

Is the NHS equitable? A review of the evidence

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LSE Health and Social Care Discussion Paper Number 11

First published in November 2003 by:

LSE Health and Social Care

The London School of Economics and Political Science

Houghton Street

London

WC2A 2AE

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British Library Cataloguing in Publication Data

A catalogue record for this publication is available from the British Library.

ISBN [0 7530 1683 4]

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Executive Summary

The central question of the paper is whether the NHS is inequitable and if so, what form the inequity takes and what are its principal causes. The paper begins with a brief discussion of the meaning of equity in the context of the NHS. The definition adopted regards observed inequalities in utilisation as proxies for inequalities in access. The paper reviews the available evidence on the existence of inequity in the NHS from macro-studies and micro-studies. Evidence from macro- or aggregate studies is not clear-cut. Early studies showed utilisation by higher income groups was higher than lower income groups adjusted for need. More recent studies using similar aggregated data suggest that this pattern has changed and the NHS is now pro-poor. However, a study using more disaggregated data and the majority of the micro-studies suggest that inequities in access persist. There is strong evidence that lower socio-economic groups use services less in relation to need than higher ones from many studies of specific NHS services. An attempt is made to explain the conflict through an assessment of the methodologies and data used.

Finally, the paper discusses the evidence concerning potential barriers to access such as lack of suitable transport and restrictions on time; superior connections and communications by middle class patients; and differences in beliefs about severity of illness and the need to seek medical attention. The paper concludes that policy-makers need to understand these barriers to access when devising policy aimed at eliminating persisting inequities in access identified in this review.

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Acknowledgements: We would like to thank Franco Sassi for his comments. The views expressed in this paper are those of the authors and not necessarily those of the Department of Health or the No 10 Policy Unit.

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1 INTRODUCTION

That equity is a major aim of the National Health Service (NHS) is beyond dispute. It would be hard to find a government document or academic study concerned with the principles underlying the Service that did not include some reference to the importance of equity or of its close synonyms, fairness and social justice. But there is much less agreement as to whether the NHS actually achieves equity or social justice in practice. In much popular debate, it is often assumed to be equitable if only by implication¹; thus many of the current government's proposed reforms such as the extension of patient choice are criticised for potentially creating inequities (1)². But it is possible to argue that the system is actually already inequitable: that there are social groups such as the poor or the ethnic communities who are significantly disadvantaged in their access to, and use of, the NHS, and that the present combination of bureaucratic allocation and professional authority actually favours the better off.

So is the NHS inequitable? If so, what form does the inequity take and what are its principal causes? Does any disadvantage arise because of inequalities in access to services by the individuals or groups concerned, or because of their relative inability to use the system effectively once they have accessed it? These are the central questions for this paper.

The paper begins with a brief discussion of the meaning of equity in the context of the NHS. It then reviews the evidence available on the existence or otherwise of equity in the National Health Service, focusing on differences in utilisation by different socio-

¹ In large part because as the NHS is predominantly financed through progressive general taxation and does not make widespread use of user charges, it avoids the main financial barriers to access that could explain inequity.

² Appleby et al. review the potential conflict between choice and other social objectives including equity: "there is no reason to think that it [patient choice] will necessarily ensure equity of delivery in terms of the equal treatment of people in equal need."

economic groups (SEGs)³. As will become apparent, some of this evidence is conflicting, and an attempt is made to explain the conflict. Finally, the paper discusses the evidence concerning potential sources of disadvantage. It finishes with a bullet point summary of the principal conclusions.

2 INTERPRETATIONS OF EQUITY

There are a large number of ways in which equity in health care can be defined (2, 3). But the principal one concerns access. More specifically, an equitable service is defined as one that offers equality of access to health care to individuals in equal need (often referred to as horizontal equity) (4). Put another way, the service or treatment available to individuals should depend only on their need for treatment, and not on factors that are irrelevant to that need. In particular, access to the service should be independent of individuals' socio-economic status, except in so far as this affects need. This interpretation will underlie the analyses of this paper.

However, there are two complications with this definition. The first concerns the distinction between access and utilisation (5-7). Equality in terms of access requires only that all individuals in need have the same opportunity to use the health service; equality of utilisation requires that they actually use the service. The preferred operational definition used by policy-makers or researchers will depend upon their attitudes to voluntarism. A particular individual or group of individuals may have similar health needs to the rest of the population, and the same opportunity to access or use the health care services that provide for those needs, but, for cultural or other reasons, they prefer not to take up those opportunities. In that case, it would be hard to describe any resultant inequalities in utilisation relative to need as inequitable. As one of us has argued: "Distributions that are the outcome of factors beyond individual

³ Equity issues arise, of course, not only in relation to socio-economic groups, but also with respect to groups within society defined in different ways such as age, ethnicity and gender. However, much of the research has concentrated on equity between socio-economic groups, and that is the subject of this paper. The terms social class and low income/ high income groups are also used in this study particularly where those measures of socio-economic status have been employed in the studies being analysed.

control are generally considered inequitable; distributions that are the outcome of individual choices are not” ((8):87).

In practice, obvious difficulties arise in attributing actual outcomes to choices or to factors beyond individual control. In consequence, most researchers in the field have concentrated simply on differences in utilisation. In doing so, they have implicitly assumed that any differences they observe are the result of inequalities in access and not of free choice. Thus inequality in utilisation is regarded as inequitable, either because it is inequitable in and of itself, or because it is a proxy for inequalities in access. In this paper we follow this last interpretation: that is, we regard observed inequalities in utilisation as proxies for inequalities in access and therefore as inequitable.

A second issue concerns the definition of ‘need’. Again this is a highly contested term. One interpretation is in terms of health status: that is, the worse an individual’s health status, the greater his or her need for treatment. A more refined definition links individuals’ need for treatment to their “capacity to benefit” from that treatment (9, 10) – an attribute that will obviously be related to an individual’s health status, but not necessarily in a linear or uncomplicated way. For instance, for some conditions patients presenting at an earlier stage in the progress of a disease often have a greater capacity to benefit (better outcomes) from treatment than those that present with more advanced disease, (and therefore worse health status). If need is defined in terms of capacity to benefit then the early presenters have greater need of treatment; if the definition of need is in terms of health status then the late presenters have greater need.

The issues concerning the appropriate measures of need cannot be resolved here. However, it is not necessary to do so. Capacity to benefit is very difficult to measure in practice, and in any case the research reviewed in this paper implicitly or explicitly defines need in terms of health status. Taking these two concerns together, we shall therefore be following most of the research reviewed and defining an equitable health service as one where individuals’ access to and utilisation of the service depends on their health state alone, and not upon their socio-economic status, except in so far as that affects their health state.

3 THE EXTENT OF INEQUITY

Empirical research into the extent of inequity in the NHS can be divided into two types. The first includes ‘macro’ studies of utilisation that consider the use of most or all NHS services by particular groups and which, in some cases though not all, compare this with the needs of that group as indicated by broad measures of self-reported morbidity. The second includes ‘micro’ studies that study the utilisation of particular services or treatment procedures in relation to need, sometimes defining need in terms of self-reported morbidity but in most cases using clinical records or other objective measures. Both kinds include studies that tell rather different stories, as we shall see.

3.1 Macro-Studies of Utilisation

The first systematic studies that attempted to relate utilisation to need for different social groups were undertaken in the late 1970s and early 1980s (11-13)⁴. Need was measured by self-reported morbidity (that is, individuals reporting acute sickness and limiting long-standing illness), while utilisation generally referred to some or all of GP consultations, outpatient attendances and inpatient treatment. Data were taken from the General Household Survey (GHS): an annual survey of some 33,000 individuals in Great Britain.

The studies suggested that utilisation of the NHS favoured the better off once need was taken into account, with higher socio-economic groups (SEGs) using the service more relative to self-reported morbidity than lower ones. These results were consistent with the views of earlier analysts of social policy. Twenty years earlier, Brian Abel-Smith ((15):56-7) noted that “the working classes could ... get ... free health services before the war. The contributor to National Health Insurance had the services of a panel doctor and anyone who was poor could go to a voluntary or local

⁴ There are a number of studies that have simply allocated expenditure without adjusting for need. The principal example is the series of articles on the distribution of taxes and benefits produced annually in *Economic Trends*, of which the most recent is (14). But precisely because these do not adjust for need, they are of little use in assessing equity as we have defined it here.

authority hospital without any payment”. “The main consequence of the development of the welfare state”, he went on, “has been to provide free social services to the middle classes”. Ten years later, Richard Titmuss ((16):671) pointed to the welfare state's failure “to close many gaps in differential access to, and effective utilisation of particular branches of our social services”. Furthermore Peter Townsend's major study of poverty in the UK ((17):222) found that, “contrary to common belief, fewer individuals in households with low rather than high incomes received social services in kind of substantial value”.

However, studies undertaken in the later 1980s suggested a more equal pattern. Collins and Klein used GHS data on self-reported morbidity as their indicator of need but focused only on GP utilisation (18, 19). They found that the only consistent class gradient that favoured the higher socio-economic groups was for males who did not report illness. Puffer undertook an econometric analysis of the determinants of GP use, again using GHS data (20). He found that, for a given level of morbidity, low-income men consulted their GPs more, but low-income women consulted less than the rest of the population. A more disaggregated study of GP utilisation by Evandrou et al, using 1980 and 1985 GHS data, yielded different conclusions for different age groups (21). Higher income/class respondents among males aged 41-64 and among females aged 16-40 and over 59 tended to under-consult relative to need, whereas higher income/class respondents among men 65 and over tended to over-consult. Only for males under 41 and for females aged between 41-59 was self-reported morbidity the sole determinant of utilisation.

One difference between these studies and some of the earlier ones is that the later studies refer to GP utilisation, whereas some of the others incorporated hospital utilisation (as outpatient and inpatient) as well. However, a study by O'Donnell and Propper used 1985 GHS data on self-reported morbidity and all three forms of utilisation (22). They found that the distribution relative to need favoured the three higher SEGs, although the gradient was not smooth, with the skilled manual and own-account non-professionals having a greater expenditure per person reporting illness than the other two groups (professionals, employers, and managers, and intermediate and junior non-manual). However, this gradient disappeared when the results were standardised for age and sex differences between the groups, with the results showing no systematic bias in either direction.

Sefton estimated the distribution of the use of health care services by income group using data from the 2000 GHS (23). He found that, among those who reported limited long-standing illness, those in the top two income quintiles reported fewer inpatient stays and GP consultations than those in the bottom three quintiles, but more outpatient consultations than the bottom quintile (though less than the second and third bottom quintiles). The results, however, were not standardised for age and sex differences between the groups.

More recent studies have added further international evidence on inequality of utilisation. Van Doorslaer et al used Eurostat's European Community Household Panel (ECHP) supplemented by similar surveys from the US and Canada to provide estimates of equality of access to GPs, specialists and all physicians combined (24). The 1996 ECHP collected survey data in most EU countries on a consistent basis and included questions on socio-demographic status, health care utilisation (private as well as public), self-reported health status and the presence of chronic health conditions and limitations to daily activities. While those on low incomes use all services more intensively, once standardised for need a fairly consistent pattern emerged across most countries. Total physician contacts were generally (including the UK) distributed according to need, as were GP visits, though in some countries (of which the UK was one) there was some tendency to be pro-poor. Contacts with specialists were more often pro-rich (including the UK). Overall, while total physician contact suggested equal treatment for equal need in the UK, there was a tendency for those on low incomes to use GP services and those on high incomes to use specialist services relative to need.

In an earlier study, van Doorslaer et al used national surveys but followed the same methodology (25). Obviously the rigour of the international comparability is lost in such surveys although they may be better designed for the individual idiosyncrasies of each country's health care system. The study for the UK was based on the GHS and found broadly similar results to the ECHP study, except that specialist visits ceased to be pro-rich (though strictly the GHS asks about outpatient visits rather than specialist visits). The study also included hospital admissions and these were also pro-poor. When weighted by cost, these tend to dominate other aspects of health care utilisation. Overall the UK, as with most countries, was not found to violate the principle of horizontal equity.

These studies offer a mixed picture, therefore, with earlier studies suggesting a pattern of inequity, but more recent ones not. However, perhaps the most comprehensive recent study, based on data from the annual Health Survey for England, confirms the earlier results (26). Sutton et al pooled data from the survey from 1994 to 1999, producing a large data set with a maximum of 122,500 observations. They used a rich set of self-reported morbidity indices including disease specific indicators as well as general ones⁵. In addition, they employed utilisation data on GP consultations, outpatient treatment, day case treatment and inpatient treatment, and socio-economic data including income, educational attainment, economic activity status and social class.

The study found that none of the socio-economic factors affected GP consultations once self-reported morbidity was taken into account. However, lower income individuals were less likely to have inpatient treatment than higher income ones; the unemployed were less likely to have outpatient treatment; and those with lower educational attainment were less likely to have outpatient, day case and inpatient treatment. The social class variables were generally insignificant, which the researchers interpreted as meaning that income, education and economic activity drive utilisation and that social class exerts no independent influence over and above those factors. Overall, they concluded that: “After controlling for morbidity in a number of dimensions, more deprived individuals (in terms of income, education and employment....) have lower than expected use of health services.... This implies that there may be unmet need for health care in terms of income, employment and educational deprivation” ((26):89).

3.2 Micro-Studies of Utilisation

In contrast to the macro studies described above that deal with aggregate morbidity and aggregate utilisation of the NHS overall, there is a large body of research containing studies that focus on access and utilisation of a particular service by

⁵ The indices used were: self-assessed general health status (very good, good, fair, bad, very bad), limiting long standing illness, normal activities cut down due to ill-health in the last two weeks, and a range of specific conditions: neoplasms, endocrine and metabolic, psycho-social, nervous system, heart and circulatory, respiratory, digestive and musculoskeletal.

different social groups in a particular geographical location. A previous review by Goddard and Smith identified a number of these micro-studies undertaken from 1990 to 1997 (27). These studies are not re-analysed here, but Goddard and Smith's conclusions concerning them are reported; and studies published since 1997 are highlighted. The majority of these studies have looked at variations in access to elective or planned surgery. However, studies that investigate variation in access to preventive and screening interventions, primary and community services, and maternity services have also been included⁶. Due to the diverse methodologies employed in these studies it is not possible in this short review to provide a critique or assessment of the validity of all the methods employed. We simply report the results of the studies. However, any broader generalizations of the results from single studies should pay heed to the methodology and data utilised.

3.2.1 *Cardiac Care*

Goddard and Smith's review of studies for access to cardiac care identified several studies that found area level variations in cardiac surgical interventions (28-30). Other studies found higher intervention rates in deprived areas, but the gradients were not sufficient to match the socio-economic differential in mortality (31). They concluded that "the weight of evidence relating to the treatment of coronary heart disease suggests that admissions, rates of investigation and revascularisation do not match the higher levels of need experienced by the most disadvantaged groups compared with more affluent groups" ((27):1157).

A more recent study using individual level data from patients reporting a history of angina or heart attack found similar variations in treatment according to socio-economic group (32). One study found that those in higher social classes were more likely to attend for health checks for cardiovascular disease (33). This finding is supported by studies on other types of preventive care (see below) and by an analysis of use of statins by people with coronary heart disease (CHD) according to age and

⁶ Studies were identified in Medline using a combination of keyword strings including: "socioeconomic factors", "analysis of variance", 'variation', "health services accessibility", 'inequalities', 'utilisation', 'access' 'equity' "delay seeking treatment". Related article searches were used where particularly relevant articles were found.

smoking status. This found that smokers are about half as likely to take statins than non smokers (34) . Given that smoking prevalence is strongly correlated with socio-economic group (SEG), this relationship may also create inequalities of access to secondary prevention according to SEG.

In our own review of the literature a number of studies published since 1997 support these findings. Several studies have found that diagnostic and surgical intervention rates do not match higher need in lower socio-economic groups (35-40). A study of the former Yorkshire Regional Health Authority between 1992 and 1994 found “affluent achievers” had coronary artery bypass grafts (CABG) and percutaneous transluminal coronary angioplasty (PTCA) rates 40% higher than the ‘have-nots’ in the 65-74 year age group, despite far higher mortality from CHD in the deprived group (37). For patients under 65 years old the deprived groups had higher CABG/PTCA rates, but not as many as expected given their mortality rate was twice as high. A study of Scotland between 1991-93 found socio-economic deprivation led to lower rates of angiography and CABG after acute myocardial infarction, with intervention rates roughly 30% lower in the lowest SEG than the highest. The results were repeated with PTCA but this was not statistically significant due to a low number of procedures (38). In addition, there are differentials in access with lower socio-economic groups less likely to be assessed as ‘urgent’ (41) or to attend rehabilitation after myocardial infarction (42, 43).

However, it should be noted that all these studies pre-date the introduction of the CHD National Service Framework (44). The investment in CHD services and emphasis on identifying and treating need based on clear clinical guidelines has certainly altered the quantum of CHD care available and may have altered its distribution. Further research would be valuable to confirm this.

3.2.2 Elective surgery

Goddard and Smith report the results of a study of six conditions amenable to surgery. Using data from the former North East Thames Regional Health Authority from 1991-93, the study examined the concordance between expressed need for possible surgical intervention (consulting a general practitioner) and subsequent surgical provision for the following conditions: inguinal hernia, gallstones, tonsillitis, varicose veins, cataract and osteoarthritis. It found that marked socio-economic

differences in consultation rates in primary care were not reflected in operation rates for all conditions. Across a number of conditions (hernia, gallstones and osteoarthritis), members of the most deprived population were the most likely to consult with a GP, but they were the least likely to receive surgery. For hip replacements, while lower social groups have a roughly 30% higher need, the operation rate was 20% lower when compared to the higher social groups (45). For cataracts and tonsillectomies there is an inverted U shape relationship between consultation rates with GPs and hospital treatment rates by socio-economic group.

Other studies on hernias and grommets also found lower rates of elective surgery among lower socio-economic groups in relation to need (45-47). Two studies on access to inpatient and day case oral operations between 1989-94 in the West Midlands found that patients using elective inpatient oral surgery were generally from higher socio-economic groups, while the opposite was true for emergency oral surgery. The most deprived communities used services for the removal of wisdom teeth 50% less than all other groups (48, 49).

3.2.3 Cancer

Cancer care presents many difficulties when assessing the impact of deprivation despite extensive documentation of poorer outcomes for lower socio-economic groups. Difficulties include the range of cancers and their aetiology, the impact of screening and the interpretation of case-mix adjustment. A number of factors appear relevant when considering inequalities in access to cancer care. Firstly, there is evidence that coverage of screening programmes is poorer for lower socio-economic groups (50); thus cancers may not be identified at an early (and treatable) stage. Poorer outcomes may wholly or partly be explained by late presentation with cancer (51, 52) or by inappropriate access (53) (emergency rather than elective admission), which may suggest difficulties in accessing care by lower socio-economic groups with cancer. There may also be differences in treatment and referrals (54, 55), although the relationship with outcomes is not clear. There is some evidence of poorer treatment of lower socio-economic groups (56, 57), but there is also evidence of equal treatment (51). However, in some cases, poorer outcomes among lower SEGs appear to persist irrespective of access issues (55, 58).

3.2.4 Preventive services

In assessing equity of utilisation of preventive services, it is appropriate to standardise for the risk of the relevant ill health that could be prevented. If the risks are evenly spread across the population, or are higher for poorer socio-economic groups, then less use by poorer groups indicates inequity.

The *Fourth National Study of Morbidity Statistics from General Practice, 1991-1992* (59) is a rich resource for studying patterns of utilisation, covering a 1% sample of the England and Wales population on GPs' lists – over 500,000 patients, for whom socio-economic data were available for 83% – and 1.37 million contacts with a doctor.

People from social classes IV and V aged 16-44 were found to have fewer consultations for preventive health care – 10% fewer compared with people from social classes I and II, after allowing for a range of other determinants, such as the patient's ward standardised mortality rate, distance from the practice, other supply variables, age and sex.

There are variations in the immunisation of children across socio-economic groups. Sharland et al studied patterns of immunisation coverage in London, across the 28 Health Authorities (HAs), and the correlations of these patterns with socio-economic circumstances (60). Multiple linear regression weighted by population size was used to identify independent predictors of variation in immunisation cover. The proportion of lone parent families in each HA was significantly associated with variation in immunisation coverage for third dose diphtheria and pertussis at 12 months, and with measles, mumps, and rubella (MMR) at 24 months.

More recently, Middleton and Baker studied MMR coverage in 60 district health authorities across England whose boundaries remained the same from 1991 to 2001 (61). Townsend deprivation index values were used to classify the HAs as 'affluent', 'deprived', or in-between. Mean coverage levels were about 2 percentage points higher in the affluent areas compared to the deprived areas. Similar reductions in coverage levels were found since 1997.

Baker and Middleton have also used the same 60 HAs to assess inequalities in cervical screening in England (62). Screening coverage was measured as the proportion of GPs who achieved the target of screening 80% or more of their eligible population (women aged 25-64 on the practice list). They found that screening

coverage was consistently higher in affluent areas from 1991 to 1999. In 1991 the inequality was wide, with the proportion of GPs meeting the target being more than twice as high in the affluent HAs as the deprived HAs – 84% compared with 39%. In 1999 inequalities remained, but the difference between affluent and deprived had halved – 99% compared with 76%.

Inequalities have also been found in uptake of breast cancer screening, although this disease is one of the few where women from higher socio-economic groups are at higher risk – although women from social classes IV and V may still face a higher risk than women from classes I and II⁷. Sutton et al in a London study found that women in rented accommodation were less likely to attend for screening (64).

Similarly, Banks et al, in a study of women in Oxfordshire and Wiltshire, found that while screening attenders were of similar age to non-attenders, attenders came from significantly less deprived areas (65).

A study around Edinburgh, which involved one of the present authors, was of interest in that a mobile mammography unit was taken to many different locations in an effort to overcome access barriers (66). The mobile unit provided open-access screening. Attendance rates at the unit across enumeration districts (EDs) were studied (EDs each contain around 100 households). It was found that measures of deprivation and distance affected uptake rates – e.g. a 10% increase in the ED full-time employment rate was associated with a 4.1% increase in uptake; a 10% increase in the ED rate of lack of a car was associated with a 2.1% decrease in uptake; and a 10% increase in distance was associated with a 2.4% decrease in uptake. So although taking the service nearer to the target populations reduced access barriers, this was insufficient to overcome socio-economic differences in uptake.

3.2.5 Chronic disease

Goddard and Smith did not specifically identify research on access to care for patients with chronic diseases. Research identified in this review suggests there are problems for the disadvantaged with late presentation to specialist care or presentation with

⁷ Harding et al give mortality rates by social class based on the ONS longitudinal study: women aged 35-64 in classes I and II had a rate 14% higher, class IIIN 6% higher, and classes IV and V 17% higher, than class IIIM, in 1986-92 (63).

more severe or advanced disease and higher drop out or non-compliance with management of the condition. For example, patients from lower socio-economic groups had poorer attendance at diabetes clinics and diabetes reviews. This may be due to poorer provision of services in deprived areas (67, 68).

Among patients with rheumatoid disease, deprived patients presented with more severe disease with differences increasing over the period of the study (69). However, the differences appear not to be explained by treatment variation and studies were inconclusive as to whether late presentation was the cause (69, 70).

3.2.6 Maternity care

Socio-economic inequalities in both outcomes and use of antenatal care are well recognised (71). Risk of maternal death among women from the most disadvantaged groups of society is up to 20 times greater than those women in the two highest social classes. Twenty per cent of the total number of women who died either booked after twenty weeks of pregnancy or missed four or more antenatal visits. This suggests that there is delayed access to antenatal care by lower SEGs. This is supported by research into the socio-demographic determinants of antenatal visits (72, 73).

In a survey of women in East London in 1994 women from higher SEGs (I-III) reported higher levels of continuity of care for antenatal, labour and postnatal community care. However, there was no social class difference in the importance attached to continuity (74), suggesting that differences in the perceptions of the need for care may not be a barrier to utilisation by lower social groups.

3.2.7 Other services

Mead et al investigated what factors affect patients' interest in the use of the internet as a health resource in primary care (75). With increasing use being made of NHS Direct Online and other online information sites as a source of health information for patients, it is important to understand the variations in access or propensity to access this medium. The study wanted to investigate whether an "inverse information law" exists whereby those with greatest health need are least able to access relevant resources. They found that internet access and reported use were lower among inner city patients, but among those respondents who had used the internet before there was no difference in the proportion that had obtained e-health information. Patients expressed similar levels of interest in using the Internet as a health resource between

the more affluent practice and the inner city practice. This suggests that if access to the Internet is facilitated there is no difference in the desire to seek information between SEGs.

Access to services by children and young people were analysed using data from the General Household Survey and the Health Survey of England (76, 77). The analyses looked at the utilisation of services as measured by consultations with a GP, outpatient attendances and inpatient stays over the previous year. There was no evidence of inequity by social class in either study. These studies utilise similar methods to the macro studies cited above, namely self reported (or parental reported) morbidity, a point to which we return in the next section. In contrast, a study of a general paediatric clinic in Leeds found non attendance rates were significantly higher in social classes IV and V than in social classes I-III (78). Nearly 50% of appointments were not kept in social class V compared to less than 20% in social class II despite no significant differences in the illness severity of children attending from those not attending.

3.3 Discussion

It is apparent that from the review of the previous studies in the last two sections that the picture overall is a confusing one. In particular, some of the most recent macro-studies seem to contradict the inequity findings of earlier macro studies, suggesting instead that the UK system is broadly equitable so far as utilisation with respect to need is concerned. But at least one recent macro study and the vast majority of the micro studies suggest the opposite: that more deprived individuals and families do use the health service less than their levels of need would indicate they should. How can these findings be reconciled? What is the truth, if truth there be, concerning equity and the NHS?

Some attempts have been made to reconcile the findings of the macro studies of the 1970s and early 1980s with the findings of the ones undertaken in the 1990s (3, 79). Possible explanations included sampling error, different methodologies, changes over time in the geographical distribution of health service resources, and the growth of the private sector. However the most plausible explanation concerned an increase in the proportion of individuals reporting illness over the period. Although, somewhat surprisingly, all groups showed such an increase, it was significantly larger among the

higher social groups. Thus the percentage of professionals reporting illness nearly doubled from 1972 to 1985, whereas that for employers and managers increased by well over a third. In contrast, the percentage for semi-skilled manual workers increased by under a third and that for unskilled manual workers by only one-ninth ((22): Table 6). Overall, it would appear that middle class health, in terms of self-reported morbidity, declined both absolutely and relative to working class health; but this was not matched by an increase in middle class utilisation of the NHS.

The fact that the increase in middle class morbidity was not accompanied by a corresponding increase in health service use casts some doubt on the reality of the morbidity increase. Also, other, more objective indicators of health, such as mortality rates, showed a significant fall over time, with middle class rates falling faster than working class ones (80). All of this suggests that there may be significant problems with the use of self-reported morbidity as an indicator of need, especially where middle class need is concerned.

The problems associated with the use of self-reported morbidity as an indicator of need may go some way to explain the more recent differences in study results and the differences between the macro and micro study results. For all the macro-studies used self-reported morbidity as their indicator, as did the two micro-studies of children services that indicated broad equity in utilisation; whereas the micro-studies that demonstrated inequity in utilisation generally used more objective indicators such as mortality rates of the area in which the individuals concerned lived, expressed need through consulting a GP, or direct clinical assessment. Moreover, the one recent macro-study that did show inequity in utilisation used a broader and deeper range of measures of self-reported morbidity than the other studies, including potentially more reliable ones such as those that were disease specific.

A second possible reason for the difference between the micro, and most of the macro studies, is that the latter when dealing with hospital treatment often only dealt with inpatient stays. The long-standing trend toward day case treatment of elective patients now means that two thirds of all elective admissions are accounted for by day cases and therefore excluded from these analyses. In addition, the removal of so many electives means that 75% of the remaining admissions to hospital are accounted for by non-electives. As a result these studies are essentially looking at utilisation that relates to emergency admissions, whereas many of the micro-studies are dealing with

elective or chronic treatments of various kinds. So what these macro studies cannot answer is whether equity of access for elective care has been achieved – where issues of communication, identification of need and referral become key.

The focus on emergency admissions also suggests another problem with the macro-studies. On *a priori* grounds we might expect that these emergency admissions will more closely reflect underlying medical need and indeed there is a well-documented link between emergency admissions and markers of socio-economic deprivation (indeed some evidence of overuse:(81)). This link covers both overall emergency admissions (82-84), emergency admissions by some specific client groups (85), and admissions for a range of specific conditions (53, 86).

However, some studies that compare emergency and elective access find that higher socio-economic groups have accessed care more frequently as elective, planned admissions, than lower socio-economic groups who have entered as emergencies (48, 87). Of course, emergency admissions may use more resources than elective admissions, not least because the patient is in poorer health; but this still begs the question of why the deprived are disproportionately using emergency access as a route into the health service.

This is a specific example of a general point that macro studies do not deal well with issues of appropriateness of care. Patients may present to clinicians at different stages of disease progression, they may have differing abilities to communicate their needs to these clinicians and clinician behaviour itself may lead to differing probabilities of diagnosis across social class. The timely diagnosis and initiation of treatment is important given that early intervention can contribute to better outcomes (and lower utilisation and cost) in a range of diseases. Hence, the observation that lower socio-economic groups appear successfully to access emergency care in relation to need does not deal with the question of whether the health service could have intervened before the onset of the ‘crisis’ leading to hospital admission. Across a disparate and wide range of conditions, studies suggest that lower socio-economic groups tend to present with more advanced and/or more severe disease (69, 88-93). What is less clear from these studies is whether a more responsive service could have encouraged these groups to access care earlier, or where they did attempt to, some failure in communication prevented earlier identification of their condition and initiation of treatment. We return to some of these issues later.

The implication of all this for the macro-studies is that their focus on the aggregate distribution of utilisation means that they may not be properly capturing the distribution of benefit from that utilisation. If poorer groups present later and tend to have more emergency admissions than better off ones, then they may show up as having more utilisation of the health service; but that utilisation would be less effective in terms of delivering health benefits than the earlier presentation by, and subsequent elective treatment for, better off groups with similar needs.

A similar measurement issue arises with GP consultations. Stirling et al studied consultation lengths with GPs, in 1075 consultations with 21 GPs from 9 practices in the west of Scotland (94). Duration was recorded for sets of individual consultations. Patients were classified into 7 categories of affluence or deprivation based on the post-code where they lived (using the Carstairs index). Average consultation length was 8.7 minutes, but for the 2 most affluent groups it was around 9½ to 10¼ minutes, while for the other 5 groups it was around 8 to 8½ minutes. Overall a 1-point increase in the deprivation scale was associated with a 3.4% decrease in consultation length.

If this result is generalisable to other parts of the UK, it again suggests that treating each unit of utilisation (in this case, each GP consultation) as though it conferred the same benefit regardless of social group is misleading. It may be that lower socio-economic groups are consulting GPs as much as higher ones relative to need, but receiving less benefit per consultation. So, again, an apparently equitable distribution of utilisation in fact reflects an inequitable distribution of benefit.

These kinds of problems may also afflict the micro-studies, but to a much lesser extent, as the benefits from a specific treatment or operation are likely to be more uniform once the need for the treatment has been clinically established. So, for instance a coronary artery bypass grafts (CABG) or percutaneous transluminal coronary angioplasty (PTCA) is likely to benefit equally individuals from different socio-economic groups but with the same clinical need⁸.

⁸ It may be that individuals from different socio-economic groups have different recovery rates following specific medical or surgical treatments. However, if this is a problem, it is likely to apply to most treatments associated with GP consultations or hospital inpatient days and hence apply as much to the macro as to the micro-studies. The problem discussed above

Overall, therefore, there seems to be a hierarchy of evidence in terms of quality with the micro-studies of utilisation at the top, the macro-studies with more disaggregated indices of need and utilisation next, and the remaining macro-studies at the bottom. Since the first two sets of studies provide strong evidence of the persistence of significant inequalities in utilisation, it seems reasonable to conclude that the NHS is indeed inequitable in key areas of health care provision.

4 SOURCES OF DISADVANTAGE

Goddard and Smith in their review comment on the importance for policy makers of understanding the reasons for the observed variations in access: “Even if needs-adjusted access to health care are inferred from a study, careful analysis may be required before a policy conclusion can be drawn. In this respect, *prima facie* evidence of variations in access to care can only be considered useful for policy purposes if it is presented in conjunction with the likely causes of such variations.”((27):1154)

In fact many of the papers we have reviewed include possible reasons to explain the variation in their discussion sections; but they do not address these sources of disadvantage as the central question, nor do they provide evidence to support such claims.

There are a wide range of factors that might present barriers to access. The most obvious is patient charges. Research has shown the differential effect of user charges on different socio-economic groups (95). However, the absence of widespread charges in the NHS (and exemption for low-income groups) means financial barriers cannot explain inequities in access. Furthermore, the reliance on (progressive) general taxation means that the NHS is equitable in terms of financing by international standards (96). Therefore this paper focuses on other possible barriers including ‘voice’ problems such as communication difficulties, language, literacy, assertiveness, articulation, self confidence and ability to deal with professionals, cultural and health

(that the unit of utilisation actually differs between groups) only applies to the former. It is worth noting also that even within micro studies it is often not straightforward to measure ‘need’, co-morbidities and other factors that may influence both the likelihood and success of elective treatment.

beliefs and behaviour, transport difficulties and travel distance, as well as the time and financial costs of travel, family or work commitments.

For the purposes of this study we are interested in those barriers to access and utilisation which operate differentially i.e. that are more significant for disadvantaged groups. In fact there have been relatively few studies that have systematically explored all the differential operation of these factors in any detail. We review such evidence as we have been able to find; but in many cases further research is needed to understand in more detail how these barriers to access operate in practice.

4.1 Distance and Transport

Distance to the nearest facility has been well established as a barrier to access for primary care (97) and secondary care (98). However, these kinds of study would only contribute to our understanding of the patterns of inequity revealed by our earlier discussion if it can be shown that lower socio-economic groups have further to travel to obtain high quality medical care, and/or face transport problems such that travelling the same or even shorter travel distances than the well off is more difficult for them.

First popularised by Julian Tudor Hart as “the inverse care law” (99), it is commonplace to observe that areas which are poorer and therefore have greater health needs are less well served by the health service than wealthier (and healthier) areas, but, as with many commonplace observations the supporting evidence is scarce. There are indeed a few studies that indicate poorer areas are less well served by health providers (100). However, a more recent study did not find much inequity in the distribution of GPs (101). This study concluded that “the coverage of services was widespread and, in such circumstances, there was no systematic evidence of poorer service availability for [*Primary Care Groups*] with higher population need (the “inverse care” law). Rather this relation was localised, being most predominant for PCGs covering London and its suburbs.” And another recent study found higher intervention rates among the socially deprived due to the proximity to inner city hospital facilities (29).

So distance alone is unlikely to act as a barrier to access for socially deprived groups. However, the lack of suitable transport may do. Often, car ownership has been used as a proxy for income due to lack of data generated by survey instruments and the

problems of self-reported current income. However, it has been shown that there is an independent association between car ownership and health status (102). One possible explanation is that non-ownership of a car (more prevalent among lower socio-economic groups) may affect access to health services and may lead to worse health outcomes. In a study of Oxford GP practice populations, Thorogood et al found that non-attendance for a health check was higher amongst patients who did not have access to a car (103).

Cragg et al studied the characteristics of attenders and non attenders of out of hours primary care services following calls to an out of hours telephone switchboard (104). The most common reason stated for not attending was not having a car available (40.3% of non-attenders). Few respondents mentioned distance to travel (<4%) or dependent relative (<4%). A study of non-attenders at a paediatric outpatients clinic in Leeds found a higher proportion of attending children had come by car (63%) compared with those non-attending (37%) who tended to use public transport or walked (78).

Currently patients who are on low incomes are entitled to free (non emergency) transport under the patients transport scheme⁹. According to 1999/2000 data there were 12.5 million patient journeys for non-emergency travel for which claims were made at a cost of £150m (or £12 per journey on average) (Department of Health personal communication). This includes elective patients, those with chronic care and non-emergency release from A&E. Thus for those on lowest incomes the direct costs of transportation should not act as a barrier to access to hospital (and with the extension of the scheme to cover ambulatory care). There will, however, be significant numbers still in the lower income groups who do not qualify for the scheme and may find direct costs a barrier to access. These issues are not explored in the studies identified.

In short, it seems likely that transport difficulties do play a role in determining inequalities in access - especially those associated with not owning a car. However, the extent of that role is unclear from the studies surveyed.

⁹ All emergency and ambulance transportation in England is free to the patient and averages at about £9 per journey.

4.2 Employment and Personal Commitments

Employment and personal commitments, such as caring responsibilities, are potentially important determinants of access to care. Field and Briggs (97) surveyed visits to GPs by patients with asthma and diabetes. There were differences in the ability of different social groups to get to their GP, with time constraints for employed people were reported as a hindrance by 32% of manual patients compared with 26% of non manual patients.

More specifically 33% of manual workers indicated that taking time off work hindered their access compared to only 13% of non-manual workers. This suggests that manual workers experience greater demands on their time and difficulty in taking time off work than non-manual. This is not surprising: lower income workers are often on short-term contracts and/or paid hourly rates. Thus any time off will usually result in financial penalties.

4.3 Voice

The view that the middle classes get more out of the health service because they are better at expressing their need and working the system is well known. In the terminology of Hirschman they are more adept at using their 'voice' to demand better and more extensive services (105). They are more articulate, more confident, and more persistent. Moreover, the medical practitioners who are taking the relevant treatment decisions are themselves from the middle class and hence are more likely to empathise with middle class patients. Hence the latter are well placed to ensure they get as much treatment as they want – which may or may not be as much as they need.

Much of the evidence for this phenomenon is indirect, and comes from the studies showing lower referral rates for secondary and tertiary care that were extensively reviewed in earlier sections of this paper. However, there are also some studies that have explored more directly the ways in which voice problems might emerge. For instance, higher socio-economic groups are more likely to have family or friends who work in the health services. Even if these contacts are not directly used to gain access to services they act as an important source of advice on how to work the system. Richards et al conducted in-depth qualitative research of patients who experienced chest pain, comparing a group of affluent patients with a group from a deprived area

of Glasgow (106). Ten out of thirty affluent patients were personally connected with the medical profession, compared to none of the patients from the deprived area.

A second factor is that, in dialogue with health care professionals, middle class patients may be better able to describe their symptoms and thus facilitate a diagnosis and access to appropriate treatment. Effective two-way communication relies on the skills of both the professional and patient¹⁰. Variation in access may result from doctors' lack of skills to communicate information to lower SEGs, or elicit from the patient all necessary information or interpret this information (109). Patients from lower SEGs may have lower levels of health literacy skills¹¹ which may prevent them from understanding and interpreting information or may have lower levels of self efficacy which means they are reluctant to take part in shared decision making.

In the Glaswegian study cited above, patients from the deprived areas felt they were given inadequate information whereas patients from affluent areas shared knowledge with the GPs (106). In a qualitative study of patients with angina from a poor inner city neighbourhood, some patients had misinterpreted symptoms (a myocardial infarction was labelled as indigestion), confused diagnoses (with other problems such as anxiety) or described symptoms vaguely thus making diagnosis and assessment of severity by the doctor more difficult (111). There appears to be conflicting evidence of the desire of lower class women for information concerning their maternity care and whether this demand is satisfied (74).

More direct evidence of the exact mechanisms through which voice operates would be desirable. However, when such evidence as does exist is taken together with the indirect but well established evidence showing marked differences in referral rates and other treatments relative to need, it is likely that differences in the ability of social groups to express their voice is a major factor affecting differential access.

¹⁰ There is an extensive literature on shared decision making and patient-doctor communication which examines these issues (see for example recent special issues on these themes (107,108))

¹¹ Health literacy is defined as "the degree to which people have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions" (110)

4.4 Health Beliefs and Health Seeking Behaviour

Differences in health beliefs and in health seeking behaviour between socio-economic groups might also explain differences in access to care. These factors could be seen as 'acceptable' reasons for variation if they reflect personal preferences. However, analysis suggests that there are systematic differences in the health beliefs and consequent health seeking behaviour of lower socio-economic groups compared with higher ones, differences that may not be justified by more objective analyses.

A study of patients' interpretation of factors when reporting their family history of heart disease found that the deaths of working class men and women were more likely to be attributed to old age at younger ages than was the case for middle class men and women (112). Some respondents were unsure about their own risk of heart disease either due to incomplete knowledge about illness and death in the family or their assessment of personal risk compared to family risk. In particular, working class men seemed the most uncertain about whether they had a family history, possibly due to the fact that social inequalities in mortality mean that premature deaths are more common in their social networks. Given the importance of family histories in identifying at risk patients, social differences in the lay constructions of family histories may result in differential access.

As shown in the review of the micro-studies of utilisation above there are significant differences in the revascularisation rates between SEGs. Qualitative studies are able to explore some of the reasons that might explain these differences. In a qualitative study of patients suffering with angina in South Yorkshire it was found that patients from the deprived area delayed seeking care, were in denial despite symptoms, or chose to self manage the symptoms. Thus the full extent of symptoms remained hidden from GPs, resulting in a delayed or missed referral (113).

A qualitative study of patients with angina in the poor area of Toxteth, Liverpool identified similar factors preventing patients being referred for possible revascularisation (111). Patients tended to self manage the pain because they had a fear of hospitals, operations and medical tests which they did not reveal to their doctors (often based on lay perceptions of the experience of relatives who had died in hospital) or believed angina to be a chronic problem and were not aware of the treatment possibilities. These patients (and their relatives) had a fatalistic view of their

health and life expectancy with patients in their mid 50s perceiving themselves as old and therefore unworthy of treatment.

In the Glasgow study discussed above, respondents from the deprived area had normalised their chest pain and were unable to distinguish chest pain from symptoms of other physical conditions. In addition those respondents with co-morbidities were concerned that they were overusing medical services (106). Furthermore, respondents from the deprived area were more likely to report negative experiences of health care and had lower expectations of health services.

In contrast, a recent study considered attitudes towards hypothetical needs, by presenting patients with vignettes of potential circumstances where they might seek healthcare (114). The vignettes described experiencing chest pain and finding a lump in the armpit. People from the lowest socio-economic group were more likely than those in the highest group to report that they would immediately seek health care in response to the chest pain and finding the lump. This suggests that perceptions of need for care once illness was established may not be a barrier to achieving equity.

It is worth noting that the results of all these studies lend support to the doubts expressed above concerning the usefulness of self-reported morbidity as an indicator of need, especially when assessing differences in need between higher and lower social groups. If lower groups systematically underestimate their health state or the likelihood that they will benefit from health care, then they are likely to have unmet needs that are not picked up by studies that use self-reported morbidity as a needs indicator, but that would be found by more sophisticated instruments.

4.5 Conclusion

It appears that there is a complex interaction of factors that influence whether or not a person accesses the health services appropriately. The extent to which these operate differentially and cause the variations in utilisation observed in micro-studies cannot be conclusively determined from the available evidence. The interplay between factors in each case renders all but detailed qualitative research immaterial and makes general conclusions difficult. However, the evidence presented here does suggest that longer travel time, greater travel cost and lower car ownership (though not distance) appear to contribute to differential access to health services by SEGs, adjusted for

need. The time trade offs of attending for health care that different SEGs have to make may also explain some of the differences in utilisation. The confidence and ability to articulate among the middle classes – their voice – and their ability to express it - and their networks - are clearly key factors affecting their ability to communicate with GPs and to promote referral onwards to secondary and tertiary care. Finally, the interaction of health beliefs and health literacy skills are likely to be important in affecting the failure of the service to meet the needs of lower SEG patients.

In fact, we can distinguish between two types of disadvantage that lower socio-economic groups experience when using the health service: those that relate to the problems of making first contact with the service, and those that concern the problems they experience once contact has been established. Thus, relative to the better off, when ill, the poor either tend not to go to the doctor at all, or to present at a later stage in their illness; they often go to accident and emergency departments instead of GP surgeries; and when well, they do not access prevention services, or at least not as much as the better off do. If they do establish contact, they then experience another set of difficulties, which manifest themselves in lower rates of referral to secondary and tertiary care, lower rates of intervention relative to need, and lower and irregular attendance at chronic disease management clinics.

Many of the factors that we have discussed as causes of disadvantage affect both of these types of disadvantage. Thus longer travel time, greater travel cost and lower car ownership will affect both the poor's ability to access the service in the first instance, and their ability to attend for subsequent treatment. Others are more relevant to one of the two types. So health beliefs and behaviour are more likely to affect first contact (although to some extent they may affect willingness to continue with treatment once begun), while voice difficulties are more likely to impact at the second stage. Policy-makers trying to reduce the extent of disadvantage will need to bear these distinctions in mind.

All these conclusions need to be set alongside the progress the NHS has already made in dealing with aspects of inequality in care. A renewed focus on inequalities in health outcomes (80) has also led the Government to set itself challenging targets in terms of reducing health inequality and this is now one of the key delivery targets for the NHS and the Department of Health in England (115).

In particular, over recent decades the NHS has made great strides in dealing with geographical inequalities of access that arise from the unequal distribution of resources. The Resource Allocation Working Party (RAWP) formula that was introduced in 1976, and its successors have attempted with some success to distribute NHS resources in line with underlying need; and this remains the fundamental approach to the allocation of expenditure between Primary Care Trusts (PCTs). Policies to encourage the location of GP practices in poorly served areas and the opening of walk in centres in inner city locations have also contributed to the reduction of supply side barriers to access.

So policies are already in place to help tackle the barriers connected with travel time and transport. The challenge now for government is to find ways of addressing the remaining barriers to access: those connected with differences between social groups in respect of strength of ‘voice’ and in their health beliefs and health seeking behaviour. Several aspects of the current choice agenda have the potential to address these. Already in the London Choice Pilot, patients have been supported to exercise choice to move to another provider for quicker treatment including treatment in the private sector (116). Choice is being offered as a matter of course to all (clinically eligible) patients and is supported with information and a patient care adviser. Preliminary analysis of data by PCT suggests there is no relationship between the deprivation index of the PCT and the uptake of choice, suggesting that those who live in poor areas are as interested in the opportunities offered by increased choice as those who live in richer ones. Empowering all patients to make informed choices about their care (together with clinicians) could equalise the advantage that middle class patients currently exercise through their use of voice and connections. Higher quality and more tailored information delivered to patients at the time they need it could address the “inverse information law”. Together with the right to exit (choice to move to another provider), this should improve the responsiveness of services and tackle negative perceptions of the NHS. A better understanding of the remaining barriers to access is a first step in developing policies to counter rather than exacerbate inequalities.

5 SUMMARY

- The evidence from ‘aggregate’ studies, which compare NHS utilisation with self-reported morbidity by socio-economic groups is not clear-cut, with some recent studies reporting no significant differences between the groups in numbers of GP and outpatient consultations and in inpatient treatment. However, a recent study that employed a much wider range of morbidity indices and included day case treatment among its indicators of utilisation found unemployed individuals and individuals with low income and educational qualifications to be using services less relative to need than their employed, more affluent or better educated counterparts.
- There is strong evidence that lower socio-economic groups use services less in relation to need than higher ones from many studies of specific NHS services. These include cardiac, diagnostic and surgical care, elective procedures for hernia, gallstones, tonsillitis, hip replacements, and grommets, inpatient oral surgery, immunisation for diphtheria, pertussis, measles, mumps and rubella, and diabetes clinics and diabetes reviews. Lower groups may also receive less time per GP consultation. For instance:
 - “Affluent achievers” had 40% higher CABG and angioplasty rates than the ‘have-nots’, despite far higher mortality from CHD in the deprived group.
 - Intervention rates of CABG or angiography following heart attack were 30% lower in lowest SEG than the highest.
 - Hip replacements were 20% lower among lower SEGs despite roughly 30% higher need.
 - Social classes IV and V had 10% fewer preventive consultations than social classes I and II after standardising for other determinants.
 - A one-point move down a seven-point deprivation scale resulted in GPs spending 3.4% less time with time with the individual concerned.

The reasons for this inequity include lack of suitable transport and restrictions on available time limiting access to services; superior ‘voice’ connections and communications by middle class patients influencing treatment once the service is accessed; and differences in beliefs about severity of illness and the need to seek

medical attention. Each of these may affect in different ways the difficulties that lower socio-economic groups experience in making first contact with the service, and/or the difficulties they encounter when they receive subsequent treatment. Policies are in place to help tackle some of transport and time difficulties (across all of UK or just England); the challenge for government now is to devise policies that address the barriers to access arising from differences in voice and in health beliefs.

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