Results

Of 1079 persons approached, 13 refused to reply and 1066 responded. Of these, 702 (65%) had taken some prescribed medication in the past 24 hours.

Table I shows that 398 people (37%) were taking medicines that have been unavailable by proprietary name since 1 April 1985. Of these, 11 (3%) were taking more than one such preparation. The two groups that would be affected most were those taking analgesics and benzodiazepines. Other preparations were taken by a small proportion of patients.

Table II gives details of the benzodiazepine prescribing for the whole group: 146 people were taking benzodiazepines, but only three, who were taking diazepam, were taking a formulary drug. Six people were taking Maudslayi and Valium in combination. The table also shows the change that would have been required to keep the same formulary preparation. No exact NHS equivalent preparation now exists for Dalmane or Tranexan, which had been prescribed to 16 people.

Table III shows the 147 analgesic preparations prescribed to 146 people, six have been prescribable since 1 April. A total of 140 people were taking 141 preparations on the limited list, so that these must have had a change in their prescription. An equivalent formulation was available for 103 (70%) of those individuals.

Table IV shows the proportion of people who were taking one or more of the drugs on the restricted list by age group. There was a slight increase in

TABLE I—No. % of people taking medicines unavailable by proprietary name since 1 April 1985. Total number of patients: 1066

Medicine	No.	%
Analgesics	106	26
Antidepressants	52	13
Antipsychotics	12	3
Cardiovascular	12	3
Chemotherapy	12	3
Drugs for diabetes	12	3
Drugs for epilepsy	12	3
Drugs for hypertension	12	3
Drugs for infection	12	3
Drugs for asthma	12	3
Drugs for allergy	12	3
Drugs for eye disease	12	3
Drugs for ear, nose and throat	12	3
Drugs for skin disease	12	3
Drugs for urinary tract	12	3
Drugs for reproductive system	12	3
Drugs for endocrine system	12	3
Drugs for blood disorders	12	3
Drugs for cancer	12	3
Drugs for other conditions	12	3

TABLE II—Benzodiazepine prescribing

Drug prescribed	No.	%
Analgesics	106	26
Antidepressants	52	13
Antipsychotics	12	3
Cardiovascular	12	3
Chemotherapy	12	3
Drugs for diabetes	12	3
Drugs for epilepsy	12	3
Drugs for hypertension	12	3
Drugs for infection	12	3
Drugs for asthma	12	3
Drugs for allergy	12	3
Drugs for eye disease	12	3
Drugs for ear, nose and throat	12	3
Drugs for skin disease	12	3
Drugs for urinary tract	12	3
Drugs for reproductive system	12	3
Drugs for endocrine system	12	3
Drugs for blood disorders	12	3
Drugs for cancer	12	3
Drugs for other conditions	12	3

TABLE III—Analgesic prescribing

Drug prescribed	No.	%
Analgesics	106	26
Antidepressants	52	13
Antipsychotics	12	3
Cardiovascular	12	3
Chemotherapy	12	3
Drugs for diabetes	12	3
Drugs for epilepsy	12	3
Drugs for hypertension	12	3
Drugs for infection	12	3
Drugs for asthma	12	3
Drugs for allergy	12	3
Drugs for eye disease	12	3
Drugs for ear, nose and throat	12	3
Drugs for skin disease	12	3
Drugs for urinary tract	12	3
Drugs for reproductive system	12	3
Drugs for endocrine system	12	3
Drugs for blood disorders	12	3
Drugs for cancer	12	3
Drugs for other conditions	12	3

before 1 April or will have had to change to cheaper preparations or discontinue their use of such drugs.

Any of these options will have had a profound effect on the elderly for though those aged 65 and over make up 15% of the population, they account for over a third of the national expenditure on drugs.

TABLE IV—Relation between limited prescription groups of drugs and disability for supplementary pensioners

Drug prescribed	No.	%
Analgesics	106	26
Antidepressants	52	13
Antipsychotics	12	3
Cardiovascular	12	3
Chemotherapy	12	3
Drugs for diabetes	12	3
Drugs for epilepsy	12	3
Drugs for hypertension	12	3
Drugs for infection	12	3
Drugs for asthma	12	3
Drugs for allergy	12	3
Drugs for eye disease	12	3
Drugs for ear, nose and throat	12	3
Drugs for skin disease	12	3
Drugs for urinary tract	12	3
Drugs for reproductive system	12	3
Drugs for endocrine system	12	3
Drugs for blood disorders	12	3
Drugs for cancer	12	3
Drugs for other conditions	12	3

Those who are particularly high users of the limited prescription medicines in the elderly population in our study were disabled, had psychological abnormalities, and were on supplementary pension. Such patients are unlikely to be able to afford to pay the full price of their original preparation.

Most medicines taken by the patients in this survey have a generic equivalent. But these preparations often have a different external appearance, which may have resulted in reduced acceptability of the

drug. The third option of discontinuing the drug will have required a considerable amount of the general practitioner's time and effort in weaning elderly people off their medications without inducing problems. In particular, suddenly stopping benzodiazepines after medium or long term use may lead to side effects.

It remains to be seen if elderly people, who are used to receiving medication free on the NHS, were willing to alter their medication to avoid the heavy cost that they would otherwise incur; and, if so, whether this has reduced the effectiveness of their treatment or whether the changes in the law have led to more careful and rational prescribing for the elderly. Rigorous monitoring in several centres over the next year is essential.

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Is the Jarman underprivileged area score valid?

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Abstract

A recently published validation of an underprivileged area score, which is intended to reflect factors that increase general practice workload or pressure on their services, was incomplete; a validation based on criteria other than the opinion of general practitioners is also required. Areas with higher mortality from diseases where general practitioner intervention can reduce mortality substantially are likely to have a greater need for general practice services. Similarly, the need for general practitioner services should be higher where the incidence of such treatable conditions is higher.

This paper describes the association between Jarman's score and (a) mortality from causes that are amenable to general practice intervention and (b) incidence of two diseases where general practice intervention is important. Using these data the score appears to have external criterion validity and thus is likely to reflect, at least crudely, the need for general practitioner services.

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Introduction

Underprivileged area scores that are intended to reflect factors which increase general practice workload or pressure on their services, based on 1981 census data, have been calculated. These

FIG. 1—Comparison of tuberculosis age-standardized mortality for 1979-83 by age with Jarman's "need" score for the 98 family practitioner committee areas of England and Wales.

scores were criticised for not having been validated, and the author has now attempted to rectify this. The score, based on the opinions of a national sample of general practitioners concerning factors that influence the workload of an area, was validated against opinions of local general practitioners of the workloads generated by patients living in different areas. Although difficult to achieve, a validation based on criteria other than opinion is also required. While accepting that routinely available data are limited in the extent to

FIG. 2—Comparison of age-standardized notification rates for 1974-8 for tuberculosis with Jarman's "need" score for the 98 family practitioner committee areas of England and Wales.

which they are able to reflect need, this paper describes the relation between Jarman's score and our own data, which relate to the need for general practice services.

In a previous paper deaths from hypertension and stroke, ages 35-64, cervical cancer, ages 5-64, tuberculosis, ages 5-64, and asthma, ages 5-64, were identified as indicators of health service outcome that were more likely to reflect general practice than other aspects of health care. For these diseases the role of primary medical care is particularly important in the early detection of disease and complications and maintenance of treatment. Where the mortality from or the incidence of these diseases is high there is likely to be a greater need for primary care services either in quality or quantity. These diseases constitute only a small part of total population morbidity, but provide readily available indicators of some aspects of care. Two sources of data were examined: (a) mortality from causes that are amenable to general practice intervention and (b) incidence of two diseases for which general practice intervention is important.

Methods and results

Mortality from the above diseases with ICD codes as defined in 1 were obtained from 11,000 of the Population Census and Survey, 1972-83, for the period 1979-83 and aggregated to the 98 family practitioner committee areas of England and Wales. OPCS mid-year population estimates for the same period were also obtained and age-standardized mortality ratios were calculated for each family practitioner committee area for the five year period.

For cervical cancer and tuberculosis crude estimates of disease incidence were possible using data collected by disease registries. The OPCS provided unpublished listings of cervical cancer registrations for the period 1974-8 from the National Cancer Registry. Tuberculosis notifications for the same

FIG. 3—The geographical distribution of Jarman's "need" score (left) and tuberculosis mortality, 1979-83 (right). The shading shows the sextile group for each family practitioner committee area. The numbers in the boxes are upper bounds for each sextile group. Tuberculosis standardized mortality ratios for England and Wales: 100.

period, compiled by the Communicable Disease Surveillance Centre of the Public Health Laboratory Service and OPCS, were also made available. Age-standardized notification rates were calculated for each family practitioner committee area. Dependent scores were provided for each family practitioner committee area (B. Jarman, personal communication, 1985). These were based on the 1981 census, but were similar to those based on the 1971 census.

Each of these sets of validating data were plotted against Jarman's score, and regression lines were calculated. Areas that deviated from the regression line more than could be expected by chance were identified. Maps of Jarman's score and of mortality that identified areas according to their sextile groupings of scores were compared.

Plots for tuberculosis mortality and incidence are shown in figures 1 and 2. The Jarman score is related to both mortality and notification rates, although some family practitioner committee areas deviate from this pattern. Figure 3 shows the geographical distribution of Jarman's score and tuberculosis mortality. The Jarman score is positively correlated ($r = 0.64$) with population density (persons per hectare) as recorded in the 1981 census. The regression coefficients are shown in the table for all validating variables. All variables apart from asthma mortality are significantly associated with the Jarman score.

Mortality from hypertension and stroke was significantly higher in Gateshead, Camden and Islington, City and East London, and Sandwell than the Jarman score predicted. Tuberculosis notifications in Brent and Harrow were approximately double those predicted.

Discussion

A major problem in validating the Jarman score is finding independent data that are likely to reflect "need". Our mortality and incidence data were intended to reflect the outcome of health services intervention and so can only measure need indirectly. It seems reasonable, however, to assume that in areas where there is higher mortality from diseases where general practitioners can reduce mortality substantially by treatment there is greater need for general practice services. Similarly, the need for such services should be greater where the incidence of cervical cancer and tuberculosis is higher. The Jarman score, which is based on the opinions of local general practitioners, was validated against opinions of general practitioners of the workloads generated by patients living in different areas. Although difficult to achieve, a validation based on criteria other than opinion is also required. While accepting that routinely available data are limited in the extent to

which they are able to reflect need, this paper describes the relation between Jarman's score and our own data, which relate to the need for general practice services.

In a previous paper deaths from hypertension and stroke, ages 35-64, cervical cancer, ages 5-64, tuberculosis, ages 5-64, and asthma, ages 5-64, were identified as indicators of health service outcome that were more likely to reflect general practice than other aspects of health care. For these diseases the role of primary medical care is particularly important in the early detection of disease and complications and maintenance of treatment. Where the mortality from or the incidence of these diseases is high there is likely to be a greater need for primary care services either in quality or quantity. These diseases constitute only a small part of total population morbidity, but provide readily available indicators of some aspects of care. Two sources of data were examined: (a) mortality from causes that are amenable to general practice intervention and (b) incidence of two diseases for which general practice intervention is important.

Mortality from the above diseases with ICD codes as defined in 1 were obtained from 11,000 of the Population Census and Survey, 1972-83, for the period 1979-83 and aggregated to the 98 family practitioner committee areas of England and Wales. OPCS mid-year population estimates for the same period were also obtained and age-standardized mortality ratios were calculated for each family practitioner committee area for the five year period.

For cervical cancer and tuberculosis crude estimates of disease incidence were possible using data collected by disease registries. The OPCS provided unpublished listings of cervical cancer registrations for the period 1974-8 from the National Cancer Registry. Tuberculosis notifications for the same

measures, which to some extent reflect the need for general practice services. More detailed research would be required, however, to firmly establish its validity—for example, whether it can be used to derive greater equity in the distribution of family practitioner committee resources in a method analogous to the one based on standardized mortality ratios that is used for deriving resource targets for professional health authorities.

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100 YEARS AGO

"Six—was I glad to see the letter headed 'Relative Rank' in the *Journal* of the 16th instant. It is a subject on which we, most of us, feel strongly, but on which we are, as a rule, deterred from entering, owing to the fear that we may be misunderstood, especially by our civil brethren, and be imagined to be ashamed of our profession as medical men. Let me assure you that, far from that being the case, it is usually those men amongst us who are keenest at their work who feel most strongly the desirability of our having honours, so distinct from relative rank, in commanding our men, in drill, or in any other of our various duties, the want is felt. By all means let us retain the honourable title of 'doctor', but let it be a generic term, in much the same way as we speak of an engineer as a 'sapper', or an artilleryman as a 'gunner', no matter what his rank, but do not let us apply it, as at present done, to every grade in our corps except the quartermasters. From the white-moustached, bronzed surgeon-general, whose breast is thick with medals, down to the last named surgeon on probation. There can be no doubt that it would increase our *esprit de corps*, and our influence socially and professionally, and thereby add to the efficiency of the army as a whole, if we had some titles which could be 'understood of the people', instead of our at present unworldly and meaningless appellations. Most of our officers with whom I have talked on the subject would prefer to retain the word surgeon as a

distinctive affix, simply putting the various ranks before it, as captain-surgeon, major-surgeon, colonel-surgeon, etc., which are much more manageable compounds than the present, and convey some idea of what seniority a man has. The reason we would retain the word 'surgeon', if possible, is because we are proud of it, and of the noble profession to which we have the honour to belong, and we should not run the risk of being mistaken for a ordinary line soldier." Tommy Atkins, "who has evidently felt the incongruity of the present system, has solved the question for himself, and always talks of the 'major-doctor', the 'general-doctor', etc. That, sir, is a needed change, to which attention must soon be paid, as shown by the way in which it is exercising the minds of so many officers."

M.S. "The military title which marks the rank of the medical officer in the army is now attached to the professional designation in the Army Medical Departments of several countries—in the military medical staffs of the United States, Russian, and Indian armies, for example, and we have no doubt the same system will be adopted in the British army before long. We are not aware of any valid objection to such an arrangement, while it seems to carry with it many practical advantages. *British Medical Journal* 1885; 1:129."