

PRACTICE OBSERVED

Practice Research

Facilitating prevention in primary care

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Abstract

We believe that many general practitioners would practise preventive medicine if they had the opportunity to organise their practice to do this. We therefore provided a "facilitator," who understands the work of a general practice, to help practices that were interested in prevention to set up programmes. She, for example, helped the primary care team to set up objectives, trained practice nurses to measure blood pressure, and set up a system to measure the progress of the programme.

Introduction

The scope for prevention in general practice has been described recently, the priorities being the prevention of vascular disease and cancer.^{1,2} A recent report concluded that "about half of all strokes and a quarter of all deaths from coronary heart disease in people under the age 70 are probably preventable by the application of existing knowledge."³ Because measures to prevent vascular disease include helping people to stop smoking there is also scope for preventing the one third of cases of cancer caused by cigarette smoking.⁴

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Potential of the primary care team

Primary care is uniquely placed for carrying out prevention because: (i) it has extensive access to the population; (ii) contacts are largely patient initiated and fear of disease may motivate

HEART ATTACK AND STROKE RISK CARD

Name: _____ M F

Date: _____

DOB: _____

Weight: _____

Smoker: _____ Cigarettes: _____ Puff (device) 19 _____

Not smoker: _____

Relevant Family History: _____

Diagnosis: _____

Diabetes: _____

Diastolic Blood Pressure: _____

Smoking: _____

Weight Change: _____

Diastolic Blood Pressure Change: _____

Diastolic Blood Pressure: _____

Notes: _____

FIG 1—Heart attack and stroke risk card.

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changes in behaviour; (iii) consultations in primary care offer educational opportunities; (iv) primary care doctors are credible and trusted (R McCrom, J Budd, Communication and health education, University of Leicester Centre for Mass Communication Research); (v) there is evidence of effectiveness.^{5,6} The opportunities arising from the one million daily contacts in general practice in Britain may be exploited not only by doctors but by other members of the primary care team, notably practice nurses.

General practitioners have been overwhelmed with exhortations to practise prevention. They have been urged to counsel smokers, identify people with high blood pressure, detect those at risk of cancer, prevent child abuse, give dietary advice, measure blood lipids, care better for people with diabetes, and do many other preventive activities. There has been some response but there is need for more activity.⁷

We believe that general practitioners are committed to the principles of prevention. Some have shown their interest by developing preventive programmes but most have not managed to do so.^{8,9}

Primary care teams are busy, and few have slack time during the week when members sit around wondering what to do. Nor is it possible for general practitioners to identify areas of work that could easily be discontinued. What primary care teams need is not more exhortations, or even more knowledge, but practical help to reorientate their activity and, by effective use of "reimbursable" staff, to practise preventive medicine. We therefore decided to offer primary care teams that were interested in prevention practical help to develop anticipatory care. This help was in the person of a "facilitator."

Facilitator

An individual with experience of primary care who could acquire the necessary preventive skills and help practices to learn the "tricks of the trade" seemed to be needed. The facilitator's job is to: (i) help the primary care team to discuss prevention and set objectives; (ii) help the general practitioners

to recruit a practice nurse or increase existing nursing time; (iii) train the nurse in methods of prevention, including measuring blood pressure and giving advice on smoking and diet; (iv) help other practice staff to learn how to ensure that individuals at risk may be opportunistically recruited to see the practice nurse; (v) help the practice to prepare, design, and print risk cards (fig 1), reminder labels (fig 2), and explanatory letters, establish simple recall systems, and maintain supplies of health education materials; (vi) organise meetings of doctors, nurses, receptionists, and other staff; and (vii) set up a system of audit to measure progress.

The facilitator does not provide a service commitment by seeing patients, except when demonstrating skills. The primary care team do the work, the facilitator simply provides the additional energy required to change working patterns and is a source of information.

The emphasis throughout has been to give practical help to general practitioners, practice nurses, health visitors, district nurses, practice managers, secretaries, receptionists, and any other member of primary care teams in changing patterns of work.

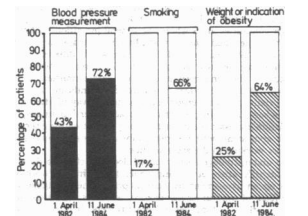


FIG 1—Results of 10% audit of recordings in the preceding five years conducted at practice A on 1 April 1982 and 11 June 1984.

Oxford Prevention of Heart Attack and Stroke Project

The basic measures adopted are inquiring and giving advice about smoking, recording blood pressure, weighing, and giving dietary advice. These are carried out by a practice nurse and offered opportunistically and at appropriate intervals to patients aged 35-64 years who attend the practice for any reason.

Information recorded on patients' notes about cigarette smoking, blood pressure, and weight is the "outcome" measurement. This is, of course, a proxy measurement, far removed from reduction in morbidity and mortality, which are the real objectives of preventive medicine. But identifying risk is the essential first step.

The initial results from the first practice that implemented this type of screening, based on a 10% random sample of records (validated by complete audit in some practices), are encouraging (fig 3). Over 3000 people have so far been screened, but detailed analysis and comparison with control practices must await completion of the study.

Implications for health authorities

We believe that many general practitioners and primary care teams are committed to and would like to practise preventive medicine, but they need more than exhortation if they are to change their pattern of work. Only about 15% of general practitioners currently employ their full quota of staff for which they are reimbursed. The cost of employing a practice nurse to

do the work described can be covered by reimbursement by the family practitioner committee, tax relief, and fees received for only one cervical smear and one tetanus injection per doctor each week. In a practice of two doctors the cost after reimbursement and tax relief for the 10 hours required to implement the prevention programme was only £7 a week (table).

Health authorities can help to change work patterns in general practice. We suggest that the most cost effective way of doing this is to employ a facilitator. Our facilitator is a trained health visitor and health education officer employed on the senior administrative officer grade. She has visited others in the United Kingdom who are concerned in similar work, as well as local practices that have prevention programmes, and has acquired the necessary skills to pass on to primary care teams.

The expected independence of family practitioner committees, which will result from enactment of the Health and Social Security Bill, emphasises the importance of collaboration between the district health authority and family practitioner committee services in providing health care. Patient care and health promotion are vitally dependent on such collaboration, and this project is an example of how rhetoric may be transformed into action.¹⁰

Cost of a practice nurse

Practice nurse employed for 10 hours per week:
 Nursing rates (15 employees per week)
 at £3.98 per hour = £59.80 per week
 less 20% Family practitioner committee reimbursement = £47.84
 less 40% tax relief on the remaining 30% = £28.66 per week
 = £19.18 per week

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Underprivileged areas: validation and distribution of scores

BRIAN JARMAN

Abstract

Underprivileged areas were identified by weighting several census variables that relate to social conditions, by using weights determined by means of a questionnaire sent to one in 10 of the general practitioners in the United Kingdom. The weighted variables were added (after statistical manipulation) to give a score for each of the 9285 electoral wards in England and Wales. Blank ward maps were sent to general practitioners in five family practitioner committee areas and they were asked to shade the wards according to the degree to which the population increased their workload or the pressure on their services. Maps of these same areas were then prepared by using the calculated scores with the cut off points between the worst, the intermediate, and the best areas as on those used by the general practitioners. The two sets of maps were then compared to determine how well the maps that were based on scores agreed with the general practitioners' maps showing their assessment of the variation of workload in their areas.

Overall, 83% of the wards differed in shading in any way between the two sets of maps. In the three areas where the general practitioners shaded complete wards

and did not report having difficulties with shading only 12% of the wards differed.

It may be possible to use these "underprivileged area" scores to indicate where problems occur for general practitioners and to extend this work to other primary health care workers.

Introduction and method

Underprivileged area scores were calculated for each of the 98 family practitioner committee areas in England (90) and Wales (eight) using eight census variables from the 1981 census. Each variable was weighted according to the degree to which general practitioners nationally considered that factor—for example, proportion of elderly people living alone—increases their workload or pressure on their services when present in their area. The weightings were determined by means of a questionnaire sent to one in 10 of all general practitioners in the UK as described previously.¹

To find out how accurately these underprivileged area scores actually agreed with the opinions of general practitioners in various areas blank ward maps were sent to the local medical committees that represented general practitioners in five family practitioner committee areas. The local medical committees were thought to be the most suitable groups to represent the views of general practitioners in these areas but they could see the views of non-committee members if they wished. The family practitioner committee areas were chosen by the underprivileged areas subcommittee of the General Medical Services Committee of the BMA, based on the criteria that they

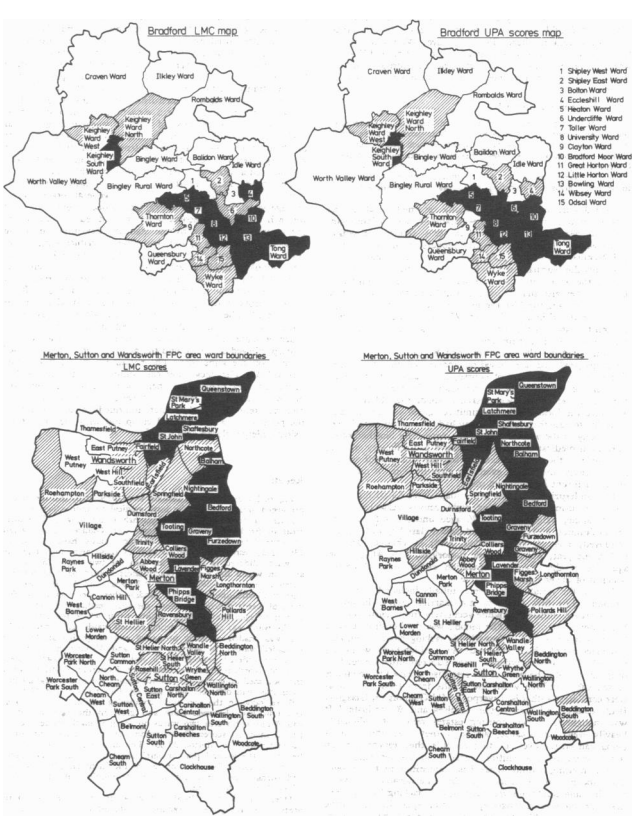


FIG 1—Shading of wards according to increased workload or pressure on general practitioners (arrows in four of the five (Northamptonshire too detailed to show) family practitioner committee areas (FPC) by local medical committees (LMC) and by underprivileged areas (UPA) scores. Cut off levels between the black (worst), grey (intermediate), and white (best) areas differ among FPC areas.

1989

FIG 2—Medical notes with 1989 sticker.

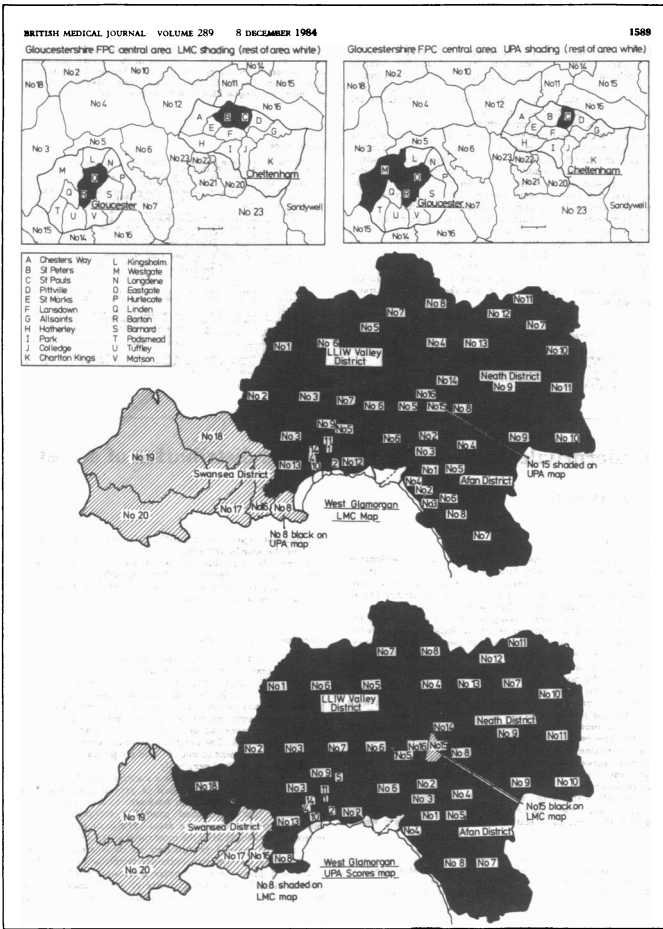


TABLE 1—Differences in wards according to local medical committee maps and underprivileged area maps

Local medical committee area	No. of wards	No. of pairs of wards differing between local medical committee and underprivileged area maps	Range of ward underprivileged area scores	Ward with highest score
Bradford	45	11	27-72	72
West Glamorgan	45	11	30-72	72
London	45	11	29-72	72
Merton, Sutton and Wandsworth	47	7	57-72	72
Northamptonshire	28	5	40-69	69
Northamptonshire (South Western part)	28	5	40-69	69
Northamptonshire (North Eastern part)	28	5	40-69	69
Northamptonshire (South Eastern part)	28	5	40-69	69
Totals all wards	413	19	26-72	72

*Differences comparing shaded with unshaded wards. All differences—black and grey white—shown in parentheses if different from shaded/unshaded. †Whole wards shaded by local medical committee except for one ward in north east Northamptonshire.

Figure 2 shows the distributions of ward scores and ward populations related to scores in England and Wales. The mean (standard deviation) of the 9265 ward scores is 0.16 (0.00) and the range is -62.52 to 72.95. Table II gives details of individual variables. Wards with scores over 10 contain 23% of the population.

If the weightings used for the variables are changed to the average weightings of general practitioners in England and Wales rather than of general practitioners in the UK then the average change of weighting is only 1%, and this makes almost no difference to the underprivileged area scores calculated. For example, the average change of score for Bradford wards is 0.1 (<1% of the average score) and there is no difference in the rank order of the wards ranked by score. Table III gives the 50 highest scoring wards (boroughs for London) and the urban areas that they are located in.

differences—that is, black grey and grey white—between the two sets of maps, 26 pairs of wards (6.3%) differed (table 1).

The cut off points between the "worst," "intermediate," and "best" wards in each area were determined by each local medical committee, and their judgments apply to differences within their area, not to differences between areas. The same applies to the underprivileged area scores, whose cut off values were chosen to give the same number of wards to each shading band as the number chosen by the local medical committee—that is, the cut off points were those chosen by the committee. The shadings of the underprivileged area maps for different areas in fig. 1 are drawn to show the range of scores within a local medical family practitioner com-

Discussion

The aim of this study was to find ways of using census data to identify the areas that general practitioners think increase their workload or put pressure on their services and to test whether the areas so identified agree with general practitioners' perceptions of workload in their localities. The blank maps sent to local medical committees for them to shade according to their local experience agreed with the maps produced using the underprivileged area method based on census data in the

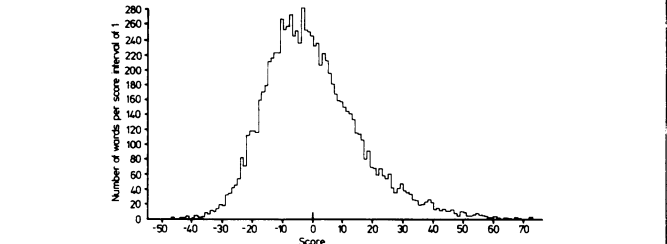


FIG 2—Distribution of eight-variable ward scores based on 1981 census data.

TABLE II—Details of variables

Variable	Average value and range	Correlation with score	Ward variables in England and Wales (n=9265)	Transformed mean (SD)	Ward with maximum value of variable
Elderly alone	5.21	0.369	5,200 (211)	0.245	Worthing
Black population	0.42	0.482	1,868 (44)	0.17	Blith Valley
London	0.73	0.418	2,000 (45)	0.17	Blith Valley
Unemployed	4.16	0.677	1,971 (20)	0.269	Wynnon (Anglesey)
Overcrowded	0.02	0.755	400 (29)	0.134	Tower Hamlets
Overcrowded	0.05	0.755	400 (29)	0.134	Tower Hamlets
Ethnic minorities	2.95	0.519	2,721 (30)	0.17	Worthing

*The highest correlations between individual variables are between overcrowding and ethnic minorities (0.671) and between overcrowding and unemployed (0.669), but the percentages are of the resident population except for unemployment which is of the economically active.

should be a sample widely distributed throughout England and Wales and should include country, town, and inner city areas. The subcommittee chose Gloucestershire, West Glamorgan, Northamptonshire, Bradford, and Merton, Sutton and Wandsworth. The letter to the local medical committees from the chairman of the underprivileged areas subcommittee went as follows:

"Identification of underprivileged areas"

"I am enclosing a ward map of your local medical committee area and a transparent overlay showing ward boundaries. We are trying to determine in which areas the population is such that it causes the greatest workload or pressure on the services of general practitioners. Considering your area from this point of view, would you please shade the wards on the overlay to indicate: worst areas, black; intermediate areas, cross-hatched; best areas, white (unshaded)."

Shaded ward maps were eventually returned by all of the local medical committees. Three—Bradford, West Glamorgan, and Gloucestershire—shaded (black, cross-hatched, or white) whole wards, but the general practitioners in Merton, Sutton and Wandsworth shaded parts of wards, and in Northamptonshire only the Northampton division covering the south western half of the area were able to shade the map for their whole area and they also shaded parts of wards. In the north eastern part of Northamptonshire the local medical committees could not shade the Kettering District (22 wards) and were honest enough to state that they could only guess at the shading of the north eastern part of their area.

Figure 1 shows the maps returned by the committees and the maps produced later based on underprivileged area scores. These latter maps were, of course, not available to the local medical committees (nor to the underprivileged areas subcommittee) before they were asked to shade their blank maps, nor were the local medical committees given any census data on which to base their judgment but had to use their experiences of working in the areas to shade the maps. The Northamptonshire local medical committee may have had difficulty shading the whole of their area because it is large with a wide variety of conditions, and in the event the two divisions of the committee each sent in their own maps.

The underprivileged area score maps were based on scores calculated using the following eight census variables: elderly alone, weighting 6.21; aged under 5, 4.94; one parent families, 3.01; unskilled (social class V), 3.74; unemployed, 3.34; overcrowded, 2.88; % changed address within one year, 2.68; % ethnic minorities, 2.50. All percentages are of the resident population except unemployment, which is of the economically active.

Two of the variables that were initially included were later omitted. The first was "non-married couple families," which proved difficult to define accurately from census data it had a weighting of 2.71. The second was the housing variable "population living in households lacking basic amenities" (exclusive use of a bath and inside WC), which had a weighting of 3.60. The underprivileged areas subcommittee decided to drop this variable because of the response received by members of the subcommittee when the results from their own areas were considered—that is, Liverpool, Mid Glamorgan, Glasgow, Bedfordshire, and Kensington, Chelsea and Westminster. It was thought that poor housing estates were not sufficiently heavily weighted because, although they may show up as being bad on the overcrowding variable, they appear good on this "lacking basic amenities" variable, as the regulations for council housing require these basic amenities to be present. The subcommittee decided that, although a variable to measure poor housing conditions was needed, the "lacking basic amenities" variable was no longer appropriate, especially on housing estates. The variable "population over 65" had been included in some earlier work¹ but when included this time the response to the subcommittee from their own areas (see above) indicated that this was overweighting the elderly if "elderly living alone" was also included. The definition of the ethnic

minorities variable was also changed from "born outside the United Kingdom" to "New Commonwealth and Pakistan," which is often used by the Department of the Environment² and the Office of the Population Censuses and Surveys.

The scores for each ward were calculated, as described,¹ by first normalising each variable by an arc sine square root of variable transformation (sin⁻¹ V), where V is the variable as a percentage and then standardising the transformed values using the means and standard deviations of the transformed values of the variables for all of the 9265 wards in England and Wales. The City of London was treated as one ward as 16 of the 25 wards had fewer than 50 residents and its total population was only 4700. The rest of the UK outside England and Wales was omitted as the census data were not available to us. The standardised, transformed mean values of each of the eight variables were weighted by the UK general practitioners' average weightings (given above) and added to give the score for each ward. As the scores were standardised by subtracting the mean and dividing by the standard deviation the mean value of all scores is 0, and, with eight variables weighted as shown above, about 82% of the wards (containing 78% of the population) in England and Wales have scores between -20 and +20. In each local medical committee family practitioner committee area the number of wards shaded black (x) and the number cross-hatched grey (y) by the local medical committee were noted. The ward scores were then calculated, using the mean and standard deviation method described and the wards listed in order of score. The top x wards were taken as black on the underprivileged area map and the next y taken as cross-hatched or grey on the same map. The remainder were left as white (unshaded). The local medical committee and the underprivileged area maps were then compared to determine the degree to which the wards that were thought by the local medical committee to be worst, intermediate, and best from the point of view of workload compared with the predictions using underprivileged area scores.

Results

Figure 1 shows the local medical committee maps and the underprivileged area maps for the local medical committee family practitioner committee areas (Northamptonshire not shown). The three areas of Bradford, West Glamorgan, and Gloucestershire, where the general practitioners shaded complete wards, have 30, 35, and 136 wards respectively, and in each of these areas only one pair of wards differed in shading between the two maps. In the two areas in which the general practitioners shaded parts of wards—Merton, Sutton and Wandsworth (55 wards) and the south western part of Northamptonshire (78 wards)—there were seven and five pairs of wards differing between the local medical committee and underprivileged area shading (taking wards where more than half of the ward was shaded as being shaded wards and where under half was shaded as being unshaded and comparing shaded with unshaded wards). In Merton, Sutton and Wandsworth four pairs of wards differed between black and grey. In the Merton, Sutton and Wandsworth area two pairs of wards on a grey-black borderline had almost identical scores (Rochampton ward in Wandsworth 20.99, Lavender ward in Merton 20.96). The maps were drawn to best with the view of workload compared with the predictions using the health care information officer for the Richmond, Twickenham and Rochampton Health Authority wrote pointing out the difficulties of the Rochampton ward.

Overall, in the three local medical committee family practitioner committee areas where the general practitioners shaded complete wards and did not report difficulty doing so three pairs of wards out of a total of 221 wards (1.4%) differed between the two maps. Including the areas where the general practitioners shaded parts of wards or had difficulty shading the maps, 19 out of a total of 413 (4.6%) wards differed (comparing shaded with unshaded). Adding together all

TABLE III—Number of wards in top 50 shown for each area

Area	Wards in top 50
London	12
Birmingham	10
Manchester	3
Bradford	2
Bradford 2	2
Bradford 3	2
Bradford 4	2
Bradford 5	2
Bradford 6	2
Bradford 7	2
Bradford 8	2
Bradford 9	2
Bradford 10	2
Bradford 11	2
Bradford 12	2
Bradford 13	2
Bradford 14	2
Bradford 15	2
Bradford 16	2
Bradford 17	2
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Bradford 36	2
Bradford 37	2
Bradford 38	2
Bradford 39	2
Bradford 40	2
Bradford 41	2
Bradford 42	2
Bradford 43	2
Bradford 44	2
Bradford 45	2
Bradford 46	2
Bradford 47	2
Bradford 48	2
Bradford 49	2
Bradford 50	2

five local medical family practitioner committee areas studied, so that 6.3% of the wards differed, comparing black grey and grey white shading. In the three local medical family practitioner committee areas where the general practitioners did not state that they had difficulty shading their maps or did not shade parts of wards, only 1.4% of the wards differed in any way between the two sets of maps. These results were considered by the underprivileged areas subcommittee of the General Medical Services Committee to indicate that the underprivileged area method is a satisfactory way of identifying areas where, according to general practitioners' opinions, the population increases their workload or pressure on their services and is consistent with the perceptions of local general practitioners working in the areas studied.

The underprivileged area method does not claim to do more than identify areas of varying general practitioner workload, based on an assessment by general practitioners nationally of the effects of various social factors, which is consistent with the perceptions of local general practitioners. It does not claim to deal with the workload of other community workers in the health or social services or other fields. Nor is it claimed that identifying these areas in a generally acceptable way would necessarily lead to better general practitioner services or that more resources for general practitioners in these areas would necessarily improve the health of the population. For instance, reducing smoking rates or introducing other public health or social changes may be far more effective in improving the health of the population. This subject has wider implications and is beyond the scope of this paper. It may, however, be helpful to have a way of identifying "underprivileged areas" which has been shown to fit well with the opinions of general practitioners working in the areas studied and which has been accepted by the underprivileged areas subcommittee of the General Medical Services Committee and by the 1983 annual conference of representatives of local medical committees.

The method may be used to indicate where general practitioners feel that there are more problems in their work. Since work on this subject was first published¹ we have received many requests from a wide variety of primary care workers and administrators in family practitioner committees, districts, regions, and local authorities throughout the UK for information about their areas for planning, resource allocation, siting of health centres, and other uses. The recently published Department of Health and Social Security report of the joint working group on collaboration between family practitioner committees and district health authorities pointed out the "needs for information both at district level, and for smaller units, of the order of 50 000 population" and emphasised that "the need for new data should be kept to a minimum."³ With a mean ward population of about 5200, it is clear that groups of about 10 wards (covering, for example, Medical Practices Committee areas for which aggregated general practitioner data

are known) could easily give information regarding workload in subdistricts of this size—listing the scores of the wards and the values of eight to 10 key census variables. Computer programmes using digitised ward boundaries are available to draw ward maps of areas with scores or values of individual variables shaded.

It is possible to send questionnaires to a representative sample of community nurses, social workers, and other community workers as previously described¹ to determine the variables that they consider most important for their work and then to determine the average weighting that they give to them. As the scores are fairly insensitive to variable weighting, it is probable that there would not be large differences overall between the areas identified by these other workers and those found using general practitioner variables and scores, although there would be appreciable differences for some individual wards.

The census data are updated only every 10 years, and some variables—for example regarding ethnic groups and housing conditions—changed considerably between the last two censuses. The relative scores of different areas have not changed so much. For example, for the 33 boroughs of London the ranking of borough scores calculated with 1981 census data is closely similar to that calculated using the 1971 census data and similar methodology. It is possible to go to a finer degree of geographic detail than ward level. Scores may be calculated in the way described for each of the 112 341 enumeration districts in England and Wales, each of which covers about 500 people, and the variations within a ward may be shaded. The fact that some local medical committees shaded parts of wards and that the south western part of Northamptonshire was shaded in parts as black, grey, and white within some wards may indicate that general practitioners would prefer to have information down to this degree of detail in some areas. This might easily be done from the computerised census data; the main difficulty is that of drawing and shading the enumeration district maps which are not computerised. A general practice may have patients in a dozen or so wards, and information down to ward level rather than enumeration district level may be easier to understand and more generally useful. In this case the computer could be used in addition to pick out those wards in which there are several enumeration districts having scores much higher than the ward average and then list the enumeration district scores for those wards only.

Any local medical committee that wishes to see how their own assessment of their area compares with the underprivileged area scores could send us a ward map of their local medical family practitioner committee area shaded as described above and we would then shade their underprivileged area ward map and a computer printout of ward scores and values of each variable for each of their wards. Ward maps are available from the Office of Population Censuses and Surveys, Segensworth Road, Titchfield, Fareham, Hants PO15 5RR (telephone number: 0329 42511, extension 231).

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