The 1991 Census Health Question

King's Fund Institute

DRAFT

The 1991 Census Health Question

Michaela Benzeval
Senior Research Officer

Ken Judge
Director

King's Fund Institute
Discussion Paper no. 4

1993

INTRODUCTION

Health planning in the 1990s is due for a radical overhaul. The split between purchasing and providing in the new NHS, and the radical re-distribution of resources implied by the introduction of weighted capitation, require the development of new approaches to assessing the health care needs of local communities. Crucial to the emergence of a new generation of needs indicators will be the exploitation of data from the 1991 Census. For the first time since the beginning of the twentieth century, the 1991 Census contained a health question. It remains to be seen exactly how the new data will be used for health and social care planning and resource allocation purposes, but there can be no doubt that they will play a central role.

The main purpose of this paper is to examine the assumptions behind the health question chosen for inclusion in the 1991 Census. The paper begins by examining the reasons for including a health question, how its wording was formulated and comparing it with the General Household Survey (GHS) Question on which it was based. It then uses a household survey conducted in 1991 to test the assumption on which the question was based.

BACKGROUND TO THE CENSUS

Crude population and age structure information from the Census has long been used by central government, health and local authorities for resource allocation and planning purposes. However, such data can only provide a very approximate and indirect guide to the need for health care in an area. Hence many academics and government departments have searched for more direct measures of health need such as morbidity or disability. To date these have not been available on any systematic basis at a small area level for the United Kingdom. This has led to the use of proxies such as mortality being

included in resource allocation mechanisms. It is widely recognised, however, that this approach is problematic and hence the opportunity was taken to include a health question in the 1991 Census.

Some important assumptions were made in planning the contents of the 1991 Census. As far as the health question is concerned, considerable reliance was placed on analyses from the GHS which had shown that self-reported measures of health status were correlated with the utilisation of health services. The basic thinking was that, in certain circumstances, utilisation served as a good proxy for health care need. The logic went further and it was believed that relative needs could be identified by collecting data about a measure of health status which was demonstrably a good predictor of utilisation. The key issue which had to be resolved was which question/s about health status should be included in the Census.

Once a firm decision had been reached in principle, the Office of Population Censuses and Surveys (OPCS) included three different health questions in the 1987 Census wording test; a detailed question on disability, and two questions on limiting long-term illness and acute illness.

> *The main argument for including the questions on illness was the correlation which had been shown ... to exist between reported illness and level of use of general practitioner, hospital out-patient and hospital in-patient services.*
> (Pearce and Thomas, 1990)

The results led OPCS to conclude that the question relating to limiting long-term illness 'should yield reliable data to use as a measure of the need for health and social services at both the national and local levels' (OPCS, 1989). In contrast, the more detailed disability question proved to be unsatisfactory because it failed to identify many people who were subsequently found to have disabilities.

The results from the 1987 wording test for the short-term illness question have not been published, but it was reported that it 'worked less well ... and added little as a predictor of health service usage' (Pearce and Thomas, 1990). A decision was made, therefore, not to include a question on acute illness. Instead, it was decided to rely on a single question about limiting long-term illness. Whitehead (1988) reported that this was thought to be both the best predictor of hospitalisation contained within the General Household Survey (GHS) and to be systematically related to more sophisticated measures of disability.

Comparing the Census Question with that in GHS

It is important to note that the choice of question was based on experience from the GHS which is conducted on an annual basis by the OPCS. The GHS is the main national source of self-reported morbidity data in Great Britain and the decision about which, if any, health question to use in the Census was therefore based on a careful investigation of the experience with it. However, the question about limiting long-term illness which was included in the Census differs from the approach adopted in the GHS. First, the GHS question is divided into two. Individuals are only asked about limitations to their activities if they first report a 'long-term' illness. Second, the Census asks about 'health problems or handicap', while GHS asks about 'disability or infirmity'. Finally, the Census question instructed respondents to 'include problems which are due to old age'. The Census question asked:

> *Do you have any long-term illness, health problems or handicap which limits your daily activities or the work you can do? (Include problems which are due to old age).*

Whereas, the GHS question on which it was based is usually worded as follows:

(a) *Do you have any long-standing illness, disability or infirmity? By long-standing, I mean anything that has troubled you over a period of time or that is likely to affect you over a period of time.*

(b) *If yes, does this illness or disability limit your activities in any way?*

It is difficult to judge whether there could be systematic response differences as a result of the reduction from two to one questions or because of the different interpretation of 'health problems or handicap' as opposed to 'disability or infirmity'. However, perhaps the most important difference is the inclusion in the Census question of the instruction to 'include problems which are due to old age'. This change was made as a result of comparisons of implied prevalence rates between the OPCS Disability Survey, which carried out a very detailed survey of individuals' disabilities and limitations, and GHS. Martin *et al.* (1988) reported that:

> *What is surprising is the lower prevalence estimates for age 75 onwards obtained by the GHS compared with this survey ... many elderly people do not think of themselves as having health problems or being disabled; they consider limitations in activities a normal consequence of old age.*

Foster *et al.* (1990) further suggest that 'elderly people are particularly likely to under-report eye and ear complaints, perhaps because they feel that difficulties with sight and hearing are an inevitable part of the ageing process'.

Given this perception - combined with the growing numbers of elderly people, and their high consumption of health and social services - it was decided to add a specific reference to problems associated with old age to the Census question about limiting long-term illness. The practical significance is that the modified form of question should produce higher prevalence rates amongst

the elderly than those which have been associated with the GHS, as found in the OPCS Disability Survey.

Overview

It is important to draw out the three key assumptions implied by the decision to include the limiting long-term illness question in the 1991 Census. First, that reported illness is highly correlated with the utilisation of GP, out-patient and in-patient services. Second, that limiting long-term illness is a better predictor of health service use than recent acute illness. Third, that adjusting the GHS question to 'include problems which are due to old age' would improve the prevalence estimates of morbidity in the community. The purpose of this paper is to evaluate these last two assumptions.

AIMS

Given the significance of the Census for health planning, it seems important to gain some early insights into a number of questions which arise in relation to the data which have been collected. These include:

* what are the likely estimates of prevalence to emerge from the Census?

* what are the consequences of the decision to include a reference to age in the Census health question?

* what is the nature of the relationship between some common measures of health status and the utilisation of health services? It also critically investigates the validity of the reasons given for excluding a question about acute sickness from the Census.

To investigate these and related questions, the King's Fund Institute purchased a module of questions - including the one in the Census about health - in the OPCS Omnibus Survey in three separate months in 1991. Data about a range of health indicators, health care utilisation, as well as socio-economic and demographic variables were collected from a nationally-representative sample of 6,415 adult respondents.

The data reported in this paper were collected by OPCS as part of its monthly Omnibus Survey.

OPCS Omnibus Survey

The OPCS Omnibus Survey is a relatively new survey service for government departments and public bodies. It aims to provide a fast, effective and reliable way of obtaining information about the characteristics, behaviour and attitudes of the general population or of particular groups of people. The survey is conducted monthly for approximately 2,000 adults, and in April, August and November 1991 the achieved sample totalled 6,415, a response rate of 81.8 per cent. Fieldwork takes place over a two week period and the results are made available to clients in the form of a report and computer file about one month later.

The Omnibus Survey is based on a random sample of the general British population (OPCS, 1991). The sample addresses for the OPCS Omnibus Survey come from the Postcode Address File, an up-to-date sampling frame containing the addresses of all private households in Great Britain. Each month a random sample of 100 sampling areas (postcode sectors) in England, Wales and Scotland (excluding the Highlands and Islands) is selected, stratified to ensure that all regions are included and that, within each region, the basic tenure and

occupation types are correctly represented.

In each area, 30 addresses are selected at random for visit by interviewers. About 12 per cent of the addresses visited each month will not be eligible for the survey in that they will not contain a private household using this as their main address. At the remaining addresses the interviewers establish what households live at the address, and, if there is more than one, randomly select one household for the survey. They then list all adult members of that household in age order and select one of them, at random, as the informant.

No substitutes are taken, either for addresses or households or informants. Interviewing is carried out face-to-face with the designated informant. No proxy interviewing takes place, because of the large opinion component in Omnibus questions, although questions may be asked about other people in the household.

Since only one household member is interviewed, people in households containing few adults have a better chance of selection than those in households with many. Responses are weighted to correct for this unequal probability of selection. First, responses are weighted by the number of adults in the household, to correct the proportions, and then adjusted to give a total sample size equal to the number of informants actually interviewed.

Each month a set of basic classificatory data are collected in addition to any questions requested by clients. These data cover the characteristics of the individual respondent and their household circumstances as set out below.

* Region
* Age
* Gender
* Marital Status
* Economic Status

* Social Class
* Housing Tenure
* Household Composition
* Income
* Car Ownership

Table 1 shows some of the basic characteristics of respondents to the Omnibus Survey in April, August and November 1991 in comparison to the 1990 GHS (Smyth and Browne, 1992). The respondents to the two surveys appear to have a very similar, age, gender, ethnic and regional structure. However, the Omnibus Survey has a lower proportion of respondents than GHS from local authority housing and a higher proportion from owner occupied houses.

[INSERT TABLE 1]

In April, August and November 1991, the King's Fund Institute requested the insertion of six additional questions into the Omnibus Survey. The most important of these is the Census question on limiting long-term illness. We also asked two further questions relating to health status - subjective assessment of health and recent acute illness; and three utilisation questions - for accident & emergency and out-patient attendance, in-patient stays and general practitioner consultations. All of the questions, except that about GP consultations, were identical to those asked in GHS. On the advice of OPCS, the GP consultation question had to be modified slightly to simplify it from a series of questions in GHS to a single question in the Omnibus Survey. Table 2 compares some of the results from the 1991 Omnibus Survey with similar questions asked in the 1990 GHS (Smyth and Browne, 1992).

[INSERT TABLE 2]

Limitation of the data

This paper compares the prevalence rates of responses to the Census question in the Omnibus survey with the original question from GHS and investigates the relationship between the Census health question and utilisation. Although the question included in the Omnibus Survey is identical to that on the 1991 Census form, the responses might be different. All respondents in the Omnibus Survey are asked about their own health status *only* by a trained interviewer. In contrast, responses to the health question in the 1991 Census will in most cases have been determined by a single person on behalf of all other members of the household. It is not known what impact this difference might have on reported prevalence rates. Nevertheless, despite the different ways in which data were collected, the information about the Census health question obtained from the Omnibus Survey provides an opportunity to investigate its relationship with measures of the utilisation of health services.

METHODS

The first part of this paper compares age specific prevalence rates obtained from the Census health question in the Omnibus Survey with those obtained from the original question in GHS and a more detailed investigation of disability from the National Disability Survey.

The second part of this paper examines the validity of the belief that the measure of limiting long-term illness included in the Census is a better predictor of health service use than other conventional measures of health status. We investigated the relationships between the Census health question, an overall subjective health assessment and a measure of acute limiting illness with the utilisation of hospital in-patient, out-patient and general practitioner services. The statistical technique employed to do this is

logistic regression. This is the most appropriate method when the dependent variable is dichotomous, ie takes the value 0 or 1 (Hosmer and Lemeshow, 1989). It estimates the probability of an individual using health services based on the health status variables included in the model. This is expressed algebraically as:

$$\text{Probability of } (y=1) = \frac{e^{(BX)}}{1+e^{(BX)}}$$

where y is the dependent variable, e is the natural log and BX is the linear combination of coefficients and explanatory variables.

RESULTS

The purpose of this paper is to examine the critical assumptions associated with the planning of the Census using data from the OPCS Omnibus Survey. First, that a modification of the standard GHS question about limiting long-term illness - to encourage elderly people to report 'problems which are due to old age' - would produce more appropriate estimates of total prevalence for the whole population. We report results obtained from the Omnibus Survey and compare them with similar findings for the GHS and the OPCS Disability Survey. Second, that the selected form of the health question is a good predictor of the utilisation of health services. We examine how well the Census health question predicts the utilisation of health services in comparison with other common measures of health status using data from the OPCS Omnibus Survey.

Modifying the GHS question

Figure 1 shows the proportion of respondents, in different age and sex groups, reporting limiting long-term illness. As would be expected, for both men and women, the proportion of respondents reporting ill-health increases steadily with age.

[INSERT FIGURE 1]

The main differences to note are that middle-aged women appear less likely and very elderly women more likely than men in similar age groups to report limiting long-term illness. Table 3 compares these estimates with similar ones from the 1990 GHS. The additional instruction to respondents to 'include problems associated with old age' would appear to have been successful. Higher proportions of both men and women over 75 in the Omnibus Survey reported having a limiting long-term illness. However, the proportions of people under 65 reporting ill-health are lower than expected, particularly for women. The revised form of the question, therefore, seems to have discouraged younger people reporting limiting long-term illness. It is difficult to know for certain why this may have occurred; young and middle-aged people may have been put off responding positively to the Census question because of the reference to 'problems associated with old age' or as a result of the change in wording from 'disability or infirmity' to 'health problems or handicap'.

[INSERT TABLE 3]

Overall, more than 20 per cent fewer respondents report themselves as having a limiting long-term illness in the Omnibus Survey in 1991 than in the GHS in 1990. In part this may reflect genuine variations in the health status of the two samples, but it is unlikely that this fully explains the differences.

Table 4 contrasts the responses in the two samples about three health status questions. In each case the Omnibus Survey sample produces lower prevalence rates. But the final column of the table, which shows the ratios of the two sets of responses, indicates that the difference between the samples is twice as great for limiting long-term illness as for subjective health and acute sickness. It seems reasonable to conclude, therefore, that the modifications of the GHS formulation of the questions about limiting long-term illness for the 1991 Census would *ceteris paribus* reduce the total level of prevalence of the population as a whole.

[INSERT TABLE 4]

The significance of these differences in prevalence rates between GHS and the Omnibus Survey can be investigated in more detail by reference to the OPCS Disability Survey. This provides much more detailed information about the presence and severity of disability in the British population. Figure 2 compares the prevalence rates of limiting disability found in the Disability Survey, the 1985 GHS and the Omnibus Survey. The age distribution of limiting long-term illness in the Omnibus survey appears to reflect that found by the more detailed Disability Survey better than the GHS. However, the overall proportion of people in private households reporting limiting disability is much lower in the OPCS Disability Survey - 135 per 1,000 - than the GHS (1985) - 208 per 1,000 - or the Omnibus - 191 per 1,000. This is not altogether surprising given the much more specific questions about limitations which the Disability Survey used in its definition (Martin *et al.*, 1988).

[INSERT FIGURE 2]

Limiting long-term illness and utilisation

The results of our analyses directly contradict the reported assumptions made in planning the Census (Pearce and Thomas, 1990). Far from being the best indicator of utilisation, the Census health question is poorer than either of the other two health status indicators. Also, it can be shown that limiting long-term illness is a much better predictor of both hospital and general practitioner utilisation in combination with the indicator of acute limiting illness - which was specifically excluded from the Census.

Table 5 shows the proportion of respondents with and without health problems who reported using health care services. As expected, for each of the health care measures, those who reported poor health were more likely to use each of the three services, than those who were in good health. This supports the findings of a similar analysis of GHS data that 'self-reported morbidity was a good predictor of health service use' (Haynes, 1991). It is interesting to note that of all three health measures, limiting long-term illness would appear to be the poorest discriminator. The difference in the proportion of people in poor health reporting utilisation against those in good health is greater for both acute illness and subjective health assessment than for the Census health question. For hospital utilisation, subjective health assessments would appear the best discriminators whereas for general practitioner consultations, acute illness is best. Over one half of those with an acute illness had seen their family doctor against one third of those with limiting long-term illness.

[INSERT TABLE 5]

To investigate these findings further, we have employed logistic regression analysis to explore the association between the different measures of health

status and the utilisation of hospital services.

Tables 6, 7 and 8 show the probability of utilising the three different types of health services associated with different health states of the respondents in the sample obtained by the Omnibus Survey. The columns are associated with three different measures of health status; limiting long-term illness, subjective health and acute limiting illness. Each of the rows shows the probability of the event in question occurring if (a) one aspect only of poor health is assumed, or (b) if this is combined - in the case of limiting long-term illness and subjective health - with additional information about limiting acute illness. The same broad message comes through in each table. Limiting long-term illness is not as good at predicting utilisation as either of the other two health status measures. In each case, the best predictions are obtained by combining subjective health assessments with recent illness. We can illustrate this by reference to in-patient care.

[INSERT TABLES 6, 7, 8]

For example, the first row of Table 6 shows that the predicted probability of someone having been an in-patient during the previous 12 months is 0.20 for someone reporting a limiting long-term illness compared with 0.23 for someone with limiting acute illness and 0.32 for someone who has assessed themselves as having 'not good health'. In the case of someone with a limiting long-term illness, the probability of having been an in-patient increases to 0.30 when short-term illness is assumed as well. However, the Census health question - either on its own or in conjunction with acute illness - performs less well than the measure of subjective health. The same is true for both the other measures of utilisation as shown in Tables 7 and 8, although recent acute illness is the best single predictor of GP consultation.

The probabilities reported in Tables 6, 7 and 8 are not in themselves conclusive proof that one model is statistically better than another. For instance, we have not calculated confidence intervals for the probability estimates. Nevertheless, the practical implications of this modelling exercise are of considerable significance. Far from being the best predictor of hospital utilisation, the Census health question appears to be poorer than either of the other two measures of health status which are common to the annual GHS. In addition, the best prediction seems to be obtained when either limiting long-term illness or subjective health is combined with acute illness. This last point calls into serious question the decision to exclude the short-term illness question from the Census on the grounds that it 'added little as a predictor of health service usage' (Pearce and Thomas, 1990).

DISCUSSION

Modifying the form of question about limiting long-term illness which was included in the 1991 Census may have reduced the overall prevalence from that found in GHS and changed the age-specific rates. The evidence from the Omnibus Survey suggests that changing the standard GHS question to include a specific reference to 'problems which are due to old age' might well increase reported prevalence rates amongst the elderly and reduce them amongst younger people. In this respect, the pattern by age reflects the more detailed estimates found in the OPCS Disability Survey. The 1991 Census question may, therefore, provide prevalence estimates which more closely reflect detailed estimates of disability than the original GHS question would have achieved. The significance of this is difficult to assess since we do not know which survey is closer to measuring the 'true' prevalence of limiting disability in Britain. Perhaps more importantly we do not know which survey measures the need for health and social care services more accurately.

These difficulties serve to highlight one of the alleged weaknesses of a reliance on subjective assessments of health for the purposes of health planning; that they commonly yield inconsistent responses. Factors such as variations in attitudes and expectations mean that:

> *people vary in the extent to which they are "troubled" by a certain kind of symptom and ... in the extent to which they ... see themselves as ill* (Foster *et al.*, 1990).

There are similar variations in the extent to which people perceive that their self-reported morbidity limits their activities:

> *some people may adapt so well to a long-term illness or disability ... that they no longer consider it a limitation while others may never be able to make this adjustment* (Foster *et al.*, 1990).

However, a reliance on subjective health assessments should not necessarily be considered a disadvantage. Surveys have shown a consistent association between consultation rates and self-perceived health (Blaxter, 1985). Moreover, there is a growing recognition that self-reported assessments

> *may be as reliable as ... many of the clinical, biochemical, or physiologic indexes on which doctors have traditionally relied* (Epstein, 1990).

Whatever the relative merits of different indicators of health status, however, there is no reason to believe that any biases resulting from the subjective rather than objective measurement of health will vary between geographic areas (OPCS, 1989). The underlying rationale for reliance on a question about limiting long-term illness in the Census, therefore, is that it should provide *better information on relative need* (Whitehead, 1988).

This belief that the Census health question is a good indicator of relative need is an important one. It is related to the fact that the Census planners

and sponsors also assumed that the question about limiting long-term illness included in the Census was the best available predictor of health care utilisation and that adding a reference to acute illness would not improve the quality of the estimates. The results reported in this paper call into question both of these beliefs. Confining the analysis to the three measures of health status usually included in the GHS, limiting long-term illness is statistically the weakest when used on its own. It is a much more powerful predictor when combined with acute illness.

A number of questions arise which merit further discussion. Can evidence about health care utilisation be used legitimately as a proxy for need? Is a retrospective investigation of the relationship between health status and utilisation valid? Should the 1991 Census have included a question about acute as well as long-term limiting illness? Each of these questions will be considered in turn.

Use and Need

One of the most important implicit assumptions made by the Census planners is that utilisation is a good proxy for the need for health care. But as utilisation is determined by the interaction of the demand for and supply of health care the relationship with the need for health care is extremely complex. For example:

> *it is an almost axiomatic belief in health care that the supply of services is a major determinant of the demand for them*
> (Noone *et al.*, 1989).

Numerous studies from a number of different countries have found that the availability of resources such as beds and specialists has a significant impact on the use of hospital services at an area level (van Vliet, 1988).

Morgan *et al.* (1987) summarise the views of many commentators when they assert that:

> *hospital utilisation data are flawed as an indicator of need for health care, since hospital use is as much a product of the supply of services and professional uncertainty as any notion of population need.*

However, most studies which have found a positive relationship between measures of supply and utilisation have been conducted at an aggregate level. Such data may show relationships which do not exist at an individual level, for artifactual reasons or because associations are masked by the aggregation process. This is known as the ecological fallacy. There are two main causes of bias - aggregation and specification (van Doorslaer and van Vliet, 1989). Aggregation bias occurs because of the reduction in variation between individuals within regions in area level studies. Specification bias occurs when important variables are omitted from aggregated models because of their lack of availability at area level. The most important example of this in the current application is health status.

To overcome these problems, a number of international studies have modelled the relationships between health care utilisation and both health status and supply factors at an individual level. Pauly (1980) analysed the USA Health Interview Survey of 1970 and found that a variety of measures of hospital utilisation were not consistently associated with the availability of beds or doctors.

> *These results...do suggest, however, that the primary determinant of use is the health status of individuals, not the availability of beds or physicians* (Pauly, 1980).

This finding contradicts Fuchs (1978) who analysed the same data at an aggregate level and found a significant relationship between the number of

surgeons and the rate of surgery. Pauly suggests the reason for making false inferences from this analysis is the failure 'to account adequately for the health status of the patient'.

van Doorslaer and van Vliet (1989) investigated the relationship between area and individual analyses further by using insurance data for 230,000 Dutch individuals. They found that health status was a very important predictor of hospitalisation and length of stay. When included in both area and individual level analyses, it dramatically increased the goodness of fit and reduced the significance of the supply factors.

We are less than fully confident that data about the utilisation of or demand for health care are adequate indicators of need. Nevertheless, we do take the view shared by others that the analysis of patterns of utilisation does have a useful contribution to make to informing thinking about the relative needs of different areas. In this context, we believe it is particularly important to examine utilisation at the individual level. It is true, of course, that an investigation of utilisation 'assumes that the current pattern of services is optimal in that it minimises unmet need and provides effective therapy' (Mays, 1987). But for health planning purposes this might not be relevant unless it can be shown that the ratio of unmet need and inappropriate care to actual utilisation varies systematically between different areas. Perhaps the key point to make is that the perfect data set does not exist and a range of second-best sources of information will have to be used to make assessments of need.

Postdiction

Even if data about utilisation is thought to inform judgements about needs, there is another issue to contend with. In a seminal contribution, Manning *et*

al. (1982) examined 'the consequences of using measures of current health to explain past utilisation behaviour?' They correctly point out that most empirical studies of the demand for health care

> *have asked individuals about their current health and their past utilisation of health services ... health status measures at the time of the interview are then used to explain past utilisation ... (however) the observed health status variables do not really predict utilisation; they 'postdict' it* (Manning et *al.*, 1982).

Moreover, even health status variables which 'nominally refer to the same period as utilisation (eg disability days in the past year) leave causality ambiguous: Did one suffer from restricted activity and therefore seek care, or did the physician advise taking it easy?' (Manning *et al.*, 1982).

These problems, which tend to exaggerate the causal significance of health status measures, are clearly relevant to the analysis presented in this paper. Unfortunately, without longitudinal data sets, there is little researchers can do to overcome them. However, it is important to be aware of the relatively limited extent of the bias this may introduce. For example, in Manning and colleagues' analysis of data from the USA, the use of a subjective health status measure in a postdictive model increases the explanatory power by only 10 per cent compared with the same measure in a predictive model.

Acute limiting illness

One of the implications of the results reported in this paper is that a question about acute illness was inappropriately excluded from the 1991 Census. But even though the stated rationale appears in retrospect to be false, its exclusion may have been inevitable.

In an ideal world, it might have been better to have included more than one measure of health status in the 1991 Census, but this was never a practical possibility. Census designers are notoriously conservative; it was difficult enough to add one health question. In these circumstances, reasons why limiting long-term illness was preferred to a measure of acute illness might have included its greater relevance to social care as well as the risk of a flu epidemic at the time of the Census. Nevertheless, it is worth emphasising that some important information was lost by not collecting data about acute limiting illness.

CONCLUSION

Modifying the GHS question for inclusion in the Census may have reduced the overall prevalence estimates of limiting long-term illness and changed the age-specific rates. It is impossible to assess whether this is a better estimate of the prevalence of limiting long-term illness. Moreover, it is clear from the preceding discussion that relying on the relationship between the Census health question and the utilisation of health services to serve as a proxy for relative health care need is not unproblematical. Nevertheless, the data will be widely used for that purpose and, as Sheldon and Parker (1992) have argued in relation to the use of Census data about ethnicity, the most important thing is to think critically about the way in which they will be employed.

ACKNOWLEDGEMENTS

Material from the OPCS Omnibus Survey made available through the Office of Population Censuses and Surveys has been used by permission of the Controller of HM Stationery Office. We are also grateful for advice and encouragement received from a number of colleagues.

TABLE 1

REPRESENTATIVENESS OF THE OMNIBUS SURVEY

IN COMPARISON WITH THE GENERAL HOUSEHOLD SURVEY, 1990

Proportion of sample who are:		GHS 1990[8]	Omnibus Survey 1991
		%	%
Women		53	54
Non-white		5	5
Aged	16-24	15	15
	25-34	19	19
	35-44	18	18
	45-54	15	14
	55-64	13	13
	65-74	12	12
	75+	8	8
Local authority renter		24	22
Owner occupier		66	71
Region	North	6	6
	Yorkshire & Humberside	9	9
	North West	12	11
	East Midlands	8	8
	West Midlands	9	10
	East Anglia	4	4
	Greater London	11	12
	South East	19	19
	South West	9	9
	Wales	6	5
	Scotland	9	9

Source: Symth and Browne 1992; King's Fund Institute analysis of OPCS Omnibus Survey.

TABLE 2

OMNIBUS SURVEY RESPONSES
COMPARED WITH THE GENERAL HOUSEHOLD SURVEY 1990+

Variables	GHS 1990	Omnibus Survey 1991
	%	%
Health		
- Limiting long-term illness	24.4	19.1
- Acute sickness	14.2	12.5
- Subjective health assessment		
Good	60.0	64.9
Fairly good	28.0	26.0
Not good	12.0	9.2
Utilisation		
- GP consultation	15.8	18.9
- Out-patient	14.5	16.3
- In-patient	10.8	10.8

\+ all persons aged 16+

Source: Symth and Browne 1992; King's Fund Institute analysis of OPCS Omnibus Survey.

TABLE 3

PREVALENCE OF LIMITING LONG-STANDING ILLNESS, GREAT BRITAIN

	Age Group				
	16-44	45-64	65-74	75+	Total
	%	%	%	%	%
Men					
GHS 1990	13	29	38	47	23
Omnibus Survey 1991	8	23	38	52	19
Women					
GHS 1990	14	30	42	53	26
Omnibus Survey 1991	8	20	38	59	19

Source: Symth and Browne 1992; King's Fund Institute analysis of OPCS Omnibus Survey.

TABLE 4

OMNIBUS SURVEY RESPONSES

COMPARED WITH GHS 1990[+]

Poor Health Status	GHS 1990	Omnibus Survey 1991	Ratio
	%	%	
Limiting Long-Standing Illness	24.4	19.1	1.28 : 1
Acute Sickness	14.2	12.5	1.14 : 1
Fairly Good or Not Good Health	40.0	35.2	1.14 : 1

[+] all persons aged 16+

Source: Symth and Browne 1992; King's Fund Institute analysis of OPCS Omnibus Survey.

TABLE 5

OPCS OMNIBUS SURVEY, 1991

PERCENTAGE OF RESPONDENTS IN EACH

HEALTH STATE WHO HAVE USED HEALTH SERVICES RECENTLY

	Limiting Long-standing Illness		Acute Illness		Subjective Health Assessment			
Utilisation	No	Yes	No	Yes	Very Good	Fairly Good	Not Good	N=
	%	%	%	%	%	%	%	
In-patient stay in last 12 months	9	20	9	23	7	14	32	689
Out-patient appointment in last 3 months	13	32	14	34	11	21	43	1039
Seen GP in last 2 weeks	16	33	14	52	13	25	45	1212
N=	5182	1221	5604	797	4152	1662	587	-

N = 6415

X^2 Significant for all bivariate associations at 99 per level

TABLE 6

PROBABILITIES OF

HOSPITAL IN-PATIENT UTILISATION*

OPCS OMNIBUS SURVEY, 1991

Models	Limiting Long-standing Illness	Not good Health	Acute Illness
Health Status Alone	0.20	0.32	0.23
+ Acute illness variable	0.30	0.36	-

* Question: During the last year have you been in hospital as an in-patient, overnight or longer?

N = 6415

TABLE 7

PROBABILITIES OF

HOSPITAL OUT-PATIENT UTILISATION*

OPCS OMNIBUS SURVEY, 1991

	Limiting Long-standing Illness	Not good Health	Acute Illness
Health Status Alone	0.32	0.43	0.34
+ Acute Illness Variable	0.45	0.50	-

* Question: during the last three months, did you attend as a patient the casualty or out-patient department of a hospital (apart from straightforward ante- or post-natal visits)?

N = 6415

TABLE 8

PROBABILITIES OF

GP CONSULTATION

OPCS OMNIBUS SURVEY, 1991

Models	Limiting Long-standing Illness	Not Good Health	Acute Illness
Health Status Alone	0.33	0.45	0.51
+ Acute Illness Variable	0.58	0.62	-

* Question: during the two weeks ending yesterday, apart from any visit to a hospital, did you talk to a doctor for any reason to do with your own health (or that of another adult member of your household)?

N = 6415

REFERENCES

M. Blaxter (1985), 'Self-definition of Health Status and Consulting Rates in Primary Care', *Q J Soc Affairs*, vol. 1(2), pp. 131-171.

A. Epstein (1990), 'The outcomes movements - will it get us where we want to go?', *New Engl J Med*, vol. 323(4), pp. 266-270.

K. Foster, A. Wilmot and J. Dobbs (1990), *General Household Survey 1988*, Series GHS No. 19, HMSO, London.

V. Fuchs (1978), 'The Supply of Surgeons and the Demand for Surgical Operations', *Journal of Human Resources Supplement*, vol. 13, pp. 35-36.

R. Haynes (1991), 'Inequalities in Health and Health Service Use: Evidence from the General Household Survey, *Soc Sci Med*, vol. 33(4), pp. 361-368.

D. Hosmer and S. Lemeshow (1989), *Applied Logistic Regression*, John Wiley & Sons, New York.

W. Manning, J. Newhouse, and J. Ware (1982), 'The Status of Health in Demand Estimation; or Beyond Excellent, Good, Fair and Poor', in V. Fuchs (ed.), *Economics Aspects of Health*, NBER University of Chicago, Chicago, pp. 143-167.

J. Martin, H. Meltzer and D. Elliot (1988), *The prevalence of disability among adults*, OPCS Surveys of Disability in Great Britain Report 1, HMSO, London.

N. Mays (1987), 'Measuring Need in the National Health Service Resource Allocation Formula: Standardised Mortality Ratios or Social Deprivation?', *Public Administration*, vol. 65, pp. 45-60.

M. Morgan, N. Mays, and W. Holland (1987), 'Can hospital use be a measure of need for health care?', *J Epidem Community Health*, vol. 41, pp. 269-274.

A. Noone, M. Goldacre, A. Coulter and V. Seagruatt (1989), 'Do referral rates vary widely between practices and does supply of services affect demand? - A study in Milton Keynes and the Oxford region', *J R Coll Gen Pract*, vol. 39, pp. 404-407.

Office of Population Censuses and Surveys (1989), *Census Newsletter*, vol. 9, p. 18, May.

Office of Population Censuses and Surveys (1991), *OPCS Omnibus*, OPCS, London, mimeo.

M. Pauly (1980), *Doctors and their Workshops: Economic Models of Physician Behaviour*, University of Chicago Press, Chicago and London.

D. Pearce and F. Thomas (1990), 'The 1989 Census Test', *Population Trends*, vol. 61, pp. 24-30.

T. Sheldon and H. Parker (1992), 'Race and Ethnicity in Health Research', *Journal of Public Health Medicine*, vol. 14(2), pp. 104-110.

M. Smyth, F. Browne (1992), *General Household Survey 1990*, Series GHS No. 21, HMSO, London.

E. van Doorslaer and R. van Vliet (1989), 'A Built Bed is a Filled Bed? An Empirical Re-examination', *Soc Sci Med*, vol. 28:2, pp. 155-164.

R.C.J.A. van Vliet (1988), *Hospital Utilisation, performance measures and health status: Econometric Analysis of Dutch Micro-data*, Offsetdrukkerij Kanters BV, Albasserdam.

F. Whitehead (1988), 'How the 1991 Census should improve government statistics' *Population Trends*, vol. 53 (Autumn), pp. 18-21.