makers to confront the counterfactual: that on plausible assumptions and in the absence of effective action, inequalities would continue to widen. Similarly, it forces analysts to spell out and justify their estimates of the likely impact of their policy prescriptions.

One result is an increasing acceptance that the role of the NHS should not be ignored. The NHS resource allocation formula is being changed to better target funding at reducing inequalities. Primary Care Trusts are being developed to try and provide a platform for population-focused primary care. The new NHS performance regime for the first time explicitly incorporates equity of access to services. But more can be done. While it may be true that the most important *causes* of health inequalities lie outside the control of the healthcare system, it does not follow that healthcare *responses* have no place.

Even if only part of the answer, the NHS is one of the more tractable delivery mechanisms for action on health inequalities. The NHS is a provider of health services, a purchaser of inputs, and a major employer. It is the largest employer in many of this country's poorest communities. It has an annual spend of £60 billion - making it bigger than the entire economies of many of the world's nations. It should not be let off the hook.

The challenge for policy makers is now to act on the evidence of what will work. The challenge for health inequalities analysts is to respond to the new appetite from these policy makers for specific, feasible and affordable policy options.

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