THE NEED FOR TRANSPORT FOR PATIENTS IN GENERAL PRACTICE - A STUDY AT THE NUFFIELD HEALTH CENTRE, WITNEY

by

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SUMMARY

An examination was made of the need in a group practice serving a semi-rural area for a transport service to carry to the main surgery, a health centre, selected patients who would otherwise have received a home visit. The possibility that such a service could bring attenders at the branch surgery five miles distant from the health centre into the centre and so permit the closure of the branch surgery, was also considered.

Data were collected over two periods of a month in 1968, on all direct contacts with patients with practice doctors and nurse. Information on public transport services and from the 1966 Sample Census was also used.

It was concluded that introducing a practice transport service to transfer selected consultations from the patients' homes to the main surgery would only save the doctors small amounts of time randomly distributed over their working week with no clearly established benefits accrueing to the patients concerned. Running such a service would not justify the cost involved. The closure of the branch surgery and its replacement by a bus service connecting the village and the main surgery twice a week would result in considerable extra expense to the practice though it would offer village patients without private cars more frequent opportunities to attend the surgery and a wider range of doctors to see in the surgery. It was recommended that the branch surgery should be retained and consideration given to using it more intensively.

Further research is however needed on a number of topics, for example -

1. The effects on the health and welfare of patients of their being seen in the surgery rather than at home.

2. Patients' attitudes to changes such as the use of transport services to transfer some home visits to the surgery, or as a substitute for one or more branch surgeries.

3. The scope for volunteers in providing transport for patients of general practitioners and related services outside the hospitals.

INTRODUCTION

This is the report of a study undertaken with the object of examining the scope for a transport service in a semi-rural practice based at a health centre in a small market town. It was taken for granted by the general practitioners working from the centre that a large proportion of the home visiting load was both necessary and desirable for the proper care of their patients. However, they felt that a certain amount of their home visiting was really a consequence of some of their patients finding it difficult or impossible for non medical reasons to make the journey to the centre and this was the stimulus for the study. The limited scale on which public transport was available between Witney and the surrounding areas was one presumed cause of this situation. A number of personal or family characteristics might also aggravate travel problems caused by inadequate public transport facilities - for example, old age, young children to look after, or the unavailability of the family car during surgery hours.

Sometimes a patient being visited in the home needed to attend the health centre for further examination or treatment. If the patient had difficulties in attending the surgery, then the doctor was faced with a dilemma of either doing what could be done in the home, or else relying on the patient to reach the health centre somehow. The practice also operated a branch surgery with limited facilities (especially when compared with those of the centre). Possibly a suitable transport service would eliminate the need for such a surgery - especially since once again those requiring treatment or examination of a kind that could best be done at the centre were already being asked to attend the centre. (A country practice in the north of England was using a practice bus service to bring patients in to a central surgery from areas previously served by several branch surgeries (Sowerby 1969).)

Thus a number of considerations ranging from saving the doctor's time to affording the patient the best medical attention which the comprehensive facilities at the centre could provide, motivated the doctors to look into the scope for a transport service to and from the centre for certain patients.

The study was mounted to assess the need for a transport service for patients in the practice, and indeed on the basis of the evidence gathered the general practitioners decided that it would not be worthwhile initiating such a service. It therefore differs from a number of other studies of transport in general practice which have been mostly concerned with appraising the effects of existing transport services. Our ground for reporting the present study in some detail is that it relates to a situation with which many principals must be faced when wondering whether to introduce a seemingly desirable innovation in their practice. In particular the study describes the methods used to answer the question in one practice, some of which may be of value to others faced with similar problems.

OBJECTIVES

To examine whether it would be appropriate to introduce a transport service in the group practice, based at the Nuffield Health Centre, Witney, to bring to the main surgery selected patients who would otherwise have received a home visit. (It was also in this context proposed to examine the role of the branch surgery.)

In particular it was proposed to collect for representative periods of time the following data -

1. the number of home visits which in the judgement of the general practitioners could have been dealt with equally or more effectively at surgeries, had suitable transport been available, and to estimate the time that would have been saved had attention instead been given to these cases in the health centre,

2. information for all direct contacts of patients with doctors of the practice and the practice nurse, on factors which might have affected the patient's ability to travel to the health centre surgery, and the doctor's freedom to determine the venue and time of the consultation,

and in particular,

3. the transport method, if any, used by the patient to reach the surgery.

To set these data in context, it was also proposed to investigate, using published and unpublished sources, characteristics of the area and population served by the practice which might have some bearing on transport problems.

THE PRACTICE AND ITS ENVIRONMENT

At the time of the study[1] the practice comprised six principals with one full-time practice nurse and full attachment of district nurses and health visitors. The group of six partners had been established for many years; none of the partners had been in single handed practice nor in a partnership elsewhere in the town or in the surrounding rural area. The health centre which was opened in 1966 was planned for a threefold purpose: to rehouse the general practitioners who had been operating from premises consisting of four consulting rooms only, to provide better premises for clinics held by the Health Department of the Oxfordshire County Council, and to provide the Oxford Regional Hospital Board with a diagnostic centre in the area and improved facilities for local clinics and outpatient sessions. The centre was financed by the Nuffield Provincial Hospitals Trust.[2]

The health centre is situated near the main shopping area of Witney. At the time of the study, in addition to the general practitioner accommodation the health centre had rooms for the district nurses and health visitors and a treatment room where the practice nurse worked. There was a dental suite of two surgeries and supporting rooms; treatment was limited to pre-school and school children; expectant and nursing mothers. The diagnostic unit run by the Oxford Regional Hospital Board consisted of a suite of consulting rooms, an X-ray department for simple X-rays (chests and cold orthopaedic), which was open to general practitioners two sessions a week, and a pathology laboratory able to do haematological investigations, staffed by a technician 15 hours a week. There was open access to the X-ray departments and pathology laboratories in Oxford 12 miles away for investigations not able to be done in the health centre. A fully staffed physiotherapy gymnasium was located in the centre under the direction of a local consultant in physical medicine.

Outpatient sessions were held regularly by consultants visiting from the Oxford hospitals in the following specialities: General Medicine, General Surgery, Chest Diseases, Neurology, Geriatrics, Gynaecology, Orthopaedics, Ophthalmology, Psychiatry and Physical Medicine. These clinics and all the

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[1] The main field work was undertaken in January/February 1968, and July/August 1968.

[2] An outline of the establishment of the health centre is given in the brochure Nuffield Health Centre Witney, published by the Oxford Regional Hospital Board.

diagnostic facilities were open to the patients of other practices in the surrounding districts. General practitioners were able to refer their patients directly to the outpatient clinics held in the health centre but they were unable to make direct referrals to the physiotherapy unit - patients first having to be seen by the physical medicine consultant. As the outpatient clinics held at the health centre were under the auspices of the hospital authorities, patients attending were eligible for ambulance or hospital car transport.

The practice population numbered about 18,000 people in 1968, nearly two-thirds of whom lived in the town and the remainder in the villages around, mostly within a radius of four miles but up to seven miles away in one direction. There was no other practice in the town (and indeed no other establishment offering medical services of any kind except chemists) and it was only on the perimeter of the practice area that there was any 'competition' for patients. Almost all the patients were National Health Service patients.

There was a branch surgery at Standlake, a village some five miles to the south of Witney (Map 1), which opened two mornings a week until April 1968 when the opening hours were reduced to only one morning per week. The Standlake premises were built in the early 1950's; however, for many years before that, the partnership had held surgeries in a private house in the village. There had never been more than two surgery sessions per week in Standlake.

The practice ran a full appointment system at the health centre but there was no appointment system at the branch surgery. At the centre, consulting sessions were held in the morning from 9 a.m. - 11 a.m., but they frequently ran on until later in the morning, and in the evening 4.30 p.m. - 6.30 p.m. Three of the doctors held antenatal clinics on Monday, Tuesday and Friday afternoons. Patients were encouraged to see their 'own' doctor whenever possible. A nurse had been employed in the practice for many years, but in the old surgery premises she only worked in the middle of the day when the normal surgery sessions were over and a consulting room was free. The provision of a treatment room in the health centre enabled her hours to be extended so that at the time of the study the nurse was in attendance at the health centre throughout the working week from 9.00 a.m. - 6.00 p.m., and 9.30 a.m. - 11.00 a.m. Saturdays. She did not visit patients or attend at the branch surgery. All 'casualties' at the health centre were directed

to the practice nurse in the first instance. Other patients also saw the nurse if they were uncertain whether they needed to see the doctor or if his appointment book was already full.

Some months before the start of the investigation it had become the rule that when a patient requested a home visit, the doctor concerned or a colleague tried, if possible, to speak to the patient to determine the need for such a visit. The doctors gained the impression that as a consequence the number of new visits had been about halved. Previously all requests for visits had been accepted by the receptionist without question. The patients who consequently did not receive a home visit would have either attended the surgery or else accepted advice offered by the doctor over the telephone. In the evenings and at weekends half the doctors were on call, each having the calls of one other doctor referred to him by the G.P.O. interception service. Over the weekend when a request for a visit was received, the patient was sometimes asked by the doctor on duty to meet him at the centre and so, as it were, a 'visit' took place in the surgery.

The doctors did not formally zone their visiting to specific areas of the practice. However, as four of the six partners lived in villages outside the town, there may have been some 'implicit' zoning on the part of the patients. For instance patients living in the same village as a doctor may have, over time, identified themselves with that particular doctor.

The members of the practice had a factory appointment, and staffed the infant welfare clinic run by the local authority. One partner acted as medical officer to a local authority Part III home and was G.P. to most of the inhabitants.

Witney is an old-established market town on the edge of the Cotswolds with a population at the time of the study of about 11,000. Few households were situated more than one mile from the health centre, but the busy A40 trunk road passes close to the centre of Witney dividing the residential area into two. Blanket mills provide some employment in the town, but the main employer is a factory making components for the motor industry. Large units of the motor industry and other employers in Oxford offer employment to those prepared to commute the 12-14 miles each way. There is also some agricultural employment in the area. The R.A.F. Transport Command base at Brize Norton lies on the perimeter of the practice and offers some civilian employment. There is a high level of car ownership in the area (see Page 18) and this is partly due to the proximity of the car industry at Oxford with its high wages and discount terms for employees.

THE DATA COLLECTING AND PROCESSING METHODS USED

The methods of data collection used were developed on the assumption that no specific resources would be available for fieldwork other than those which the practice and a distant university department could provide from their existing budgets and regular staff.[1] This effectively ruled out, for example, any kind of survey of a random sample of the practice population. Three sources of information suggested themselves:

1. The Registrar General's 1966 Sample Census could provide useful demographic background data about the area which included the practice population.
2. The timetables of the local bus company provided information on bus routes, the frequency of bus services along these routes and, of course, times of arrival and departure.
3. Data could be collected from or about patients as they were seen by members of the practice.

The use we have made of the first two sources of information will be clear from the subsequent text and tables, so that the rest of this section is devoted to a discussion of the data gathered about patients.

Data were collected by all the general practitioners plus the nurse of the practice for all[2] patients seen either at the health centre or the branch surgery or visited at home during two periods of four weeks, the first in January/February 1968, the second in July/August 1968. Three of the six partners were present for all eight weeks. Two were away for parts of the second period and a locum kept records while covering them for four weeks in all. One partner was on sabbatical leave during the first period and another locum recorded whilst covering his work. Thus,

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[1] At the analysis stage the study was incorporated into a programme of research at the University of Kent supported by the Department of Health and Social Security.

[2] No records were kept of 'indirect' contacts with patients such as telephone calls, requests for repeat prescriptions, nor for insurance or public service vehicle examinations, nor work arising from the factory appointment. Although the infant welfare clinics were done by members of the practice, as they officially come under the Medical Officer of Health they were not included. Antenatal Clinics were included. The consultations of the partner acting as Medical Officer to a Part III home, which related to patients registered with the practice, were included.

in each survey week, there were six doctors working. The nurse independently recorded data about all patients who attended her during the two periods. If a patient had seen a doctor and was referred to the nurse during the same surgery session, two separate consultations would have been recorded.

It will be observed that a study of this kind, based as it was on patients using the services of the practice during two periods of the year cannot be regarded as providing information about a random, let alone representative sample of the population. The more often a patient attended to see the doctor the more often or, at least, the more likely were data concerning him to be included in the study. Thus the data on consultations relate to a sample of patients biased towards more frequent users of the service. It gives a fair picture, however, of the users of the service in the sense that it relates to actual demand for care, and so, other things being equal, to potential demand for transport. It is of course a serious possibility that changing the practice arrangements so as to provide special transport would affect the nature of demand. Lance (1971) found in a survey of nine practices, however, that while the introduction of the transport service was associated with an increase in surgery work and a decrease in home visiting, the total workload remained fairly steady.

There were four main types of data recording forms: one type for the doctors' work in the health centre, one for their work at the branch surgery and one for their home visiting and a form for completion by the nurse. (Examples of the record forms and details of the information required appear in Appendix 1) If two or more patients were seen at one consultation, data were recorded for each one of them. The following items were standard on all forms: name[1] and address of patient, sex, age, marital status, diagnosis, type of attendance, the presence of children under five years in the family of the patient, the availability of a private car to the patient, the employment status of married woman, and lastly, the code number of the practitioner/nurse and the date of the consultation.

Additional information gathered at all surgery attendances (both health centre and branch) included transport used in attending the surgery, and the

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[1] not recorded on the cards to which the data were transferred for analysis

need for 'treatment'.[1] The nurse also recorded the origin of her patients - whether they had come direct or had been referred by a doctor. On the home visit forms assessments were made by the doctors about the degree of urgency of the visit, the necessity of the visit in terms of medical or social need, and if none, whether the patient could have attended the surgery if suitable transport had been available and the type of surgery services needed. Also a note was made of the times at which each visit, each visiting round and each surgery session began and ended.

The doctors and nurse recorded the necessary information about their sessions, rounds and patients seen as they were consulting (not necessarily filling in all the required details about a patient where these could be obtained from the record cards). The practice secretary (Mrs F. Bridge) and the doctor (P.G. Kay) who took responsibility for the organisation of the data collection, collected the records at the end of each day's work and checked them within 48 hours, filling in, where necessary, from patients' record cards, and checking the data for any missing items which would not be obtained elsewhere. Almost always they were able to recover the missing information by recourse to the doctor or nurse concerned, except sometimes in the case of times at which visits began and ended.

A pilot study to test the record keeping forms and arrangements was mounted a few months before the first main data collecting period. The doctors and nurse reported that once experience in filling in the forms had been gained they proved very quick to complete. One of the purposes of the pilot study was to secure as general an agreement as possible on the meaning of terms used and the criteria to be adopted in completing the records. In retrospect, however, it would have been helpful to define in writing more fully certain of the terms and systems of classification used - for example the meaning of 'treatment' and the 'type of consultation' classification.

Given that the data were more or less complete for the period of study there is the question of whether the forms were filled in accurately. There is no objective check for this. It was possible to eliminate certain gross errors and inconsistencies, e.g. a married five year old or pregnant male. The data obtained from the record cards would have been as correct as the

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[1] 'Treatment' was defined as the patient receiving something more than a consultation and a prescription (and of a kind which the nurse could undertake).

entries on these cards assuming that transcription was accurate.

Some of the data recorded were essentially subjective in character but many of the differences in the frequencies with which patients were assigned to certain categories by individual doctors would have been merely a reflection of variations in the characteristics of their patients. The data, as will be seen in the subsequent sections, appears generally plausible in character, and results fall in the ranges of comparable figures published for other practices.

METHODS USED IN ESTIMATING THE 1966 PRACTICE POPULATION

At the time of the study (1968) no precise data on the age/sex or geographical distribution of the practice population were available. The Office of Population Censuses and Surveys (henceforth abbreviated to OPCS - formerly known as the General Register Office) will however provide on request certain tabulations of the 1966 Sample Census for any enumeration district. An enumeration district is a small area defined on the 6" to 1 mile Ordnance Survey map, usually not more than ¼ sq mile in radius and with a population size ranging from 2,000 to 3,000 in towns to 100 or less in some rural parts.

The practice had a virtual monopoly in the town of Witney (Witney U.D.) and this was also the case in certain parts of the surrounding area within the Witney Rural District (Witney R.D.). Elsewhere, especially on the periphery of the practice area, there were localities where the population was 'shared' with other practices. The Witney doctors estimated the proportions of the population in these localities which were on their lists. The procedure then was to examine the maps of the 1966 Sample Census enumeration districts to identify the enumeration districts containing the localities where only part of the population was thought to attend the Witney doctors. To arrive at an estimated 1966 practice population we added together the estimated census populations[1] of the enumeration districts completely within the sphere of the Witney health centre, plus the proportionate parts of the population of the 'shared' enumeration districts based on the percentages given by the doctors.[2] For example, it was thought that in the localities of Brize Norton and Lew, 10 per cent of the population was

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[1] The 1966 census was not a complete enumeration of all the people in England and Wales but a 10 per cent sample of the population of each local authority. If the sample figure for a particular category is less than a quarter of the whole sample population, then the Registrar General advises that the 'standard error' of the sample figure is approximately its own square root. For example, the estimated sample population of the Witney R.D. who were over 60 was 3,89. (The sample population for the whole local authority was 27,24). The standard error of this figure is $\sqrt{3,89}$ or 19.7 approximately. So there are odds of 19 to one that the correct population total lies within the range (3,89 $\pm$ 2 x 19.7) x 10 or approximately 3,500 to 4,300.
Source: Sample Census 1966, County Report, Oxfordshire p.viii

[2] In this report all tables using the 1966 data have had noughts added to the figures to enable a quicker recognition of the overall picture.

registered with Witney. Thus since these two localities each comprised individual enumeration districts, 10 per cent of their estimated population was included into the 1966 practice population. When doing this, we assumed that the patients of the practice in an enumeration district, in which the practice did not have a monopoly, were typical of the enumeration district as a whole. (Table 1 gives the enumeration districts and the estimated proportions of the population on the doctors' lists. Witney town has not been divided into enumeration districts as it is a fairly compact area.)

The 16 enumeration districts contributing to the practice population outside the Witney U.D. are referred to geographically as the Rural Practice Area throughout the report and the estimated practice population within the enumeration districts will be known as the (estimated) Rural Practice Population. When the Witney U.D. estimated population is added in, the combined figure equals the (estimated) Total Practice Population. For convenience the 16 enumeration districts have been grouped into 11 Study Areas, corresponding to the physical distribution of the rural population, and each Study Area is identified in the report by a name. The name is usually that of the best known village or locality within the Study Area. Table 1 identifies the Study Areas names used in the analysis. (See also Map 1.)

Clearly the above method of estimating the 1966 practice population and plotting its geographical concentration is subject to error from two sources. First there are the doctors' impressionistic estimates of the proportions of persons in the Study Areas who were patients of the Witney practice. For example it can be argued that the doctors would base their estimates intuitively on the numbers of patients they had seen, so they may have ignored patients on their lists who either rarely use their services because they are infrequently ill or use self medication, or are ill but through lack of transport are unable to reach the surgery and are unwilling to call the doctor in. Only a census as part of this study would have fully answered these questions. The effect of this source of error is not as bad as it looks at first sight since the great majority of the patients, even of those outside Witney town, lived in areas in which effectively all the respondents were registered with the Witney practice. Identifying such areas seems, intuitively speaking, to be less likely to be the subject of error.

However, there is a second problem of the character of the Sample Census itself, since the sampling method used meant that in small sparsely populated areas the proportion of the population enumerated in the census

may have been far from the overall figure of 10 per cent obtained for the Local Authority Area as a whole (and proportions of, for example, the elderly in these sub populations may have been similarly distorted, though not generally in a systematic way). For this reason we have usually amalgamated the Study Areas in the Rural Practice Area into three relatively large blocks for which the risk of error remains, although its proportionate magnitude, because of the 'swings and roundabouts' effect, is likely to be reduced. Where we do make statements about individual Study Areas these should be taken merely as indications of general orders of magnitude.

As will be seen (Page 14) the one objective, if limited, check we have on the methods described in this section - namely a comparison between the estimate of the practice population using these methods with that provided by the Executive Council - was encouraging.

INFERENCES CONCERNING THE DISTRIBUTION AND CHARACTER OF THE PRACTICE POPULATION

It has been assumed that the practice population in 1966 was reasonably close in character but not in magnitude to that of 1968 and the 1971 Census data support this assertion. All the remarks that follow, unless otherwise indicated thus relate to the situation as it was in 1966.

i. Practice population size and geographical distribution

The estimated total practice population in 1966 numbered 16,330 of which 9,800 or 60.0 per cent came from Witney town and the remainder from the surrounding area. This figure compared well with the Executive Council's July 1966 figure for the practice list of 16,242. Within the Witney Urban District the total population rose to 12,550 in 1971 representing an overall increase of 28.1 per cent. The 1968 population for the Witney U.D. has been estimated (based on the assumption of a constant annual increase over the inter-censual period) at 10,910 and if a similar growth rate existed in the surrounding rural areas, then it would be reasonable to assume that the 1968 practice population would have been in the vicinity of 18,000 persons - the number of patients recorded by the Executive Council, July 1968, was 17,585 but the doctors felt that this figure was conservative in view of the very rapid influx of patients into the town at that time. This was both a consequence of in-migration to the area (predominantly young married couples) and of the high birth rate in Witney U.D. and Witney R.D.[1] (associated with, as we shall see, a relatively large and expanding young adult population).

None of the rural[2] Study Areas contained more than eight per cent of the practice population in 1966 (Table 1 and Map 1). Those areas with a proportion of the practice population of five per cent or more were Hailey, Ducklington and North Leigh. Five areas were very small (with an estimated 2.5 per cent or less of the practice population). Standlake, the area in

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[1] The Witney U.D. crude birth rate per 1,000 population between 1965 and 1969 rose from 15.4 to 20.4. The 1969 Witney U.D. adjusted birth rate was 14 per cent higher than the rate for England and Wales, while the Witney R.D. adjusted birth rate exceeded the national rate by 11 per cent. The Registrar General's Statistical Review of England and Wales Part 1, 1965 to 1969

[2] Rural refers to the area outside the Witney Urban District. Urban refers to areas within the Witney Urban District.

which the branch surgery was located, appeared to have slightly less than five per cent of the practice population.

ii. Age and sex distribution

In both the town and rural part of the practice there were relatively few persons over the age of 60 (12.4 per cent Witney U.D., 12.5 per cent rural practice area) compared with the population of England and Wales as a whole (18.2 per cent), and a relatively high proportion of persons under 20 years of age (Witney U.D. 35.9 per cent, rural practice area 34.4 per cent and England and Wales 30.8 per cent) (Table 2). Males slightly outnumbered females in the practice population (50.7 per cent to 49.3 per cent compared to the national figure of males 48.5 per cent, females 51.5 per cent). This was largely accounted for by a very definite excess of males in the rural practice area, although the excess was also in evidence in the under 20 age group in Witney town.

The estimated 1968 figures for Witney U.D. based on the inter-censual increase between 1966 and 1971, suggested that there had been an increase in the proportion of adults over 60 years particularly males in the town, although this increase may well have been offset in the remainder of the practice area by a fall in proportion of over 60's in the Rural District over the same period. There were no significant changes in the composition of the other major age/sex groups (Table 2).

iii. Households with persons of pensionable age

Persons aged 60 years or more are relatively high users of medical services, so households comprised solely of persons of pensionable age could be considered to constitute a group with higher potential demands (for visits or transport to the surgery) compared with households with younger membership. Overall, in the rural practice area only just over half of all pensionable persons were resident in one or two person households compared with more than two-thirds in the Urban District, Witney R.D. (as a whole) and England and Wales.

iv. Marital status

The single or widowed elderly may be particularly isolated. Moreover recent research has shown differential usage rates of medical services for persons of differing marital status (Butler 1973).

There was a wide divergence from the national figures amongst the Witney 'ever married' females (Table 3). In the total practice population 7.1 per cent of the females were widowed or divorced compared to the national figure of 11.6 per cent. The rural practice area rate of 3.9 per cent was particularly low. The in-migration of young single/married people would mask the relatively static numbers of elderly widowed persons in the community. The marital status distribution for males in the Witney practice area was similar to that of England and Wales.

v. Social class of males

The practice did not differ much from the country as a whole in its social class distribution except for a relative excess of men in social class IV (partly skilled occupations). There was however a more noticeable difference between Witney U.D. and Witney R.D. The Witney U.D. (53.7 per cent) had a far higher proportion of its employed males in class III than the rural practice area (41.7 per cent), with corresponding relative deficits in all other classes.

vi. Married women in the work force

Women working in Witney would probably be in an advantageous position to attend the surgery during the working day. In 1966 the proportion of married women in the practice area who were working was nearly two per cent greater than the national per cent of 38.5, but between the urban and rural sectors of the practice there was a wide divergence; 45.0 per cent of all married women in Witney U.D. worked compared to only 32.8 per cent in the rural practice population.

vii. Place of employment

Where people work may have some bearing on the question of how easy it is for patients to travel to the health centre during normal surgery hours particularly as the Witney shopping and commercial centre and many of the manufacturing units were located close to the health centre. (One

industrial estate was some two miles away on the outer perimeter of the town.) About two-thirds of the employed residents of Witney U.D. worked in town itself, although the rates were higher for women than men. Almost 40 per cent of Witney's employed males travelled out of town to work - 13.4 per cent to Oxford (12-14 miles away) and 21.2 per cent in the Witney R.D. Witney women were much more likely to work in the town(82.9 per cent) and the remainder were employed either in Oxford (4.6 per cent) or Witney R.D. (10.3 per cent). Data about the place of employment of residents in the rural practice area was not obtainable but it suffices to say that of the total employed population resident in the Witney Rural District, 55.6 per cent worked within the R.D., 14.6 per cent in Witney town (a higher rate for women than men) and 21.4 per cent travelled to Oxford. Finally of the total population working in the Witney U.D. area (5,670) 43.2 per cent (2,450) were resident outside the town thus representing a considerable amount of daily immigration and possible demands on the emergency services of the health centre particularly the treatment room.

The significance of place of employment is based on the assumption that people in employment are usually at work on the day that they attend the doctor and so will tend either to call at the surgery on the way to or from work, or make a special journey from work for this purpose. Even if patients go home before coming to the surgery the distance travelled from work is relevant to the timing of the attendance.

viii. Transport to work

Transport-to-work methods of the total practice population differed markedly from the pattern for England and Wales in 1966, (Table 4). The practice population were much more likely to drive, walk or cycle to work and public transport was little used. However the rural practice workers were more dependent upon vehicles either publically or privately owned than the urban dwellers over half of whom walked to work compared with fewer than one quarter of the rural residents. The fact that almost 45 per cent of the rural practice workers travelled by car raises two questions; firstly was there a high level of car ownership in the rural practice area, and secondly, did this mean that many families were deprived of the use of the car during the day and so were forced to use public transport - an alternative possibility was that the rural households had a high rate of multiple car ownership.

ix. Car ownership

Car ownership was noticeably more common in the practice area (in both urban and rural sectors) than in the South Eastern Region (excluding Greater London and the Outer Metropolitan Area) or in England and Wales where more than half of the households were without private cars. The proportion of carless households in the total practice population was 36.8 per cent (Table 5). Cars were even more ubiquitous among the rural practice households than those of Witney town - 17.7 per cent of rural households owned more than one car. The corresponding Witney U.D. figure was 5.5 per cent. As the proportion of households with one car was the same in both areas (almost 53 per cent), this meant that only 29.1 per cent of households in the rural practice population were carless compared to 41.6 per cent in Witney town. The high degree of car ownership in the rural practice population was reflected in the methods of transport used by these patients to travel to the surgery - a topic to be examined in a later section.

Summary

The practice population in 1966 was estimated as being just over 16,000 of which about 40 per cent lived outside the town of Witney. The practice area had a relatively youthful population which was reflected in the high birth rate and below national rates of households comprised of persons of pensionable age, and females who were widowed or divorced. The social class distribution of males closely resembled that for England and Wales, and the rate of employment among the married women was also comparable; although within the practice area, urban married women were more likely to be employed than their rural counterparts. Thus there was no reason to anticipate the character and magnitude of the Witney doctors' consultation load as being markedly different from figures obtained in similar practice environments. We might suspect however that the relative youthfulness of the practice population would result in correspondingly low contact rates.

Turning now to the specific question of the demand for transport by the patients, the 1966 Sample Census does provide some indicators. Witney was the source of employment for a work force nearly twice the size of its own locally employed population thus probably drawing into the town in working hours (and to within relatively easy reach of the health centre) many of the patients of the practice, especially women in employment. There was a strong

tendency particularly in the rural practice area for residents to use private cars to go to work, and although there was a high level of car ownership (noticeably two car rural households) it was likely that many women at home with children were without the use of the family car during working hours.

PUBLIC TRANSPORT SERVICES IN THE PRACTICE AREA

A bus journey from a village to the surgery at Witney and return, even in an area enjoying a regular bus service, can be quite an undertaking, often involving a walk from home to the bus stop of a mile or more, plus a wait at the stop for a bus, a journey of about 20 minutes or so in the bus to Witney, a walk from the bus stop to the centre; and this whole journey has to be repeated in reverse when returning home. Making such a journey when one feels unwell or is accompanying a sick child must be exhausting and perhaps in winter very unpleasant. The situation in those areas with less adequate bus services will of course be even worse. It would be a question of a major expedition often taking four or more hours - given the infrequency of the buses.

At the time of the study, the practice area was served for the purposes of travel to and from Witney almost exclusively by the City of Oxford Motor Services. There were no rail services in the area and only one other bus company provided a limited regular service. A study was made of the City of Oxford Motor Services timetable,[1] effective in the period 1965-66, (and with small alterations thereafter until 1971) covering Witney and the areas served by the practice within Witney Rural District. Examination of the urban bus services was not considered necessary as there were frequent buses travelling the four main arterial roads leading out of the town. Table 6 shows for each of the Study Areas :

(a) the general level of bus services as indicated by the approximate numbers of round trips of buses provided each day. We were interested in round trips from the area in question to Witney and back not vice versa, though in fact many of the bus services appeared to be organised more on the latter basis, in other words, for those travelling from Witney and returning back,

(b) the extent to which buses were available to and from Witney at times more or less convenient for surgery sessions (see Map 2). The criteria used was; for a morning surgery a bus should arrive at Witney between 8.45 a.m. and 10.45 a.m. and return to the patient's origin by 1.00 p.m. The times of arrival at Witney for the afternoon session were between 1.30 p.m. and 3.30 p.m. with a bus returning home to arrive before 5.30 p.m.; and for the

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[1] The City of Oxford Motor Services Limited Bus Timetable, 13th June 1965

evening surgery, arrival in Witney had to fall between 4.00 p.m. and 6.00 p.m. and the return to the home bus stop occurring before 7.30 p.m. If a bus was scheduled to arrive at a place a few minutes outside the time range then it would have been included,

(c) the approximate duration of the bus journey from the pick up point(s) in the Study Area to arrival at Witney,

(d) the walking distance to the nearest bus stop serving the Study Area (Since the area was often quite large, approximate upper and lower limits are usually given.),

(e) the road distance in miles from the Study Area to the health centre. Once again, since the area might be one to two miles in width we have usually given upper and lower limits to this distance.

A study of the data revealed that the total practice area (Tables 1 and 6) could be sub-divided into five groups according to the frequency of bus services linking individual Study Areas with health centre surgery sessions (see Map 2). The groups are :

1. Witney U.D. with 9,800 patients all living within a mile of the health centre and generally well served by bus.

2. Standlake, about five miles from the health centre and with virtually no bus services to Witney but served by a branch surgery. The estimated 1966 population was 760 almost all of whom were thought to be registered with the Witney practice.

3. Group 1, comprising the Study Areas of North Leigh and Curbridge which were on major bus routes with regular services to and from Witney at all times of the day. The estimated 1966 practice population was 1,650.

4. Group 2, the Study Areas of Hailey, Ducklington, Minster Lovell and Ramsden linked by bus to all morning surgeries but with irregular and infrequent services in the afternoon and early evening bus schedules. (Minster Lovell was exceptional as patients had to walk up to one and a half miles to a major road with frequent services.) The estimated 1966 practice population for group 2 was 3,180.

5. Group 3, consisting of those Study Areas (Crawley, South Leigh, Stanton Harcourt and Aston) where public transport served only one to three morning surgery sessions weekly and there were virtually no other suitable bus

services to and from Witney. These areas were also relatively remote from the branch surgery at Standlake. Only a small proportion of the total population of Stanton Harcourt and Aston were assessed as being registered with the Witney practice, thus the group 3 1966 estimated practice population was 940.

The afternoon surgery sessions at the health centre were usually antenatal clinics held on Mondays, Tuesdays and Fridays during the survey period. These were sessions at which many patients would have been accompanied by young children. The group 2 Study Areas including Hailey with the largest 1966 practice population of any area outside Witney town, had few suitable bus services on these afternoons. The frequency of services on Thursdays was easily explained; Thursday is Witney's market day.

The question arises as to whether some of the more peripheral parts of the Witney practice area would have been better served by buses linking surgeries other than the Witney health centre or branch surgery. Surgeries of the adjacent practices were located in townships on arterial roads leading from Witney - at Long Handborough on the Woodstock Road, Eynsham on the Oxford road, Bampton enroute to Swindon, Burford close to the A40 leading to Cheltenham, and Charlbury on the road north to Banbury. Distances to these other practices' surgeries would have been shorter for respondents in some areas which the Witney practice served - a fact reflected in the small proportions in some areas which were registered with the Witney doctors. In particular, for parts of Stanton Harcourt the Eynsham surgery would have been nearer, and for parts of Aston and Curbridge the Bampton surgery or that practice's branch surgery in Carterton would have been closer. In all these cases patients would still have been at least one and a half miles from the nearest surgery. However, the bus services for these areas were channelled through Witney so that the problem of infrequent services would not have been solved.

Postscript

The Witney district bus services were revised at the end of 1971.[1] This revision included rerouting, retimetabling and the inclusion of additional services on some routes. The overall effect has been to provide almost all Study Areas with comprehensive public transport reasonably convenient for all surgery sessions. Standlake and Stanton Harcourt are however now totally isolated from the Witney health centre; both districts are at a minimum of one and a half miles from frequent bus services.

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[1] Oxford South Midland Timetable of Country Services Commencing 14th November

SOME CHARACTERISTICS OF THE DIRECT[1] CONSULTING WORK LOAD OF THE PRACTICE

Introduction

In this section we examine the work load of the practice over two periods - four weeks in January/February 1968 and four weeks in July/August 1968. Our purpose is firstly to consider how typical the practice was in comparison with others for which comparable data on work load were available. Secondly, we shall examine the characteristics of the work load including its distribution between the health centre, branch surgery and the homes of patients, and its distribution over time, to see what scope there might be for redistribution by such devices as a transport service. The key part of this second element will be an examination of the data on the doctors' assessment of the necessity for the home visits made. We shall be particularly concerned with the extent to which 'unnecessary'[2] visits were associated with particular age and sex groups and with the nature of such 'unnecessary' consultations.

The central theme of this section is a consideration of the scope for moving some of the work load of the practice from the homes of patients (and from the branch surgery) into the health centre by use of transport facilities of some kind, but in the context of the control of work load generally between locations and over time. This is because, if it should appear there is a case for providing transport to the health centre, we will want to know, for example, whether or not this was on all days of the week. Also we will want to know to what extent the transport services would be dealing with repeat (largely doctor initiated) consultations, and therefore could be scheduled in advance. The nature and magnitude of the work of the branch surgery is relevant because since it is used for only one or two sessions per week, it could, in principle, be replaced by sending transport out to bring the patients in to the doctor at the health centre.

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[1] Throughout this report in the body of the text, consultation or contact (without qualification) is used to describe a direct contact between the patient and the doctors or nurse. No reference is made to indirect consultations such as those conducted over the telephone.

[2] An 'unnecessary' visit was taken to be one made to a patient where the doctor considered that there was no medical or social reason why the patient should not have attended surgery.

The distribution of consultations between the health centre and branch surgery and patients' homes

During the eight weeks of the study 9,445 patients were seen by the doctors or practice nurse. Of these 1,906 (20.2 per cent) were seen at home, 146 (1.6 per cent) at the branch surgery and the remainder (78.3 per cent)at the health centre. Among the latter the nurse saw 1,182 patients (16.0 per cent of those attending the centre) (Table 7). Thus in this six principal practice the nurse saw about as many patients in the health centre in the period as did the 'average' doctor in the firm.

If the two months of the study are regarded as being together typical of the year, the following rates emerge. A total consultation rate of 3.5 contacts per registered patient per year made up of a surgery attendance rate of 2.8 contacts per registered patient per year and a home visiting rate of 0.7 contacts per registered patient per year. These contact rates include all consultations with the doctors and the practice nurse.[1] If contacts with the nurse (0.4 per patient per year) are excluded the total contact rate for the doctors is seen to be 3.1 per patient per year. The corresponding surgery attendance rate (to the doctors) is 2.4. The rate of 3.1 contacts per patient for the doctors is relatively low in comparison with the 17 rates drawn from various studies from England and Wales quoted in the Royal College of General Practitioners (1970). The median of these rates was 3.8 contacts per patient per year and the lowest rate 3.0.

In the present study the ratio of surgery consultations to home visits is 4.0 if the nurse's work is included, and 3.3 if it is excluded. The doctors' ratio is somewhat larger than the median of 3.0, for 16 general practitioner studies mentioned by the Royal College of General Practitioners (1970). Marsh et al (1972) also found that the average figure for 190 general practitioners in north east England during two weeks late in 1969 was 3.0.

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[1] It will be recalled that the nurse worked only at the health centre. 246 (20.8 per cent) of the nurse consultations were with patients who had also seen a doctor of the practice during the same attendance at the centre and had been referred on that occasion to the nurse. In this section the encounter with the doctor and that which followed with the nurse are counted as separate consultations.

Williams, (1970) surveyed 68 doctors in South Wales 1965-66 and the average ratio was 3.7 but here the greatest demand for home visiting came from the rural and country town practices each with ratios of about 3.4. Binnie (1970) found in his rural practice area located close to Berwick-on-Tweed, Northumberland, that the surgery consultation/visit ratio was 2.2, while at the other end of the scale Morrell et al (1970) in their three-man practice in Lambeth had a ratio of approximately 9.2 (for direct contacts only).

Thus it would appear on the evidence available that the contact rate with the doctors in the practice was relatively low though it seems likely that the nurse carried a larger part of the work in the practice than was the case for the nurses (if any) in the practices with which we have been comparing Witney. Again the moderately large surgery/home visit ratio for this semi rural area does not, on the basis of it, suggest that the number of 'unnecessary' home visits paid by the practice was in excess of those made by other doctors for which data on this ratio are available. The relative lightness of the load and its concentration within the surgery may be a consequence of the practice's patients being rather younger on average than those in the country as a whole, and of the screening of visit requests.

The distribution of contacts by age and sex

i. All contacts including those of the nurse

Females were estimated to constitute 49 per cent of the practice population in 1966. However, they 'consumed' 58.1 per cent of the consultations. When the consultation load was analysed by age, females turned out to be more numerous in each age group, except the under twenties (Table 7). Women in the main child bearing ages, 20-39 years (in this young practice population with correspondingly high crude birth rate) made particularly heavy demands on the practice in terms of the volume of consultations, accounting for more than 20 per cent of all contacts (i.e. nearly double the percentage of women of these ages as a proportion in the total practice population). Moreover contacts with children aged less than 10 years (which made up 14.7 per cent of the total volume of consultations) would usually have involved their mothers who would mostly have been in the 20-39 age group. Thus women in this age group were involved as patients or parents in well over a third of all the consultations in the practice. 20.7 per cent of contacts related to patients over 60 years of age in the

practice - in this group demands from women again predominated but here because ofthe relatively high proportion of elderly who were female.

Hopkins (1968) in Liverpool found that the heavy work load caused by elderly patients was mainly due to women because they comprised the greater part of the elderly population. Women 20-60 years had more surgery and visits consultations than men for the same age and this was found to be not merely due to obstetric problems (see also Baker, 1966).

ii. Seeing the doctor in the health centre

Almost 60 per cent of contacts were with female patients and indeed women aged 20-39 years alone accounted for a quarter of the surgery consultations (Table 7). The over 60's contribution to the number of surgery consultations with the doctor at the health centre was approximately in proportion to the number in the population served. The volume of consultations arising from children under 10 was about the same as that of the over 60's though in this age group only, males were more numerous than females.

iii. Seeing the nurse at the health centre

In contrast to the doctors, the nurse saw more males than females. This was particularly the case for the 0-19 age group (and largely accounted for by an apparently higher incidence of minor accidents among young males). Indeed, generally males receiving attention at the health centre were slightly more likely to see the nurse than females (19.7 per cent of male contacts at the health centre were with the nurse compared with 13.2 per cent for females), and in the case of boys aged 10-19, for every two surgery consultations with the doctors, one consultation was made with the nurse. In contrast, for girls in this age group the contact rate in the surgery was one consultation with the nurse to five with the doctors (Table 7). Among the over 60's, nearly twice as many nurse contacts were with women as with men, again a reflection of the imbalance between the sexes in the elderly population.

iv. Home visits

Children under the age of 10 (boys slightly more than girls) and the over 60's were the main consumers of home visits. The latter age group, although constituting only 12.5 per cent of the practice population, absorbed

over 40 per cent of the home visits (women over 70 taking nearly half of these) (Table 7). Children under 10 absorbed 19.1 per cent of the home visits. In both the young and the elderly age groups, the sex difference in the number of home visits appeared to be a reflection of the different proportions of males and females in the practice population, rather than a consequence of demand being sex related. Broadly speaking, it can be seen that for persons over the age of 70, consultations most often took place in the home. For all other age groups, the numbers of home visits (for males and females) made up less than 30 per cent of the contacts with doctors or nurse.

v. Seeing the doctor at the branch surgery

The branch surgery accounted for only a minute proportion of the contacts with the doctors (1.6 per cent) but, such contacts displayed much the same characteristics as regards their age/sex distribution as those with the doctors in the health centre surgery - though there was some slight suggestion that the elderly formed a higher proportion of the attenders in the branch surgery (Table 7).

vi. Who were the high users of the doctors' services?

We have identified three groups of high users as measured by the number of consultations they generated for the practice served - the over 60's, children under 10 years and women aged 20-39 years. The first two groups between them gave rise to almost two thirds of the home visits and it seems reasonable to suppose that for one reason or another we may expect to find a high proportion of 'unnecessary' home visits concentrated in these age groups. In the case of women aged 20-39 years, their contacts with the practice nearly all took place in the surgery - though of course members of the group would be associated with most of the home visits paid to children under 10 years of age.

Comparisons between the results for the winter and summer recording periods

Overall, 54.4 per cent of all the consultations recorded took place in the winter months; nearly two thirds of the home visits took place then (Table 11). (Morrell et al (1970) reported that in Lambeth during the winter a greater proportion of consultations took place in the home.) Consultations in the health centre with the doctors were slightly more numerous in the winter than the summer. The reverse was the case, however, for the nurse.

(Perhaps minor accidents are more common in school holiday periods.) The fairly noticeable drop in the numbers seen at the branch surgery in the summer is explained by the fact that during the winter study period it was open two mornings a week but only for one morning per week in the summer period. This reduction had been under consideration for some time and had nothing to do with the study. The reason for the reduction was a feeling that patients could be seen more effectively in the health centre. Looking at the four weekly totals of consultations in each of the winter and summer recording periods, it appears that the doctors' consulting load was remarkably constant within each month of recording - both in the case of home visits and surgery consultations. The nurse's weekly consulting numbers showed somewhat greater variation in the winter months.

The general consistency within the winter and summer recording periods confirmed by the doctors' general impressions, gives us some confidence that our results were not affected by any dramatically atypical events in the life of the practice.

Diagnostic[1] distribution of consultations

The diagnostic category most frequently recorded by the doctor was respiratory disease (24.8 per cent) followed by bones (9.9 per cent), genito-urinary (8.2 per cent) and circulatory disease (8.2 per cent) (Table 8). Comparing the Witney doctors' distribution with those from several other studies (see Table 9) the following conclusions emerge. The proportion of consultations at the Witney practice classified in a diagnostic sense as 'bones' and genito-urinary disease was relatively high while the proportion of consultations described as relating to mental disorder was relatively low. In the case of the other relatively frequent diagnoses - respiratory disease, 'skin', circulatory and digestive disorders, Witney was about 'average' in relation to the other reported figures from general practices.

The surgery consultations of the doctors not surprisingly by virtue of their predominating number, showed the same diagnostic distribution as that in the overall consulting load. The branch surgery results were broadly similar to those for the health centre. More than one third of home visits

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[1] The diagnosis recorded was the main one pertaining to the consultation.

were in respect of respiratory complaints and about one in eight were described as relating to circulatory disorders. Predictably, communicable disease was much more in evidence among home visits than was the case for surgery consultations, likewise digestive and neoplasmic complaints. By contrast, mental illness, 'bones', 'skin' and genito-urinary classifications were relatively infrequently used as a diagnosis in the case of home visits. The nurse's work showed a somewhat different diagnostic pattern to that of the doctors. Sixty nine per cent of her workload was associated with minor trauma - 38.0 per cent on 'skin', 20.6 per cent accidents and 10.4 per cent bones.

In the winter period there was predictably a great deal more respiratory disease in the doctors' work at all sites, but especially in the case of home visiting. Communicable disease was also in greater evidence in the winter. On the other hand symptomatic ailments, accidents and 'other' conditions were commoner in the summer period Among home visits circulatory disease was relatively twice as common in summer as it was in winter. (Table 10 gives the seasonal diagnostic distribution for the doctors' total load.) Accidents accounted for 28.5 per cent of the nurse's summer case load but only 12.0 per cent of her winter load; by contrast 'bones' and 'skin' and respiratory disease were somewhat more common among her winter contacts (Table 10). The reasonably predictable differences between the winter and summer diagnostic recordings reinforced our confidence in the representative character of the data collected.

The distribution of consultations over the days of the week

Overall, Monday was easily the busiest day (23.3 per cent of all consultations took place then) followed by Tuesday and Friday (on each day 19.0 per cent of the total consultations took place) and Wednesday (17.0 per cent). Thursday, the market day at Witney, was relatively quiet (13.3 per cent) - it was the half day off for two of the principals of the practice. The weekend accounted for 8.3 per cent of the practice's total load of consultation work. The pattern was broadly similar in the winter and summer, except that relatively fewer patients were seen on Fridays and over the weekend in summer. (This could only in small part be explained by the branch surgery not being open on Fridays in the summer) (Table 11).

i. Consultations at the health centre with the doctors

These followed precisely the pattern for all types of consultation described above (see Table 11).

ii. Consultations at the health centre with the nurse

The practice nurse held sessions daily - the pattern in her work load was similar to that of the doctors. Mondays and Fridays tended to be the busiest in winter while Wednesday replaced Friday as the second busiest day in the summer. However her work was more evenly distributed over the week in the summer than in the winter. She was, on Saturday mornings, in both recording sessions, generally carrying about half the normal full weekday load (Table 11).

iii. Distribution of home visits over the days of the week

In winter and summer, Mondays and Tuesdays were about equal as the busiest days (18 - 20 per cent of the visits occurred on each of these days). The other week days were very similar to one another in their home visiting loads (Table 11). Weekend (Saturday and Sunday combined) visits in winter were as numerous as those occurring on a Monday or Tuesday. In summer, the weekend visiting load was relatively smaller but still as large as that observed on one of the less busy days of the week (Wednesdays, Thursdays, Fridays).

Thus it appears that the heaviest days for home visiting (Mondays and Tuesdays) were also the heaviest days for the doctors at the health centre, and Monday was the nurse's busiest day. Bringing home visits into the health centre would therefore increase the load on that building especially on Mondays - if patients were to be seen on the days that they would have been visited. This raises the question of the distribution of consultations according to type, as many acute and chronic return consultations can in principle be scheduled to take place on the less busy days of the week, Before proceeding to an examination of this matter we consider the results for individual doctors.

Results for individual doctors

i. Participation of the doctors in the survey

Eight doctors participated in the survey. Six of these, labelled 1-6 respectively, were the principals of the practice and 7 and 8 were locums. Doctor 7 took over the work of doctor 3 in the winter recording session whilst the latter was on sabbatical leave. Doctor 7 did not work for the practice in the summer recording session. Doctor 8 helped the practice

in the summer session, primarily to cover the two doctors (2 and 4) who were on leave for consecutive fortnights of this period. Doctor 8 also did a small quantity of work (covering doctor 6) on the last day of the winter recording session. Doctors 1, 5 and, for all practical purposes, 6 were on duty throughout both recording sessions (though doctor 1 , the most senior doctor, appeared to have a relatively low volume of consultations).

ii. Overall work load distribution

Doctors 5 and 6 between them saw over 43 per cent of the patients seen by the doctors of the practice (including locums) in the recording periods, though the heaviness of their loads was partly explained by the fact that they worked throughout the two months in question (Table 12). The average weekly number of patients they saw were 230 and 218 respectively, so their loads were nearly a third greater than that of their colleague with the next largest load. In the case of doctor 4 (a woman) 86.8 per cent of the patients she saw were female. Doctor 6, especially in the surgery, also saw a rather above average proportion of females (65.3 per cent of all his consultations were with women as compared with 58.1 per cent for the practice as a whole).

Doctors 1, 2 and 3 (and 7 who was standing in for 3) all had a relatively high proportion of patients aged 60 or more and conversely, young patients (under 20 years) comprised a significant proportion of the contacts seen by doctors 4, 5, 6 and 8. One reason for this, other than the length of time in the practice for the doctors involved (doctors are numbered in order of seniority) was that doctors 1, 3 and 7 did not undertake obstetric or gynaecological work.

iii. The distribution of work between surgery consultations and home visiting

The pattern observed above for the total volume of consulting undertaken by individual doctors was also in evidence when surgery consultations and home visits were considered separately - that is, doctors 5 and 6 reported high levels of consulting in the surgery and at home and likewise the elderly were more in evidence among the patients seen by doctors 1, 2, 3 and 7 than was the case for other doctors both in their surgery work and home visiting. The proportion of consultations which took place at the surgery (including, in the case of doctors 3 and 7, the branch surgery) ranged from 68.3 per cent in the case of doctor 1 to 93.7 per cent in the case of doctor 8 (whose patients tended to be visited by the regular doctors).

If doctors 1 and 8 are excluded the corresponding range for the other doctors is quite narrow (74.2 per cent to 80.4 per cent).

Distribution of consultations according to type - i.e. whether new, acute return or chronic return[1]

i. General

In this section, consultations concerned with pregnancy - which constituted 11.8, 8.3 and 15.5 per cent respectively of the consulting loads of doctors 4, 5 and 6, but effectively none of that of doctors 1, 2, 3 and 7 and the nurse - are excluded. Overall (for all practice contacts) 48.8 per cent of consultations were classified as new. The remainder were almost equally divided between acute return and chronic return cases (Table 13). Thus far we have included the nurse's work in the overall figures. She classified 52.3 per cent of her consultations as new, 20.8 per cent as acute return and 26.9 per cent as chronic return.

Of the doctor only contacts at all sites 48.3 per cent were classified as new, 24.8 per cent as acute return and 26.9 per cent as chronic return. A rather higher proportion of home visits were new than was the case for surgery consultations, 53.3 per cent compared with 46.7 per cent, but otherwise the division of the work was very similar. In the branch surgery, chronic returns were almost as common as new consultations (at the expense of acute return numbers) though this may be as much a characteristic of doctor 7's approach to classifying contacts as differences due to the character of patients presenting. Note that since these two doctors (3 and 7 sharing the same patients' list across the two recording periods) did not accept obstetric or gynaecology patients, such women patients would have had to travel to the health centre rather than attend the branch surgery, although three such consultations were recorded at the branch surgery.

Because of variations as to what is included as a consultation in the analysis of work by type and, indeed, in the interpretation of the 'type of consultation' classification, it is exceptionally difficult to make

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[1] A consultation was classified as an acute return if the main reason for the consultation was the follow-up of an acute condition already being treated; a chronic return was the follow-up of a chronic condition.

satisfactory comparisons between results from different studies. However, in Lambeth (Morell et al 1970) 53 per cent of all consultations were patient initiated; 25 per cent being new patient initiated and 28 per cent being old patient initiated consulations, that is, with symptoms which had been presented to a doctor during the previous year. Various patient initiated rates were found in South Wales - mining areas 49.7 per cent and urban residential 54.4 per cent - rural and urban residential 53.5 per cent and rural only 41.5 per cent (Williams 1970). Wright (1968) in the south west of England obtained a patient initiated rate of 42.5 per cent. This suggests that the Witney figures were, more or less, of the same order as those reported elsewhere - though perhaps at the higher end of the spectrum (given Witney's semi rural situation) as regards the proportion of contacts classified as new or patient initiated.

ii. The distribution of types of consultation by age and sex

Generally, a higher proportion of consultations with females (30.1 per cent) were classified as chronic than was the case for males (23.1 per cent) with corresponding slightly higher proportions of new and acute returns among males. This trend was evident in all of the major age groups (Table 14).

Among the very young, whether seen at the surgery by the nurse or doctor, or at home, (Table 15) the majority of consultations were new and the bulk of the residue acute returns. As age increased so the proportion of consultations in an age group which were classified as new, declined, matched by a corresponding increase in the proportion of chronic attenders - acute returns did not exhibit such a trend to anything like the same extent. In the surgery, half the chronic attenders were aged 50 or more and a third of the new surgery contacts were aged 20 or less (these characteristics were particularly marked in the case of the nurse's contacts). Among home visits, nearly 90 per cent of the chronic visits were to persons aged over 50 years and a third of the new visits were to children aged less than 10.

iii. Type of consultation by season

Among surgery attendances all types of consultations were present in similar proportions in the winter and summer recording sessions. The proportion of new home visits was less in the summer than winter (almost 45 per cent as compared with nearly 56 per cent) and this was matched by an increase in the proportion of chronic visits in the summer.

iv. Type of consultation by day of week

New surgery attendances at the health centre to see the doctors were fairly evenly distributed over all weekdays except Thursday (Table 16). Monday was the busiest day of the week from this point of view followed fairly closely by Friday. Thursday was only half as busy as Monday in respect of new attenders. Friday had quite the biggest load of acute returns whilst Monday was favoured by chronic return patients. Thursday was also relatively popular in terms of chronic attendances (especially female). It is possible that some chronic patients attending the Witney market took the opportunity to consult the doctors for routine prescriptions and the like. Also, Thursday was the half day for the two doctors who had the heaviest workloads but relatively few chronic return patients. Thus the chronic return patients of the other doctors would have appeared to be proportionately more significant on this day.

A somewhat similar pattern obtained for the nurse; Friday and Monday accounted for half of all her chronic attendances (Table 16). She was generally busier on Thursday in relation to her weekday load than the doctors, while nearly one tenth of her new patients attended on Saturday morning.

Among home visits, Monday was easily the busiest day for new contacts. Acute returns were fairly evenly distributed over the week. Chronic return visits appeared to be concentrated in the middle days of the week, especially Tuesday (Table 16).

v. The distribution of consultations by type for individual doctors

When surgery consultations and home visits were taken together, there was a fair degree of uniformity among the doctors (excluding doctor 6) as far as the proportion of contacts classified as new were concerned. This ranged between 42.1 per cent and 50.3 per cent. (Doctor 6's figure was 58.0 per cent.) However, there were much more substantial differences in the proportions classified as chronic and acute return, suggesting differences in the criteria used (Table 17). Doctors 4 and 7 classified only a small proportion of their patients as acute return, particularly in the surgery. The relative homogeneity of the others as far as all consultations were concerned masked substantial variation for some doctors in respect of the distribution of consultations of the acute and chronic return types between home and surgery - thus doctor 3 tended to record a much higher proportion of acute return cases in the surgery than at home.

vi. Implications

More than half the doctors' work in the surgery was of the return type and so mostly capable of being scheduled especially in the case of the chronic returns. A similar situation obtained for home visiting and for the nurse's work. Monday and to a lesser extent Friday were predictably the busiest days for new consultations at all sites. However, on these days also there was a heavy volume of return consultations as well. This suggests that there was scope for distributing some of these return consultations so that they occurred in the middle of the week. By and large new consultations tended to be characteristic of younger patients and chronic return consultations more typical of the elderly.

The urgency of new home visits

New home visits arise as a result of a request from a patient (or some other person such as the patient's relative or neighbour). The doctors, it will be recalled, screened most requests for a home visit to determine whether there was a need for a call, and decided upon a course of action in the light of this encounter. In this section, however, we examine the urgency of new home visits as assessed by the doctors following the visits in question. The visits were classified as one of 'emergency', 'needed same day' and 'when convenient' (i.e. not necessarily the day of request).

12.0 per cent of all new home visits were classified by the doctors as 'emergencies', a further 78.2 per cent did need attention, the doctor felt, on the day the call was made and only 8.9 per cent could have waited until convenient. The under 10 age group accounted for over one quarter of the 'emergency' visits and over a third of 'same day' visits. Among males, the corresponding proportions were even higher. Over two fifths of the 'when convenient' visits were paid to persons of over 60 years of age, predominately to very elderly ladies - though numbers were quite small (Table 18).

Two thirds of the 'emergency' visits, a quarter of the 'same day' visits and a third of the 'when convenient' visits occurred in the summer period.

About 44 per cent of the 'emergency' visits occurred over the weekend (Table 19). Monday was easily the busiest day for 'same day' visits though nearly 20 per cent of these took place over the weekend. More than 40 per cent

of the 'when convenient' visits occurred on Monday and Tuesday.

If doctor 8 - the locum - who generally did very little visiting, is excluded, the proportion of new visits, which individual doctors classified as emergencies, ranged from 4.5 per cent to 23.4 per cent. The corresponding range for visits which they judged could have been made 'when convenient' was 3.2 per cent to 41.0 per cent. If doctor 7 is excluded, however, the range becomes 3.2 per cent to 14.1 per cent. Certainly, apart from doctor 7, all doctors felt that at least 85 per cent of their new home visits had in fact required attention the same day as the call was made.

The principal implication of this section is that nine out of ten new home visits were to recipients who required attention on the same day as the visit was requested (though, as we shall see, not necessarily in the form of a home visit). By and large then any transport services which might absorb some of the new visits into the surgery situation must be capable of bringing patients to the centre on the same day as that on which they requested attention.

The necessity for home visits

i. Introduction

We turn now to the main issue of this section; to what extent were the visits the doctors made necessary in the sense that the patients needed care and could not be expected to attend for medical or social reasons at the surgery for this purpose - as distinct from being 'unnecessary' either because the patient was capable of attending the surgery in the present circumstances (taking account of domestic situation and availability of transport) or because they would have been able to attend at the surgery had practice transport been available to convey them to the surgery and home again.

ii. Results for all visits

Overall the doctors considered that 71.0 per cent of the home visits they made were necessary in the sense defined above. 10.7 per cent of visits were classified as 'unnecessary in the present circumstances', while in the case of 18.3 per cent of the visits the doctors considered that the recipients could have attended at the surgery if transport had been available. In the north east England survey of the home visiting patterns of 190 general practitioners (Marsh et al 1972), 25 per cent of patients could have gone to the surgery had a transport system been available.

iii. Sex and age differences

Males and females were equally likely to be the subject of visits which would not have been necessary had suitable transport been available (Table 20). However, a slightly higher proportion of visits paid to females were considered necessary than was the case for males, conversely males were rather more likely than females to be the recipients of visits which were deemed 'unnecessary in the present circumstances'.

Table 20 also shows that two thirds of the patients who could have attended the surgery if transport had been available were over 60; more than a third of the 'unnecessary in the present circumstances' visits were paid to children under 10 years of age. (Overall there was little difference in the proportion of home visits considered necessary in each age group.)

iv. Type of consultation and necessity of visits

Among chronic return visits, over one third (174) were placed in the 'could have attended surgery if transport provided' category (compared with only one eighth of both the new and acute return patients) (Table 21). In fact, half of the 'special transport' assessments related to chronic return patients. Of those who could have attended in the present circumstances, the majority (70.9 per cent) were new cases. About one half of these 144 'new unnecessary' visits were classified as needing attention either as emergencies or on the same day (but not necessarily at home).

v. Necessity of visits and the time of year

The proportions of summer and winter visits which were considered to have been 'unnecessary' had surgery transport operated were the same, about 18 per cent, but since there was a significant imbalance in the seasonal home visit loads, this proportion represented 215 winter cases and only 133 summer cases (Table 22).

vi. Necessity of visits and day of week

Nearly half of the visits which would not have been necessary if transport had been available took place on Mondays and Tuesdays (Table 22). These were also busy days for necessary home visits. A quarter of the 'unnecessary in the present circumstances' visits arose at the weekend (when there was only one surgery session).

vii. Necessity of visits - diagnostic distribution

Virtually all visits to patients with communicable diseases were classified as necessary as were visits to those with neoplasms. Visits classified as digestive were also usually deemed to be necessary (see Table 23). A very large number of visits were concerned with respiratory disease and about 20 per cent of these patients could have attended the surgery if special transport had been available, while another 10 per cent approximately were described as 'unnecessary in the present circumstances'. In fact, respiratory illness accounted for more than one third of all the 'unnecessary' visits. Almost one third of the patients suffering from circulatory disease could, the doctors thought, have attended surgery if transport had been available. These accounted for just over 20 per cent of those whom the doctors felt could have used transport to the surgery. The only other diagnosis featuring to any extent among the potential transport users was 'bones', the remainder of this group being fairly evenly distributed over most of the other diagnoses. (Nearly half of the small number of accident calls (20 out of 43) were considered as being 'unnecessary in the present circumstances'.)

viii. Necessity of visits - individual doctor's assessments

Among individual doctors, the proportion of visits considered necessary under any circumstances ranged from 32.3 per cent to 90.9 per cent. If, however, the two locums are excluded, the range becomes 54.9 per cent to 83.8 per cent. The variation in this percentage was almost entirely accounted for by the complementary variation in the proportions of those whom the doctors thought could attend surgery if special transport were provided - rather than in terms of those judged able to attend the health centre in present circumstances (Table 24).

Need for attendance at the health centre for patients seen elsewhere

i. Patients for whom a home visit was not necessary

For the 28.9 per cent of patients whom it was reckoned could have attended the health centre with or without the help of a transport service, it was noted whether their attendance would have been primarily for pathology tests, 'treatment' (in the sense used in this report[1]) or just examination, which was not dependent upon facilities available only in the health centre.

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[1] see page 9

The vast majority (503 cases, 91.3 per cent) needed examination, 29 (5.3 per cent) required 'treatment' and only two, pathology tests.

ii. Patients seen at the branch surgery

None of the branch surgery patients was referred to the health centre for 'treatment'. Doctors 3 and 7 each carried out three routine 'treatments' at the branch.

Thus the prime reason for bringing patients to the health centre was that it was more convenient to the doctors rather than a need on the patients' part for the special facilities only to be found at the centre.

Summing up

The doctors, it will be recalled, classified nearly a third of their visits as being to patients who could have attended the surgery either in the present circumstances, or if transport were available; the latter constituted about two thirds of these 'medically and socially unnecessary visits'. Had these patients attended the surgery, only a small minority (29 - about five per cent of those involved) would have required 'treatment' of a kind which a nurse could have provided, or pathology tests. Similarly, hardly any patients seen at the branch surgery required such 'treatment' at the health centre and none were actually advised to attend there. So it would appear that the reason for encouraging such patients to attend the surgery was primarily to save the doctors' travelling time - rather than because the special facilities of the centre were required.

The 'special transport' cases were predominantly elderly persons (two thirds were aged 60 years or more). A further 14 per cent of such patients were under 10 years of age but they were not over represented in this transport category if compared with their proportions of all home visits or total medical contacts. (We shall be looking further into problems associated with families with young children going to the surgery in a later section.) Of the visits deemed 'unnecessary in the present circumstances' one third were children under 10 years.

Half the visits which would not have been necessary if special transport had been available occurred on Mondays and Tuesdays and of those considered 'not necessary in the present circumstances' 35.0 per cent took place on those days.

The doctors considered that little more than half of their chronic visits were necessary. The majority of 'unnecessary in the present circumstances' patients were 'new' and so could not be scheduled in advance should a transport system be introduced (even assuming they would use such a service). More than one third of those who could have attended surgery if transport had been available were suffering from a respiratory complaint and a further 20 per cent or so from circulatory diseases. Apart from the patients with respiratory illnesses it seemed likely that very few patients who could have been expected to come in transport to the surgery would have been in a state where they might pass on infection in the car or bus.

Thus it would appear that average load per week which might fall on a transport service (assuming the recording sessions took place in typical periods) would be of the order of 40, if the prediction is based on the special transport cases only. But if the provision of surgery transport were to substitute the venue for many of the 'unnecessary in the present circumstances' visits, then the transport load might rise to 65 patients weekly. However, seasonality could influence the transport scheduling as far fewer cases were recorded as 'unnecessary given the provision of special transport' in the summer period than in the winter period. (There was on average 54 special transport cases per winter week of the survey but only 33 in the summer recording weeks.) If the branch surgery was not used and the patients brought into the centre then a further 10 to 15 persons could be added to the transport load. Given the volume of chronic sick involved whose visits could be scheduled it would appear that the total demand for practice transport would not generally be more than 20 persons per day. The value of such a service in terms of doctors' time saved would largely depend on the distances of the patients' homes from the centre and more particularly the actual driving time which could be saved if 'unnecessary' visits were removed.

In the next section we begin a consideration of these problems by examining the geographical location of those patients demanding visits deemed necessary and otherwise.

THE LOCATION OF PATIENTS' HOMES

Introduction

Suppose travel difficulties did have some bearing upon whether patients were visited at home or seen in the surgery. We might then expect to see some differences in the surgery/home visiting ratios and contact rates per head of population for patients living in areas with differing accessibility to the surgery in terms of distance and adequacy of public transport. In the analyses that follow in this and subsequent sections the total practice area has been sub-divided into five groups based on the provision of bus services. These groups are described fully on page 21.

Statements on consultation rates per head of population in respect of Standlake and group 3 should be treated with particular caution in view of their small practice populations and the remarks made about the sampling reliability of the 1966 census on pages 12 and 13.

Rural/urban distributions of contact rates and surgery/home visiting ratios

Overall, the rural practice area had lower contact rates per head of 1966 estimated practice population than the urban practice area (Table 25). This was the case for surgery contacts with both the doctors and with the nurse, and also for home visits. Within the rural practice area, group 1 with good bus services to Witney town had lower contact rates than group 2 for which the health centre surgery was less accessible. The small population in group 3, which was largely cut off from Witney in terms of bus services, had lower surgery contact rates and lower home visiting rates than other parts of the practice area. (Of course, an over estimate of the 1966 practice population in the group 3 Study Areas could have caused this result.) Standlake by contrast had higher contact rates with the doctors (though not with the nurse) than the urban practice area. (Note that the Standlake branch surgery was used almost exclusively by persons living in the Standlake area.)

In the case of surgery/home visiting ratios (doctors' contacts), these were a little lower for the rural areas than for the Witney town population (Table 25).

Thus the impression received from the analysis so far is that the rural patients had fewer contacts per head than the Witney U.D. patients both in terms of surgery work and home visiting. However, a slightly higher

proportion of the contacts they did make were home visits. There was no suggestion that the more remote an area was from the surgery in terms of public transport, the higher the proportion of total contacts for its patients that were home visits.

These results could, of course, be artefacts arising, for example, from different age, sex structures of the areas under study. However males and females in the three age groups (0 - 19, 20 - 59 and over 60 years) in the rural practice population received fewer contacts per head than their urban counterparts. When home visits were considered it appeared that only females living in rural parts aged less than 20 or over 60 years received more visits per head than such persons living in Witney town.

Season

It would be reasonable to expect that any difficulties experienced in travelling to the surgery by public transport would be aggravated by winter conditions. (The same bus timetable operated in summer and winter.) Home visits generally formed a higher proportion of the total contacts in winter than in summer (Table 26). Standlake's surgery/home visiting ratio moved in the opposite direction - probably a consequence of the branch surgery being opened one session weekly in the summer compared with two in the winter. It is also possible that the doctors were over compensating for the closure of the branch surgery session (only two months before the summer recording period) by undertaking more home visits than they would otherwise consider 'normal'. Table 26 shows that in winter, but not in summer, surgery/home visiting ratios for rural areas were related to their accessibility to the health centre.

Type of consultation

So far we have been talking about contacts which were not differentiated according to who initiated them. New contacts may reflect the patient's view of the problem of getting to the surgery whereas return contacts may give some indication of how the doctors judged this matter. In fact overall, new and repeat consultations were present in equal proportions among rural and urban patients both in the case of surgery attendances and home visits. That is, taking account of our earlier findings, rural patients gave rise to fewer new contacts in the surgery and at home, and fewer return contacts (again in the surgery and at home) per head than urban patients. When new home visits were examined for urgency, there was a slightly greater tendency for visits to rural patients to be recorded as non urgent than was the case for those in Witney town.

Necessity of visits

There was almost no difference between the proportions of all urban home visits and all rural home visits which were judged 'necessary' by the doctors. However the variations between rural areas (with the exception of Standlake) did reflect the adequacy of bus services (see Table 27). The more inaccessible an area was, the higher the proportion of home visits categorised as 'necessary'. Conversely, in these same rural areas, the proportions of both types of 'unnecessary' home visits (either in the present circumstances or with special transport) diminished according to the degree of inaccessibility.

A priori one would have expected a higher proportion of home visits to have been judged 'unnecessary' if special transport had been available in areas badly served by public transport. That the converse was observed may be due in part to the doctors taking into account, in making their assessments, the rigours of a longer journey to the surgery as some areas with poor transport were up to five miles away from the health centre. Another possible explanation is that patients in areas poorly served by transport may have allowed their illness to reach a state where home visits were really necessary either because of the problems of attending the surgery or a reluctance to ask the doctor to make a long journey to his home without abundantly good cause. Standlake stands out as an exception to the above findings - further evidence perhaps that patients (or the doctors) were compensating in the summer recording period for the loss of one weekly branch surgery session by asking for more visits.

Patients living within one mile of the health centre received sixty per cent of the home visits which had been assessed as avoidable had special transport been operating. The remaining forty per cent of these home visits were scattered throughout the rural practice area. Such a dispersion could create scheduling difficulties if a practice transport scheme were introduced.

Distribution of individual doctor's home visits by location

Visits were not zoned in this practice so that all doctors visited over virtually the whole of the practice area - though the distributions for individual doctors differed from area to area. In particular, doctors 1, and 3 and 7 (who shared the same list) accounted for 78 of the 101 visits to Standlake patients. It will be recalled that doctors varied in the proportion of their visits which they classified as necessary under any

circumstances - 2, 3, and most markedly 7 tended to describe relatively low proportions of their visits in this way; we call these 'low' classifiers. The others classified above average proportions as necessary ('high' classifiers).

Could the variations between areas in the proportions of visits described as necessary be attributed to uneven distributions of the doctors' patients over the practice area - and if so, was it a reflection of the doctors as classifiers or simply that patients in the various areas tended to be different as was implied by the preceding section? We cannot give a completely satisfactory answer to these questions because of the numbers involved. It is true that the differences between areas of the proporations of necessary visits could be partly explained in terms of the way high and low classifiers' visits were distributed over the area. However, from a study of the observed and expected[1] proportions, it seems reasonable to conclude that there were some factors other than doctors varying personal criteria at work in determining the results. The same conclusions follow when considering the proportions described as 'unnecessary' for either reason.

Summing up

The results presented in this section suggest that the rural patients were the source of fewer contacts per head of estimated 1966 practice population than were urban patients in the case of each of (a) surgery consultations with the doctors (b) surgery attendances to the nurse and (c) home visits (by the doctors). These overall findings were evident in all sex and age groups except within the home visiting rates for females aged 0-19 years and over 60 years. These lower rural rates may have been due to an over estimation of the rural sector of the 1966 practice population. The proportions of the doctors' total consultations that were home visits were marginally higher for rural patients than for urban patients in both winter and summer recording periods.

There was some suggestion that the less accessible a rural area was from the health centre or branch surgery, the more likely home visits to residents would be judged as 'necessary' by the doctors. Almost two thirds'

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[1] expected, that is on the assumption that the doctors were always classifying in the same way regardless of the area

of the 'special transport' cases lived within one mile of the health centre. The generally lower contact rates of rural as opposed to urban patients did not seem to be explained in terms of the former not bothering to seek help at all (the proportion of rural emergency visits was lower and the lower demand was reflected in both new and return consultations).

We have however by no means taken account of all factors available to us so far. We know for example that persons living in rural areas surrounding Witney were better provided with private cars. Our next task then is to examine how patients come to the surgery and how this was related to the availability of a car, to their age and sex, and the location of their home.

HOW DID PATIENTS TRAVEL TO THE SURGERY?

There are four parts in this section. The first is an examination of the transport methods used by patients attending the health centre. Particular attention is given to public transport to establish the frequency that buses were used in areas with differing bus service provisions. The second part relates the availability of the patient's own car to the use of it made by the patient when travelling to the surgery. Travel methods to the branch surgery are dealt with in the third part while in the final part there is an assessment of usefulness of the car ownership data in the 1966 Sample Census as an indicator of the mobility of patients when attending the doctor.

Two methodological points need to be made. The first is a reiteration of the earlier statement that the data in this study refers to the numbers of contacts made at the surgeries rather than the number of individual patients seen. Thus some patients may have attended the surgery on more than one occasion during the survey period, using for each visit either differing forms of transport or the same transport method. The second point relates to the types of surgery contacts which are analysed in this section. All doctor contacts in the health centre and branch surgery contacts are included plus those nurse contacts which either came directly to her (i.e. were patient initiated) or were referred by a doctor at a previous surgery session. We have excluded contacts which were referred to the nurse by a doctor within the same surgery session; this is to avoid double counting of what we assume in most cases to be one journey to the surgery. Thus contacts seen at the health centre include the doctors' and selected nurses' consultations unless identified separately.

Transport methods used by patients attending the health centre

Only one in ten contacts used public transport to travel to the health centre (the rates were similar for both the doctors' contacts and those of the nurse); a third of the contacts walked and half travelled by car, usually their own (Table 28). There were no seasonal variations in travel methods to consult with the doctors. The nurse did have a smaller proportion of patients who walked in winter; this was offset by increased use of cars in winter (either the patients' own or neighbours'). Likewise, the transport patterns were consistent for each weekday although slightly fewer patients walked to the health centre in the latter part of the week when private cars were preferred (see Table 29). Thursday was marginally the most popular day for public transport. This was not a surprising finding as Thursday is

Witney's market day and some Study Areas were linked to a morning surgery session by adequate bus services only on this weekday.

Females were twice as likely as males to travel by public transport to the health centre. They were also more disposed to walking than males who generally placed greater reliance upon their own car (Table 30). The age group most likely to use public transport was the over 60s but even within this sector women were much more frequent users of buses (which accounted for 21.5 per cent of journeys by women compared with 12.8 per cent of elderly men's journeys). Almost two thirds of the men aged 20-59 drove their own car to the surgery whereas walking was nearly as frequently recorded as 'own car' for women in this age group. Over half of the children under 10 years (both sexes) were taken to the surgery by car, but only one third of those aged 10-19 years were similarly transported. Neighbours' cars were used by more than one tenth of the women over 60 years of age; the proportions of contacts in all other age/sex groups who relied upon their neighbour's car were around five per cent.

There were marked differences between the urban and rural parts of the practice area in terms of the transport methods of patients recorded at the health centre. These differences were probably a reflection of geographical location - no urban households were more than one mile from the health centre, plus the social factor that car ownership was more prevalent among rural practice area households (see page 18). Table 31 shows that over 60 per cent of the rural patients used their own cars but less than 40 per cent of the urban contacts did likewise. On the other hand, almost half of the Witney patients walked compared with less than eight per cent of the rural contacts. Buses were used by fewer than six per cent of the urban contacts; the percentage was three times as great for the rural area. Two studies, Hutchinson (1969) who surveyed six semi-rural practices over a two week period and the Royal College of General Practitioners (1973) when 100 attendances at each of 34 practices were recorded, produced results of a similar order - buses were seldom used by patients for journeys to the surgery of less than one mile. Witney rural patients were twice as likely to travel in their neighbour's car as urban patients although the proportions were small, 8.0 and 3.9 per cent respectively.

The frequencies with which public transport was used to travel to the health centre by patients from the three groups[1] of rural Study Areas

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[1] For a description of these groups, see page 21.

reflected closely the level of bus service provision (Table 31). Thus 8.6 per cent of contacts from group 3 (poor services), 20.0 per cent of the group 2 contacts (limited services) and 25.2 per cent of contacts in the well provided areas of group 1 (good services) travelled by bus. These trends appeared for both the male and female contacts although the percentages of females using public transport were about double those for males in each group. In group 2 (limited services) one quarter of females used the buses and the figure for females in the well provided group 1 was nearly one third.

The availability of a private car for patients attending the health centre

All patients were asked whether a private car was available to them to travel to the surgery at all times, sometimes or not at all. 26.1 per cent of the patient contacts at the health centre (doctors and nurse combined) were without the use of a private car, 43.1 per cent had a car available sometimes and 30.9 per cent had access to a car at all times. In table 32 it can be seen that of those who were 'carless', 19.2 per cent travelled by public transport and 60.7 per cent walked. Buses were used by 10.4 per cent of contacts who had a car available sometimes; they mostly travelled in their own car (46.0 per cent) or walked (36.5 per cent). The majority of contacts with continuous access to a car, journeyed in it (85.4 per cent).

When availability was related to age and sex (Table 33) it was found that over half of the women aged 60 or more and nearly half of the men in the same age group were without any access to a private car (56.3 per cent and 46.2 per cent respectively). But while the remainder of the men in this age group were very likely to have a private car available to them at all times rather than sometimes, the reverse was apparent amongst the elderly women.

Rural patients attending the health centre were much more likely to have a car available to them than their urban counterparts - 39.0 per cent of the rural practice area contacts had full access to a car compared with only 26.4 per cent of the Witney U.D. patients. Likewise, almost 30 per cent of the latter group of contacts did not have any access to a private car. But this situation applied to only 19.7 per cent of the rural contacts (Table 34). Nearly one half of the rural practice area 'carless' contacts used public transport when attending the health centre.

The frequency that buses were used by 'carless' or 'car sometimes' patients within the group amalgamations of the rural Study Areas, again corresponded to the timetabling of services with the group. These trends were evident in both types of 'car unavailable' patients.

The branch surgery

The presence of the branch surgery in the Study Area of Standlake probably accounted for the very high percentage (90.9) of contacts who travelled the five miles to the health centre either in their own car or a neighbour's car. The branch surgery served almost exclusively patients from the Standlake Study Area. The majority of attenders walked, some up to one mile or more (Table 28). 42 of these 110 pedestrians did not have a private car available to them, and if the branch surgery were to close then they could have considerable difficulty in reaching the health centre owing to the very limited bus services operating. Their alternative may have to be home visits unless some special transport were provided.

A comparison between the 1966 Sample Census car ownership data and the car availability data recorded in the 1968 Witney Study

The car ownership data from the 1966 Sample Census was compared with the 1968 Witney study car availability records to see if the Census results were reasonable indicators of the mobility of a practice population seeking general practitioner services. Unfortunately, the two lots of data are not strictly comparable as our more recent study recorded information about contacts rather than persons. Bias would have occurred in the 1968 data if patients without cars available received more consultations per head of population than patients who had full access to a car. (Some evidence of this can be seen from comparing the proportion of home visit contacts who were without a car, 39.7 per cent,with the proportion of health centre plus branch surgery attenders in a similar situation, 26.2 per cent). Thus in Table 34 three 1968 rates of car non availability have been worked; for all surgery consultations (excluding patients referred to the nurse in the same surgery session), for home visits only, and for total consultations.

The proportions of home visit patients without access to a car were greater than proportions of persons who were estimated in the 1966 Sample Census as living in private households without a car - a predictable finding in view of the high proportion of home visits (44.3 per cent) which were to persons

over 60 years. Surgery contacts were better provided with cars than in the Census. This pattern emerged in all but one of the grouped practice Study Areas. (Over one third of the persons enumerated in Standlake in 1966 were in households lacking car ownership, but this may have been due to sampling distortion as there were only 720 persons estimated as living in private households in this enumeration district.) When the rates of car non availability for all[1] consultations are compared with the 1966 distributions similarities emerge although the 1968 study figures are lower than the 1966 estimates by, on average, about four per cent. This may well be accounted for by either an increase in car ownership in the Study Areas in the two intervening years or a tendency for patients with cars to have made more contacts per head with the doctors and nurse in the survey period than patients without private transport. However, this analysis does suggest that census data can provide a rough indication of the proportions of patients in a practice who do not have a private car available to them when seeking medical services.

Summary

Public transport was used by only one tenth of the patients attending the health centre and not at all by persons using the branch surgery. Half of the health centre contacts travelled by car and a third walked; three quarters of the branch surgery attenders were pedestrians. There were no seasonal variations in the transport methods used; buses were a slightly more popular form of transport on Thursday, the market day. Females were much more likely to use public transport than males, and the over 60s were the age group most dependent upon buses.

It was evident that patients from the rural practice area placed a greater reliance on public transport than those living in the Urban District who were resident within a mile of the health centre and so able to walk. However, over 60 per cent of the rural contacts travelled by car to the surgery compared with less than 40 per cent of the townspeople. The frequency with which buses were used by differing sectors of the rural practice population reflected the availability of bus services - the better the provision of suitable services linking surgery sessions, the greater likelihood of patients to travel by bus. This applied both to male and female attendances and to contacts with or without limited availability of private transport.

Rural contacts were much more likely to have a private car available to attend the health centre than urban contacts and were much more likely

[1] excluding, though, contacts referred to the nurse in the same surgery session

to travel by car to the surgery. The data suggests that patients without cars living in Standlake favoured the branch surgery to which they could walk rather than the health centre and this would raise the problem of providing some transport system for these patients should the branch surgery be closed.

Finally, it appears from the car ownership data in the 1966 Sample Census that similar data especially from a full census could be a useful indicator of the mobility of a population in terms of availability of cars with reference to general practitioner services.

SOCIAL FACTORS INFLUENCING PATIENTS' DEMANDS FOR MEDICAL SERVICES

It will be recalled that four items of a social nature about the patient were collected from each consultation in the two survey periods: marital status, the employment status of married women, the presence of children of preschool age in the home of the patient (other than the patient), and the availability of a private car in which the patient could travel to the surgery. These data were recorded for all home visits as well as all surgery consultations. In this section we consider whether different 'values' of the social variables are associated with differences in consultation rates for the contacts in the study. In particular we examine whether patients who received 'unnecessary'[1] home visits fell in disproportionate numbers into certain of the categories (e.g. widowed, 'carless') arising from the analysis of the social variables.

Findings of this section will therefore throw some light on the nature of the social impediments of patients travelling to the surgery (additional to distance and bus services). They will also draw attention to any factors which may have implications for the planning of the capacity and character of a practice transport service. For example, if mothers with children of pre-school age were likely to form a substantial proportion of those using the transport service, this would affect the demand for space in the vehicle as each patient would have one or more family members accompanying him - similarly this would have some bearing on the size of waiting space needed at the health centre and any decisions to provide suitable diversions for young children at the centre.

In this section contacts with the doctors recorded at the health centre, branch surgery and in the home, are discussed. The nurse's consultations have not been included for although her workload was large, it was not strictly comparable with the surgery load of the doctors. It was felt that by omitting her recordings, the Witney findings could be related to other practices where a practice nurse played a far less active role.

In the following discussion surgery/home visiting ratios have been used extensively because our attention has been focused upon the relative demands of differing 'social' groups for home visits as an alternative to surgery consultations.

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[1] A home visit was classified as 'unnecessary' when the doctor considered after visiting the patient that there was no medical or social reason why the patient could not have attended a surgery.

Availability of a private car to attend the surgery

Contacts with private cars available to them at all times were much more likely to consult with the doctor in the surgery (the ratio being five surgery consultations for one home visit received) than patients with a car available sometimes (four surgery consultations to one home visit), who in turn had a higher surgery ratio than contacts without the services of a private car whose ratio was only two surgery consultations to one home visit. However table 35 shows that when the rates were analysed for each sex and decennial age group this overall pattern was only consistent within the female decades starting from 30 years. Young girls without any access to a car had the highest surgery/home visit ratios in the 0-9 age group. Among males there was no discernible pattern of surgery/home visit ratios being related to 'mobility' in the sense of having access to a private car. In only four decades (0-9, 30-39, 40-49 and 70-79 years) did contacts with a car available at all times, make the greatest use of the surgery (relative to home visits).

Marital status

Analyses of 1972 hospital utilisation data from the South East Metropolitan Region (Butler 1973) have shown that in general, the older the hospital patients, the greater their degree of over-representation amongst inpatients when compared with the age distributions for the total population; and within each age group, the ratios were higher for widows and widowers than for married or single persons. These trends were also evident in the discharge rates per 10,000 population and the bed usage rates. Very little is known about the usage of general practitioner services by marital groups particularly amongst the elderly widowed. So in this discussion of the recorded marital status of patients in a semi-rural group practice attention will be directed to the widowed and divorced (these states were not distinguished in this study).

It will be recalled (on page 16) that in the 1966 Sample Census widowed and divorced persons were under represented in the estimated Witney practice population when compared with the proportion for England and Wales - 2.4 per cent of the males and 7.1 per cent of the females in the practice population were widowed or divorced. However in the 1968 Witney study contacts this marital state was twice as large percentage-wise for both sexes. Widowed and divorced women made 104 medical contacts per 100 estimated 1966 population, and widowed and divorced men 70 contacts per 100 estimated population, which was almost the same as the rate that applied to married women, 71 contacts per 100 estimated population although this figure included pregnancies. Married

men had a rate of only 46 contacts per 100 estimated persons and the rates for single males and females were even lower. It is not possible to establish rates according to age groups as the relevant information from the 1966 Sample Census was not available at local authority level. So we must emphasize that care be taken when comparing these rates per head of population because of the diverging age concentrations within each marital class, especially among the widowed who are clustered in the senior decades.

Predictably the widowed and divorced patients were concentrated in the over 60 year age groups. They formed only 2.2 per cent of the contacts aged between 20 and 59 years, and two thirds of these were 50 years or more, compared with 35.3 per cent of the contacts over 60 years of age. However, there were for males and females differing marital distributions within the age decades. Of the women[1] in the 60-69 decade 31.0 per cent were widows or divorcees, this percentage rose to 56.7 in the 70-79 decade, and nearly three quarters of the over 80s (71.0 per cent) were widowed. However, for males[1] only 5.4 per cent of the 60-69 years olds, 28.5 of the 70 year olds and 33.3 per cent of these 80 years or more had lost their marital partners. Widows outnumbered widowers by three or four to one within each of these decades. (In contrast the sexes were much more evenly balanced in the age groups of the married.)

Widowed women aged 60-69 years had a surgery/home visit ratio of 1.7 compared with over 3.0 for married and single women in the same age group. The reverse trend was evident among the male marital groups in this decade (see table 36). Almost all of the sex/marital groups in the two more senior age groups were more reliant upon home visits than surgery consultations; this was particularly true of the over 80s.

There was no apparent evidence that widowed persons were exceptionally demanding for any one type of consultation (i.e. new, acute return or chronic return). They appeared in each consultation type category (all doctor contacts by decennial age group for the over 60s) in proportions similar to their representation in the group of all contacts.

Widowed and divorced women patients in their 60s were much less likely to have a car available to them to attend the surgery than married women (see table 37). This might partially explain why female contacts who were aged between 60-69 and no longer had spouses had such a low surgery/home visiting ratio. There was almost no difference in the proportions of married and widowed/divorced women lacking access to cars in the two older age groups. For the males, it was only among the contacts aged over 80 that there was a

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[1] contacts that is

significant variation, the married being better provided.

Children under five years in the home of the patient

It had been postulated that patients who had a member of their family aged less than five years might find difficulty in attending the health centre or branch surgery because of inconveniences created by the preschool child. Where a private car was not available and there was no adequate baby sitting arrangement for the young child then the patient or its guardian may have requested a home visit, rather than cope with the problems of reaching the surgery either by bus or walking with a sick patient and a baby or active preschool child. Such a situation could be aggravated if the patient was also under five years of age.

Almost half of the contacts aged less than five years seen by the doctors at either surgery site or as a home visit had a member of the family (other than the patient) also under five years of age. These contacts 'favoured' home visits rather more than patients in the same age range who did not have young siblings, the surgery/home visit consultation ratio for the former group being 1.6 and for the latter group 2.5 (Table 38).

Only one fifth of the contacts aged more than five years had a preschool-aged member of the family and not unexpectedly the majority were aged either 5-9 years (13.3 per cent), or 20-39 years (71.5 per cent). The surgery/home visiting ratio for children aged 5-9 years without a younger member in the family was slightly higher than for children with a preschool sibling (see table 38). Likewise persons in the main child bearing age range (20-39 years) without preschool children in the household were more likely to make a surgery visit rather than receive a home visit than parents of young families although both types generally had very little demand for home visits.

The lack of a family car did not appear to create any exceptional demands for home visits to under five year old children with young siblings, or to children aged 5-9 years also with preschool siblings as their surgery/home visit contact ratios were slightly higher than those of similar patients with cars available at all times. The ratios for the under fives with young siblings were 1.6 for those without a private car and 1.1 for patients with a car at all times; the respective ratios for the 5-9 years with preschool siblings were 3.2 and 2.5.

Married women working

In the 1966 Sample Census, an estimated 40 per cent of the married women of all ages in the practice population were in employment. A similar proportion of the married women contacts recorded by the doctors in the Witney study were also working (37.6 per cent) half of them being in full time employment. The surgery/home visit ratios for married women contacts aged 20-59 years certainly confirmed earlier suggestions that married women in employment were in an advantageous position to attend the health centre. In table 39 it can be seen that the ratio for those in full time employment was 9.6, those in part time employment 6.9, whereas the ratio for non working married women was 5.5. This pattern did not appear to be the result of an age artefact as within each of the four decades between 20 and 59 years, married women who were working had higher surgery/home visit ratios than those not in employment. But included in this latter group would be the chronic sick whose demands for home visits possibly may have had a deflating effect upon the 'non working' ratios.

'Unnecessary' home visits related to social factors

It will be recalled from page 36 that 18.3 per cent of the home visits were classified as able to attend surgery if special transport were provided, and almost 11 per cent could have attended the surgery in the present circumstances. Approximately two thirds of the 'special transport' contacts were 60 years and over but only one fifth of the 'present circumstances' contacts were in this age range. It was the group at the other end of the age scale (0-9 years) who received the highest proportion for any decennial age group of 'unnecessary in the present circumstances' visits - over one third of all such visits.

i. Availability of a private car

More than 60 per cent of the home visit 'special transport' contacts did not have a private car available. In comparison, only 19.7 per cent of the 'surgery in the present circumstances' patients were without a car at all times. The great majority of the 143 females and 75 males 'car less' contacts who could use surgery transport were aged over 60 years - 59 in all were 80 years or more (Table 40). It must be remembered that the figures represent contacts and so these octogenerians may really have been few in number but recipients of multiple home visits in the survey period.

There was an average of 26 doctor initiated home visits (i.e. acute or chronic returns) per week to persons with only limited or no access to private cars which the doctors could have scheduled as health centre attendances had

a special transport service been operating. This figure could be raised to 31 if the doctor initiated ' could have attended in the present circumstances' contacts who did not have a car at all times, were added in. There could of course be seasonal variations in these estimates although the Witney seasonal range of consultations to return patients without cars was very narrow .

ii. Marital status

One quarter of the home visits to single, married, and widowed/divorced contacts aged 60 years and over, were classified as 'special transport' (Table 41). (There were very few 'unnecessary in the present circumstances' visits to any marital group.) Once again the 60-69 year old widowed were over represented in the special transport cases compared with their representation in the total survey contacts but the widowed in the two senior age groups were recorded in proportions very similar to their overall representation. Finally, about one third of the estimated average weekly load of 'doctor initiated' special transport cases would be widowed and divorced persons.

iii. Children under five years of age in the home of the patient

The presence of a preschool aged sibling in the family did not appear to create unnecessary demands for home visits to persons also aged less than five years. In some respects, the reverse situation occurred. There were considerably higher proportions of necessary home visits to patients who had young children in the household than to patients without such household members (Table 42). This applied in every decade in which there were significant numbers of patients with preschool siblings or offsprings in the family, (i.e. between 0 and 39 years). There were 42 ' unnecessary in the present circumstances' visits to contacts with a child under five in the household, and half of these patients were aged nine years or less. As only 10.1 per cent[1] of all the 'special transport' cases were contacts with a household member under five years of age, there would not seem to be an additional need in the immediate future to provide creche facilities in the health centre for transport patients and their families should special bus services be provided.

iv. Married women working

There were too few home visits to employed married women to draw any conclusions about the 'necessity' of such consultations.

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[1] that is 35 over 8 weeks

Summary

Four items of a social nature were collected from each consultation and from the analyses the following points emerged.

a) The private car data showed that only in a few decennial age groups for either sex, did contacts who had cars available to them at all times have surgery/home visit ratios higher than those for contacts with limited or non existent access to cars.

b) Full interpretation of the marital status data was frustrated because of the inability to derive medical contact rates for the marital groups in each age decade. Widowed and divorced contacts were concentrated in the over 60 year age decades; the more senior the decade, the higher the proportion of widowed/divorced person in the total contacts, and the greater the percentage of females amongst the widowed.

Widowed/divorced women contacts in the 60-69 year age group had lower surgery/home visiting ratios than married women of the same age. However this pattern might be partially explained by the finding that almost three quarters of these widowed contacts did not have a private car available to them compared with only two fifths of the married women. In the following decade the proportions of married women and men, without a car had risen to a level similar to that of widowed women, about two thirds.

c) Patients under five years of age with other household members of preschool age were slightly more dependent upon home visits than patients in the same age range without young siblings. Any assumptions that preschool age patients with equally young siblings, who did not have a car available to them at any time, would be high consumers of home visits were dispelled; their surgery/home visit ratio was 5.4. Preschool household membership did not emerge as a marked characteristic of patients who received home visits classified as 'unnecessary in the present circumstances'.

d) Working married women looked to be in an advantageous position to attend the health centre, as they averaged nine surgery consultations for every home visit.

e) Persons most likely to benefit from the provision of special transport were those without the services of a private car, four fifths of whom were over 60 years of age.

THE DOCTORS' CONSULTING AND TRAVELLING TIME AND THE SCOPE FOR SAVING SOME OF THIS TIME BY MEANS OF A TRANSPORT SERVICE

The first part of this section discusses the way the doctors distributed their time between consulting (either in the surgeries or in the patients' homes) and travelling in the course of home visiting. Included in this is a discussion of average consulting times per patient for surgery sessions of various sizes and various points in time. It was possible in the case of home visiting to look at the average time spent on consultations for contacts of various types, for example, new visits as opposed to return visits, 'necessary' visits as opposed to 'unnecessary' visits - the examination of these data forms the second part. Our data also permitted us to estimate how long, on average, journeys between the various parts of the practice took. Thus in the third part, estimates are presented of the time which the doctors could have saved if a transport system had been introduced and one or both types of 'unnecessary' home visits were transferred to the surgery. The estimated saving of time has been compared with the actual time spent by the doctors pursuing the activities under discussion to see what impact this saving would have had on the practice. (Note, in discussing just travelling time and consulting time we are excluding the proportion of the doctors' working time spent outside the surgery sessions on activities such as administration.)

Distribution of time spent in consulting and travelling

The average weekly total time spent by six doctors consulting (in the surgeries or in patients' homes) and travelling in the course of home visits was 186 hours. This total was made up of 106 hours in the health centre, 2 hours at the branch surgery, 46 hours consulting in patients' homes and 32 hours travelling. The average consulting time per patient in the health centre was 8.2 minutes (about a minute less in the branch surgery) - these times would include some time waiting between successive patients, and 11.5 minutes in patients' homes to which must be added an average of eight minutes travelling time per patient.[1] So in a sense this confirms one reason for undertaking the

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[1] The average weekly total surgery consulting time per Witney doctor and average home visiting time per patient (including travelling time) were similar to published figures for other practices - see Royal College of General Practitioners (1970), Eimerl and Pearson (1966). However, the Witney average consulting time per patient was slightly on the high side compared to the findings of Bevan and Draper (1967), Royal College of General Practitioners (ibid) and Buchan and Richardson (1973).

study - each patient seen in the home occupied on average nearly 20 minutes of the doctors' time compared with only just over eight minutes in the surgery. It would, of course, be naive to assume we can save a travelling time of eight minutes for each consultation transferred from the patient's home to the surgery since the fewer the number of patients visited generally the longer the travelling time between calls. We deal with this matter further, below.

The individual doctors (Table 43) spent at least two minutes longer on average for each consultation in the home[1] than in the surgery. This may have been due to differing medical conditions seen in the home and the surgery and it may have been due in part to the social courtesies of entering and moving about homes which were not directly related to the consultation. We make the above fairly cautious statement about the differences in the average consultation times between the home and the surgery because some doctors (in particular 5 and 7) seem to have recorded part of their travelling time as consultation time - since there were a number of occasions when successive home visits, often geographically separated by some miles, were recorded as taking place without any travelling time in between (see Appendix 2).

The character of the doctors' work in winter differed somewhat from the summer. It will be recalled that the number of home visits and to a lesser extent surgery contacts was heavier in January/February 1968 than in the July/August 1968 recording session. Generally in the summer the average home visit consulting time increased due in part to a diminished demand for home visits so enabling the doctors to spend more time with each patient. The average travelling time was also higher in the summer partly as a consequence perhaps of a reduction in the pressure of work, but also because with fewer visits to make in a given period there would in general be a greater distance between successive visits on a round (other things being equal).

The relationship between pressure of work in terms of numbers seen in a given time and average consultation time is further illustrated by Table 44 which shows the average length of consultation time per patient for surgeries of various sizes. This table also indicates the proportions of patients seen at surgeries of such sizes. In table 45 we give average numbers of patients per surgery and average consultation time for sessions at various times of the day and various days of the week. (Afternoon sessions were normally ante natal sessions.) The table confirms the impression that Mondays and Fridays were very busy both in terms of numbers of patients at the surgery and time spent consulting; Wednesday also was fairly busy.

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[1] excluding travelling time

Home visiting in normal working hours

This sub-section concentrates on home visits made only in normal working hours; that is, all home visits in rounds started after 8.00 a.m. or before 7.00 p.m. on weekdays and between 8.00 a.m. and 1.00 p.m. on Saturdays. In all 1,546 out of 1,906 visits fell into this 'routine' category as distinct from out of hours calls, and these took on average 59 hours 32 minutes per week with a minimum in a summer week of 42 hours 35 minutes and a maximum of 74 hours 24 minutes in a winter week. (These figures include travelling time.) For individual principals the weekly time spent on 'routine' home visiting ranged from 9 hours to 12 hours per week. Visits involved an average consulting time of 10.8 minutes plus an average travelling time of 7.7 minutes. However in winter the corresponding figures were 10.0 minutes and 7.2 minutes respectively, whereas in summer they were 12.2 minutes and 8.4 minutes (out of hours visiting times and travelling times were rather larger)[1] - see Table 46.

Monday's visiting (travelling and consulting time combined) took easily the longest time followed by Tuesday's. There was not much to choose between the other week days in this respect. The now familiar pattern of consulting time and travelling time per patient being lowest on busiest days recurs.

By and large there was not much difference between the length of time spent in the homes according to type of consultation, though chronic returns took one and a half minutes more on average than new and acute return visits (Table 47). This was primarily a characteristic of doctors 5 and 6; there was a good deal of variation between the other doctors. There was however a rather more consistent tendency for the doctors to spend longer with the older patients than with the younger ones, especially the under 10s (Table 48). This may have been to do in part with the general tempo of social exchanges to the elderly and also with the character of their illness.

Clearly the length of time doctors took with 'unnecessary'[2] visits is

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[1] Eimerl and Pearson (1966) from week long surveys of 134 doctors in February and 92 doctors in August produced an average time per home visit consultation (including travel) of 15.3 minutes for the winter recording period and 17.6 minutes in the summer. By contrast, Buchan and Richardson (1973) surveying 22 Scottish doctors in urban, semi rural and rural practices found on average for 477 home visits that the total home visit time was 11.9 minutes comprising 5.6 minutes in face to face contact, 1.6 minutes entry/exit procedure, and travel, 4.7 minutes.

[2] includes home visits which could have taken place in the surgery either in the present circumstances, or if special transport were provided.

highly relevant to any assessment of a possible saving of time (since if they are recognised as such the doctors may quickly complete the consultation). It would appear however (Table 49) that in winter 'unnecessary' (special transport) visits took slightly longer than necessary visits (10.7 minutes as compared with 9.8 minutes), whereas in summer the reverse was the case (10.9 minutes compared with 12.7 minutes). Nevertheless the length of 'unnecessary' (special transport) consultations in the home was on average about two minutes longer than the average consultation time in the surgery both in winter and summer. Individual doctors varied; doctor 1 consistently spent a little less time per consultation with special transport patients than on patients seen in the surgery; conversely doctor 2 and also doctor 7 spent considerably longer with such home visit patients than with patients seen in the surgery. The remainder spent generally a little longer with these 'unnecessary' visits.

Home visits classified as 'unnecessary in the present circumstances' were on average marginally shorter than those which would have been 'unnecessary if transport had been available' (Table 49). This finding was probably age related, special transport visits being predominantly to the elderly whose home visits were on average longer than those to the young (who formed a sizeable component of the 'present circumstances' load).

Generally the doctors' average visit times per patient were longer in areas poorly served by buses than in those better served. This was true broadly speaking of 'necessary' visits and of 'unnecessary' visits of both types (Table 50). Given the earlier finding that patients most remote from the health centre in terms of bus services made fewer demands on the doctors, it may be either that the conditions they did present were more severe or that the doctors (or patients) felt that while the former were in their homes they would take the opportunity to deal more fully with ailments than might have been the case for patients who could easily get to the centre.

Estimated time saved if 'unnecessary' home visits could be transferred to the surgery

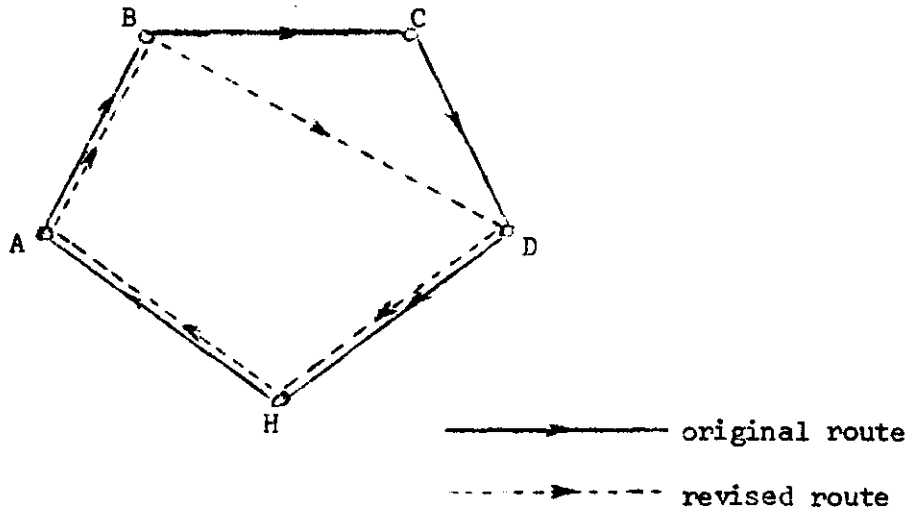
If certain home visits had been translated into surgery consultations at the health centre, the time saved would have arisen from two sources -

a. a saving on travelling time; since the number of home visits would have been reduced

b. a saving in consulting time; since consultation times in the surgery are generally shorter than those in the home.

An estimate of time saved from source b. must inevitably be little more than informed guess work. However, the travelling time saved can in principle be estimated in a less arbitrary fashion. Since most of the time saved is likely to be derived from this latter source, this is the area to which most of our attention has been directed. We will anticipate our conclusion to the extent of saying that our analysis suggests that there was relatively little time to be saved by introducing a transport system to remove 'unnecessary' visits. We have therefore to some extent tested this finding by putting in rather generous allowances for the time which might be saved by transferring home visits to the health centre and thereby reducing the consultation time - we do this to show that even under rather favourable assumptions time saved is modest.

Let us, however, return to a study of the travelling time. Basically the travelling time is saved along the lines of the following example.[1]



Suppose the doctor visits four patients located at A, B, C and D on the diagram starting and finishing at point H the health centre. His original route would have consisted of the links HA + AB + BC + CD + DH; now let us suppose that the visit to C is eliminated by the transport service. Then the new round would consist of the following links, HA + AB + BD + DH (we assume that the doctor arranged his visits in the same order apart from excluding C). So the time he would save is the time taken to travel the links BC + CD less the time taken to travel the link BD. To estimate the time taken to travel alternative distances such as BD we have used the average of all the non zero[1]

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[1] Fuller details of conventions used are given in Appendix 2.

durations recorded by all the doctors in travelling that route in either direction. Likewise in the calculation, average times to travel BC and CD are also used (though we could of course have used the actual times recorded to travel BC and CD - we judged it better not to mix actual times and averages however). So the figure we quote for time saved is an average time saved in a round of this description if one visit, that is to C, is removed. Our estimate of the total time saved for a given doctor in a given period is then the sum of the average times saved for each round in ordinary working hours (that is excluding night calls and 'out of hours' calls at weekends). We simply sum such average times saved for each doctor to obtain the grand total time which we estimate might be saved on travel by removing 'unnecessary' visits.

Let us suppose first that we exclude from the visiting rounds only those visits which were designated by the doctors as 'unnecessary' if transport had been available. The time saved per doctor in winter and summer as estimated by the above method are displayed in Table 51.

Overall we see that in the winter recording period, 200 'special transport' calls could have been transferred to the surgery with an estimated saving on travelling time (i.e. source a.) of 15 hours 38 minutes. In summer 132 similar calls could have been saved with an apparent saving in travelling time of 10 hours 59 minutes. So in total over the eight weeks of recording 26 hours 37 minutes in travelling time could have been saved on 332 visits. If we suppose that each doctor would change the consultation time for an 'unnecessary' visit transferred to the surgery to the average surgery consultation time in the recording session (i.e. winter or summer) in question, this would mean a further saving of 14 hours 23 minutes.[1] In total therefore, under this assumption

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[1] This estimate of consultation (i.e. source b.) time saved is likely to be an over estimate for two reasons -

(a) We have included in it an element of travelling time in the case of doctors 5 and 7 (i.e. those who were prone not to record any travelling time between visits), although we have effectively already made up for this in estimating travelling time saved by basing these only on non zero travelling times between locations in the study.

(b) The conditions which the patients present in the home may have required the extra time wherever they were seen.

However, on the other hand the increase in numbers attending the surgery brought about by transferring home visits to the surgery may have the effect of increasing in a localised sense the pressure of work on doctors and so reducing their average consultation times (we have made no allowance for this in our calculations).

about 41 hours could have been saved over the eight weeks or about 5 hours per week. About half the savings would have been made on Mondays and Tuesdays. Doctors 7 and 3 (whom it will be recalled looked after the same patients) were the doctors for whom the biggest saving might have been made. Doctors 4 and 5 would have made relatively small savings (Table 52).

Let us now go one step further and remove from the visiting rounds also all the 'unnecessary in the present circumstances' visits (in addition to those 'unnecessary if trasnsport were available'). The saving would then be 38 hours 25 minutes in travelling time and 19 hours 57 minutes in shorter consultations in the surgery, that is 58 hours 22 minutes in total over the eight weeks, or about 7 hours per week for all the doctors.

Thus even on the most favourable assumptions only just over an hour per week per doctor would be saved in consultation and travelling time by the introduction of a transport service.[1] This compares with an average per doctor of 31 hours consulting and travelling time per week of which about $5\frac{1}{3}$ hours was spent travelling.

This estimate of doctors time which might have been saved had a transport service been available to transfer these'unnecessary'visits to the surgery depends on a number of assumptions. In the next section we examine these assumptions further, comparing our results with those of other workers and we consider whether the evidence available suggests that a practice transport service would have been worthwhile.

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[1] We have not taken account in making these statements the standard errors associated with our estimated saving in travelling time. These would add a further element of uncertainty to the estimates - their interpretation is however problematical and we have not pursued the matter here - they do not alter our conclusions.

DISCUSSION

The study arose from the feeling of the Witney doctors that certain patients were, for reasons other than their personal state of health, unable or unwilling to travel to the health centre at Witney to see them, so that any direct consultations between these patients and the doctors tended to take the form of a home visit. The doctors also thought that it would have been better to see certain of these patients in the health centre rather than the branch surgery or at home because this would have enabled the doctors to call immediately upon the centre's facilities. Thus a transport service which carried appropriate patients into the Witney centre seemed an attractive proposition in principle, since this might reduce the amount of time spent by the doctors on relatively unproductive tasks such as driving. A transport service might also eliminate the need for the branch surgery at Standlake used by the practice for two sessions a week when the study was first proposed, and might enable more to be done for some patients at the time of the consultation.

The Witney study was primarily concerned with identifying the need, if any, for a transport service in the practice. Because need has to be balanced against cost, later in this discussion we also review the evidence from other studies on the expense of running transport services in general practice.

The patients for whom a transport service would seem to be appropriate

i. Home visit patients who could have attended the surgery if transport had been available

The Witney doctors identified almost one fifth of the home visits made in the study period as 'unnecessary on medical and social grounds if transport had been available to bring patients to the surgery'[1]. Two thirds of these 'unnecessary' visits were to persons over 60 years of age. Also almost two thirds of the home visits to 'special transport' contacts were doctor initiated - most of these being chronic return consultations. In

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[1] The doctors assessed each home visit according to the patient's mobility : that is, a home visit was necessary, or it was 'unnecessary' as the patient could have attended surgery either in the present circumstances or if special transport were provided (see page 91).
When comparing our results with other studies it must be remembered that the Witney doctors screened all new requests for home visits.

the case of the new visits 72 per cent required attention the same day as the request was made. More than a third of the visits were in respect of respiratory illness and in another 20 per cent, the main complaint was circulatory disease. The remaining diagnostic category featuring to any extent among potential transport users was Diseases of Bones and Organs of Movement.

The presence of children under five years of age in the patient's family, even when both the patient visited and at least one other member of the family were in this age group, was not associated with a noticeable potential need for transport to the surgery. In the age group 60-69 (but not among older patients) widowed persons appeared more likely to need transport to the surgery than married patients. Single patients, i.e. never married, (there were relatively few of these) over the age of 60 generally seemed more likely to need such a service than married patients in this age group. Not unexpectedly nearly two thirds of the patients (rather more in the case of the over 60's) who could have attended the surgery did not have a private car available to them at all times and almost all the rest only had one available 'sometimes'[1].

Sixty per cent of those who could have attended if transport had been available lived in Witney town, that is, within a mile or so of the surgery, and the rest in the surrounding rural areas. These proportions were roughly the same as the urban/rural distribution of the total practice population of the over 60's in the practice population.

The doctors classified a higher proportion of their visits in rural areas as 'unnecessary if suitable transport were available' than their visits to patients in Witney town. Generally in the rural areas of the practice the better the bus service, the higher the proportion of visits which could have been transferred to the health centre if transport had been available - the opposite of what we might have expected if practice transport were seen as a supplement to public services. Standlake, the area served by the branch surgery stood out in this, as in a number of other contexts, as having the highest proportionate demand for transport services.

About three fifths of the visits which would have been 'unnecessary' if transport had been available took place in the winter recording session - about the same proportion as that of all visits recorded.

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[1] This in the present context meant at times not normally compatible with surgery hours.

The doctors' data implies that on average 43 visits per week in total (i.e. seven per doctor) could have been translated into surgery consultations if a transport service had been available, and assuming that all these patients accepted the use of transport. The seasonal weekly averages were nine per doctor in winter and six per doctor in summer. For individual doctors the average number of such visits per week ranged from three to twenty -one (three to eight if doctors 3 and 7, covering the same patients, were excluded). Virtually all the home visits which the doctors classified as suitable for surgery transport took place in routine practice working hours (see page 61 for definition).

ii. Home visit patients who could have attended the surgery in the present circumstances

Another class of patient who might have wished or could have been induced to use a transport service was identified. The doctors classified a further ten per cent of their home visits as 'unnecessary in the present circumstances' and this judgement was frequently made when there were no transport difficulties observed to prevent the patient attending the surgery. These patients were much younger than those with transport difficulties, only 20 per cent being over 60 years of age and about one third were under 10 years of age. Presumably, in the case of the children the decision to call the doctor was made by the parent, and so it was the age group 20-59 who requested the majority of 'unnecessary in the present circumstances' visits.

Over 70 per cent of the contacts described as 'unnecessary in present circumstances' were new consultations and most of these new contacts needed attention the same day as it was requested. Indeed about 10 per cent of the unnecessary visits related to accidents. A further third were made in connection with patients with respiratory diseases. Home visits to patients in whose families there was at least one person (other than the patient) under five years of age were much less likely to be classified as 'unnecessary in the present circumstances' than contacts where this was not the case.

Again this type of 'unnecessary visit was proportionately less often found among visits paid to patients in more inaccessible parts of the practice, more than 70 per cent of them occurring in Witney town itself. About one third of these visits took place outside routine working hours and when these were screened out, there were 88 winter visits and 54 summer visits which might in principle have been translated to the surgery if the patient concerned could have been persuaded to use a transport service.

If these patients were added to the list of users of the hypothetical transport system, then the load would be around 12 to 13 patients per winter week per doctor, and eight to nine in summer. (This is assuming in the case of these predominantly new contacts that the practice organisation could identify them at the time of the request for a visit.)

iii. Other groups of patients who may choose to use a transport service

There were other potential users of a transport system; for example, the patients who attended the surgery during the study period, but with difficulty. We did not ask patients explicitly about this but from information about their method of transport to the health centre we can obtain some indication of the size of the demand. Firstly, 261 or 4.2 per cent of the patients who saw the doctors, travelled to the health centre in neighbour's cars and a further 43 (0.7 per cent) by taxi[1]. Additionally, 139 of the nurse's patients used these methods. 118 of these health centre attenders (to doctors and nurse) were over 60 years of age - women over 70 in particular. Numerically they were evenly divided between those living in Witney town and those in the surrounding areas - though proportionately more came from areas badly served by buses to and from Witney and for once Standlake, despite its branch surgery, fitted into this general pattern. So there was on average a further 50 or so potential users per week of the transport service, that is on average about eight or nine per doctor. Note that this group would not constitute an extra load on surgery premises.

Surgery attenders over 70 years who travelled to the centre by bus numbered 62 over the eight weeks of the study. Many would no doubt have preferred to use something more like a taxi service (which is really what most practice transport services are) had it been available[2].

If we add together all the possible users discussed above, of a transport service, we arrive at an average of 21 patients per doctor per week, though some of these might not for one reason or another wish to avail themselves of this service.

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[1] Predictably nearly all of these patients were without a private car always or sometimes (i.e. not available in routine surgery hours).

[2] There are other groups of potential users who could not be identified by the survey. For example there are the patients who merely made indirect contacts with the health centre by phoning for advice. Maybe, if transport had been available, they might have chosen to personally see the doctor. Again there are possibly persons who did not seek medical care at all because of transport difficulties, and an unwillingness to ask the doctor to make a domiciliary visit.

The experiences of practices operating transport services

The results from Witney discussed above are no more than predictions since a transport service was never introduced. How do these predictions compare with results from practices actually operating transport services. Some findings are set out in Table 53.

The number of patients per week per doctor carried by the practice transport service cited in the table ranged from 3 to 16. This was considerably lower than the maximum figure of 21 patients per week per doctor suggested for Witney if all those identified as potential users had in fact wanted to make use of a transport service. The findings of Lance (1971) offer two clues as to why this difference might have arisen. The first is that in the case of requests for new visits as many as half the patients in the practices studied by Lance who were offered transport, refused the offer. Secondly, it appeared that the proportions of home visits plus 'transported' patients were no greater and sometimes lower than the proportions of home visits before the advent of the transport service. Since the overall volume of work in the practices was little changed, this suggests that few patients who travelled with or without difficulty to the surgery before the introduction of practice transport subsequently asked to use this service.

On the other hand both in the study by Lance (1971) and that by Floyd (1968) the relatively high proportions of patients carried in practice transport who were respectively under ten years of age and/or new contacts suggests that at least some of the home visits described in the Witney study as 'unnecessary in the present circumstances' could have been transferred to the surgery if transport had been available, especially since the majority of new visits to children classified as 'unnecessary' come into this category.

It would appear then that the most plausible estimate of the number of Witney practice patients who could have been carried weekly by a transport system had it been operating at the time of the study, would lie between the estimate of visits described 'unnecessary if transport were available' and the estimate obtained after adding in those classified as 'unnecessary in the present circumstances', that is nine to twelve patients per week per doctor in winter and six to eight patients in the summer. (Any service would of course have to allow some additional space for persons accompanying patients.)

Possible benefits for the patients whose consultations have been transferred to the surgery

The Witney doctors commented before the study commenced that they sometimes had to ask a patient seen in a home visit, to attend the health centre to receive treatment which could not be provided in the home. In the study however hardly any of the 'unnecessary' home visits of either type were such that the facilities of the centre were needed for the proper treatment of the patients concerned.

Reports from practices after transport has been operating have suggested a number of possible benefits for the patient. These suggestions have arisen from general observation and have not been substantiated by specific investigation. For example, it has been argued by Floyd (1968) among others, that the surgery consulting room can often be a much more satisfactory environment in which to examine patients especially elderly patients. Also, it has been claimed (Floyd (1968) and Smith and Seddon (1968)) that it is a benefit to the housebound patient to have been taken out of the house for surgery consultations, if only to give them an outing. Against these benefits is the increased risk of the spread of infection if patients are brought to the surgery by a practice vehicle rather than being seen at home. There is also the possibility that a patient may come out to the surgery in practice transport when not really well enough to do so - a decision in which the practice has had some part by sanctioning the use of its transport. This emphasises the importance of the person offering transport if it is not the doctor, being alert to such dangers. More generally there is a risk that patients may feel that this is just another attempt to limit the general practitioners' services available to them though there seemed to be little evidence of such an attitude in the case of the patients approached in the surveys conducted by Lance (1971) and MacDonald et al (1974).

The advantages and disadvantages to patients' health, welfare and convenience of seeing them in the surgery instead of in their homes requires further study as does the question of the patients' attitudes to being asked to reduce their demand for home visits and rely more on such devices as a practice transport system.

The working time of the doctors which might be saved by a practice transport service

The main reason for considering the introduction of a practice transport system in Witney and indeed in other practices was the possibility that it might appreciably reduce the amount of relatively unproductive driving time to patients visited in the home. If the time saved in this way had been substantial then by appropriately redistributing it, considerable benefits might have accrued both to patients and doctors.

However as we have shown (page 65) the elimination of all 'unnecessary' visits of both types only implied a time saving for the doctors of a little over one hour per week per doctor (slightly more in winter and perhaps less in summer). This assumed that the doctors saw the patients in the surgery themselves as opposed to sharing some of the work with the centre nurse. This finding agrees with the conclusions of the two studies in which time saved by a practice transport system (actually operating) has been considered. Floyd (1968) referring to a three principal practice in a London borough estimated the saving as being one to one and a half hours per doctor per week (basing his calculations on the proposition of Eimerl and Pearson (1966) that a home visit took on average ten minutes longer than a surgery consultation and assuming that this time could be saved in full). Smith and Seddon (1968) estimated a time saving of one and a quarter hours per doctor per week for a scattered urban area with a high proportion of elderly persons. This calculation was based on the estimate that surgery consultations took place at the rate of eight per hour and home visits at three to four per hour in this practice.

The estimates of time saved quoted by Floyd (1968) and Smith and Seddon (1968) are likely to be over estimates since they were both based on the assumption that the average time saved by transferring a home visit to the surgery was the difference between the average time including travel and consultation to make a visit and the average duration of a surgery consultation. If X visits are transferred then this line of argument would suggest that we simply multiply the average time saved for one visit by X to obtain the total time saved in this way. In fact, however, we are dealing with a problem similar to that of marginal costs of production as encountered by economists. The main reason why home visits take longer than surgery consultations is that the doctor has to spend time travelling to see his patients. If a home visit is eliminated from a round the total driving time involved may still be almost as great (see page 63). Only if the entire

round is eliminated can one safely assume that the whole of the corresponding driving time will be saved.

A weekly saving of one to one and a half hours per doctor resulting from a transport service, that is less than three per cent of the doctors' working week does not seem very promising. Indeed even this small saving is not a well defined continuous period of an hour or so but fragments of time spread more or less randomly over the week. However, for a practice of Witney's size the predicted total saving of time per week would be somewhat over six hours implying at least some easing of the pressure on the principals - but what are the costs involved and who should meet them?

The costs of running a practice transport service

The practices of Floyd (1968) and Smith and Seddon (1968) both used private saloon cars in their transport services belonging either to the practice doctors or sometimes, in the case of Floyd's practice, to the secretary. In Floyd's practice the driver engaged to operate the doctor's car, was paid £1 per morning while the secretary received a mileage rate of $2\frac{1}{2}$p[1] when using her own car. Floyd reported that over two years, 1966 and 1967, the average annual cost to the practice of the driver and the mileage payment to the secretary amounted to £163 for 190 hours of doctors time saved and about 1,100 patients were carried (that is 1,100 surgery contacts who were conveyed to the surgery and home again). It is obviously difficult to estimate precisely the costs of petrol used and wear and tear suffered by the doctor's car in this situation over and above those which would have been incurred if he had done the visits himself. However, Floyd concludes that 'when some allowance is made for petrol and wear and tear of the car the cost was a little over £1 an hour saved', or about 18p per patient carried.

Smith and Seddon (1968) estimated the cost per doctor's hour saved in 1965/66 in their practice as £1.75 or 22p per patient.[1] This was based on six months experience during which the cost of a driver employed for three-hour sessions amounted to £84 and the car costs were calculated at 3p x 900 (where 900 miles was the estimated additional mileage assuming each patient would have otherwise required a visit from the doctor). They felt that

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[1] Prices have been converted to new pence. However, the money values are those prevailing at the time of the fieldwork.

if the service had been operating at full capacity, i.e. 36 patients per week, the costs would have been £1.20 for each hour saved.

In the five experimental schemes described by Lance (1971) each practice had a mini bus, or in one case a Land Rover, seating 12 to 15 persons. Three of the five vehicles involved were fitted with radio telephone equipment linking them to the surgery (though in one case this was later removed). The running costs per patient carried in the first year of operation varied from 35p to £1.65 over the five practices; the range in the second year was reduced to 36p to £1.25[1] (we are speaking in terms of 1968/69 prices). Lance did not provide estimates of the doctors' time saved.

Even allowing for some inflation in the period 1966 to 1969 it is clear that the use of mini bus type vehicles in practice transport services put up the cost per patient carried considerably. One of the practices in Lance's study was in fact that to which the paper of Floyd (1968) related and the cost per patient carried in the substituted mini bus was 36p in both years of the study compared with the figure of 18p when the practice used a private car. One obvious reason for the increased cost of the mini bus services was that these vehicles during the period of Lance's study were seldom more than one third full, that is usually only carrying three or four passengers - patients and escorts - scarcely more than an ordinary car. Moreover Lance made no allowance in these figures for the capital cost of providing special vehicles for use exclusively by the practice transport services. Even in 1968 the purchase price for each vehicle was in the range of £790 to £1,057 for each vehicle plus a further £400 approximately for radio telephone equipment where fitted. Structural alterations and equipment and furniture in the surgeries were additional costs.

If we add on even the very modest sum of 10 per cent per annum of the capital outlay for the vehicles (for depreciation/replacement cost, and interest forgone on capital) as a charge against the transport service, this would increase the cost per patient carried by between six per cent and 20 per cent. For example in the case of the practice of Dr. Floyd and colleagues the cost of the mini bus transport service per patient carried would increase from the figure of 36p quoted by Lance (1971) for the first year of service

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[1] The persistently high running costs per patient in this practice were attributed to the geographically dispersed population over a 20 mile radius preferring traditional home visiting.

to 44p if this charge was added in.

The cost of radio telephones in the mini buses amounted to between 40 and 50 per cent of the price of the basic vehicle (and there may well have been running costs in terms of operators at the surgery). Lance (1971) reported varied opinions on the usefulness of radio telephones in the mini buses, but even the most enthusiastic doctors suggested only about one in ten of the patients carried were notified to the driver by radio telephone[1]. If an estimated 10 per cent per annum of the capital cost of the radio telephone equipment (£352 to £450) is set against the transport service, this means that the 'surcharge' per patient notified (one in ten of all carried), was about 24p and 28p in the experimental urban practices A (Floyd) and B respectively, and 59p in the experimental rural practice E. (Note that we have already included the cost of radio telephones where applicable in our annual estimates of capital depreciation of vehicle and equipment, cited above). In the practice A (Floyd), for example the radio telephone contributed about 2p to the cost of <u>every</u> patient carried. Unless radio telephones were already installed in the practice, in which case the marginal cost of extending the system to the practice transport vehicle would be relatively small, there would seem little justification in economic terms in providing this facility in a transport service. In urban situations the distances travelled would mean that it would be quite quick to make an extra journey for an additional patient at no greater cost probably than the 'surcharge' in 1969 prices, quoted above. In rural circumstances if the driver's round took him past another 'late customer' the radio telephone would be useful but presumably the customer is just as likely to be on another side of the practice.

The costs quoted above by Floyd (1968), Smith and Seddon (1968) and Lance (1971) were in terms of money values prevailing at the time of the fieldwork of the studies. Today as a result of inflation the corresponding costs would be much higher. In fact we can safely say that costs would have at least doubled since 1967. Certainly the mileage rate paid of around 2½p to 3p as reported by Floyd and Smith and Seddon would now be nearer 6p to 7p and wage rates have also doubled over this period[2]. On this assumption the service described in Floyd (1968) would cost about £2 per hour of doctor's time saved or 36p per patient carried while the

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[1] Though one practice C working in association with practice D, which took over the radio telephone system removed from practice D, did in rather special circumstances use it for considerably more of the patients carried in the second year of the study.

[2] <u>Economic Trends</u>, April 1974 - Whether based on manual workers incomes or average earnings of all employees.

corresponding figures for Smith and Seddon's service would be £3.50 per hour of doctor's time saved and 44p per patient carried. Lance (1971) did not estimate the cost per doctor's hour saved in her studies, but after allowing for inflation in the period 1965 to 1969 it would appear that the cost per patient carried in her experimental schemes were at least one third higher than those quoted in Smith and Seddon (1968) and two thirds higher than those quoted in Floyd (1968)[1]. This suggests that the mini bus service in practice A (Floyd) would cost in 1974 terms just under £4 per doctor's hour saved or about 60p per patient carried[2]. Inflating Smith and Seddon's figures by a third produces a cost per hour of doctor's time saved of just under £5 and a cost per patient carried just under 60p (though this is a somewhat more speculative calculation). In both cases no account has been taken of capital costs and we have in any event tended to err on the low side in estimating the extra costs of using a mini bus over an ordinary car in a practice transport service, thus these figures of £4 to £5 per hour of doctors' time saved and about 60p per patient carried, must be taken as being very much on the low side. Indeed looking at some of the other data provided by Lance (1971) it is clear that the cost per hour saved could be much higher in 1974 money terms, perhaps as much as £8 or £10.

We have further evidence about current costs of a transport service in a group practice. A group practice in Bournemouth with four principals and a full time general practitioner trainee is currently operating a transport system on a voluntary service basis (Fisher and Ballard (1974)). A driver is providing his time and the use of his car to transport patients to the surgery five mornings per week. His only reimbursement is for petrol. (The driver has a full comprehensive insurance policy, the cost of which he bears.) The practice serves an urban catchment area five to six miles in radius and the car operated is of 2,000 cc capacity able to transport four persons plus the driver. About 40 patients, plus another 20 or so persons accompanying the patients are transported to and from the surgery weekly and the cost to the practice for the petrol alone is 25p to

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[1] Economic Trends, April 1974 - In this case we are basing the inflation factor on earnings but not on other costs of running vehicles.

[2] In 1973 the cost of the mini bus service amounted to £849. 1,970 patient transportations were made at a cost therefore of 43p per patient transportation. This figure excludes any allowance for depreciation of the mini bus and does not reflect the major increase in the price of petrol which took effect in 1974. Wage costs also appear to have been fairly stable in the period 1968 - 1973 (Floyd 1974).

30p per patient, or £10 to £12 per week. Of course, against this must be offset the unknown additional petrol costs the doctors would bear if they carried out home visits to these patients.

The data on costs provided by Lance (1971) suggest that other factors (unknown) than the geographical dispersion of practice population effect the costs of the transport service. The highest costs reported were admittedly from a rural practice with a very scattered population (over 20 mile radius), however, the next highest costs were those experienced by a relatively compact practice in Greater London (four miles radius). Taking into account also the differences between the costs estimated by Floyd (1968) and Smith and Seddon (1968) it would appear that the costs per patient carried (predictably) and (less obviously) the cost per hour of doctors' time saved were greater for scattered rural practice populations than compact urban practice populations.

Are there other advantages of a transport service which outweigh the costs?

There are many reasons why individual doctors or practices may wish to introduce at their own expense a scheme such as a practice transport service which it is hoped will reduce the time spent by the doctor on 'unproductive' or 'unnecessary' work. Thus, a doctor might wish to reduce the length of his working week in the practice either to follow other professional interests, for example, by taking on clinical sessions at the local hospital (Smith and Seddon (1968) and Floyd (1968)), or increase his leisure time. He might as was the case in the studies discussed in the Royal College of General Practitioners (1968) simply absorb the extra hours into his working week by spending a little longer generally with the patients whom he saw[1]. Binnie (1970) suggested that a transport service would have saved him sufficient

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[1] It is interesting to note the subsequent history of the transport services discussed earlier and described in Table 53. The service of Doctors Smith and Seddon continues to operate at about the same level as when introduced in a much enlarged practice (list up by about 50 per cent). It was felt that the service stimulated some patients to think in terms of attending the surgery using their own transport instead of relying on home visits (Smith 1974). The mini bus service operated in the practice of Dr. Floyd and colleagues, one of the practices studied by Lance (1971) is still running but its cost is causing concern. . However, the other four practices who participated in this study discontinued their transport services fairly soon after support from the Department of Health and Social Security was withdrawn at the end of the experimental period (Lance 1974).

time to enable him to take on 160 extra patients in his single handed rural practice. Each individual doctor would set his own value on the alternative use to which he put the time saved by the transport service, and some would attach more importance than others to the alternative use of time being sufficiently remunerative to pay for the transport service. Provided the doctor himself[1] is paying for it (apart from tax relief) and the transport service does not appear to be causing a net deterioration in the service he offers to his patients, the Department of Health and Social Security would presumably not wish to intervene generally to advise the doctors concerned on such matters especially since a transport service does not require special medical skills, only drivers and cars. (In the case of, for example, introducing physiotherapists into a practice it is not just a question of cost but of availability of trained personnel and accommodation for them, and here the question arises as to whether these scarce (but not particularly expensive resources) were being put to the most effective use by deploying them in this way as compared with some other role within the National Health Service.)

However, the Department of Health and Social Security have supported at least two studies (Lance (1971) and the present study) into practice transport presumably as a means of informing any decisions which might be taken on whether or not doctors should be encouraged to introduce practice transport and if so, what costs should be reimbursed to them from public funds. Here the costs of financing such services have to be weighed against the benefits accrueing from the doctors' reallocated activitites in these one to one and a half hours per week saved. If, for example, the doctor was available for the extra time in the surgery to see and make decisions about patients it could be argued that this may, to the National Health Service, be of greater value in financial terms than the proportional part of the doctor's current income because, for example, costly emergencies may be prevented. (See Arthur Andersen & Co.'s (1972) 'opportunity cost' valuation of a consultant's time in a similar context at between £5 and £10 per hour or yearly equivalent of £10,000 to £20,000, although in deriving this estimate, they ignored the costs of additional nursing and technical personnel needed both in the hospital and in the community when reducing lengths of inpatient stay.)

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[1] At present, the inclusion of vehicle drivers in the general practice ancillary staff team does not qualify for 70 per cent reimbursement of salary costs.

If this proposition, which has certainly not been verified in the case of general practitioners, is unacceptable it might be argued that introducing a practice transport service is a means of enabling a doctor to look after a list of patients on average two or three per cent larger than is at present the case. In financial terms this would have implications mainly in the medium term - what they are is hard to say; a policy decision of this kind may have some bearing on the per capita scale of a doctor's remuneration in due course and might or might not imply a marginal saving in the number of general practitioners which would otherwise have been trained per year at undergraduate and postgraduate (including mid-career) levels.

It would be wrong to consider practice transport in isolation from other innovations in community care which the Department may be examining with a view to financing on a wider scale - for example, some extension of the attachment of para-medical staff in general practice or better investigatory services for family doctors. Ideally the Department will wish to spend any extra money available to it (and there is of course little or none of this at present) to secure the best possible improvement in the services which it provides. Practice transport services have the advantage, as we mentioned, that they demand no scarce and specialised resources such as trained personnel or surgery accommodation (except possibly to cope with the larger numbers of patients using the surgery). However, the chief 'benefit' of transport services which we have identified, namely, saving the doctors one to one and a half hours per week is somewhat elusive in character in that the saving is fragmented over the week and may be easily lost. Accordingly, even without any evidence about the costs and benefits of alternative innovations which might be introduced into the National Health Service, the basic practice transport service seems a non-starter as a competitor for the Department's resources. (By a basic practice transport service we mean a driver and vehicle employed to bring patients to the surgery who would otherwise have been visited at home.)

The Standlake branch surgery and practice transport

Maintaining a purpose built branch surgery at Standlake which was used for two sessions and later one session per week by the Witney doctors only does not seem on the face of it to be a very efficient way of utilising capital. In principle it would seem a straight forward matter to dispose of the premises and instead to transfer the sessions concerned to the health centre at Witney by using a bus to collect Standlake patients and return them to a convenient point in the village - or possibly in the case of the elderly or disabled help them off at their homes.

There is some precedent for this type of arrangement. Sowerby (1969) Watson (1974) and Canvin (1971) have reported schemes to substitute multiple branch surgery premises in dispersed rural practices with either a transport system or a mobile surgery. Sowerby in North Yorkshire closed four out of five surgery sites (and moved the other plus his home to a more central location) and introduced a bus service to carry patients previously provided with a local branch surgery. The bus used by Sowerby was an 11 seater provided with driver, on a hire basis by a garage proprietor who ran the school bus service in the locality. The service provided for four return journeys per week for areas previously served by three of the closed branch surgeries and one for the fourth village which also used to have a branch surgery. In the second year of operation this was reduced to two journeys per week serving the first three villages, the service to the fourth remaining unchanged. The cost per year of the service was £320 for nine return journeys in 1965/66 and the same figure in 1966/67 for the reduced number of journeys (about the same costs as the rent of the closed surgeries). Sowerby estimated that as a result of these changes he reduced his motoring mileage by 6,000 miles per year, and that he saved about nine hours per week of his time. The fall in the total number of surgery attendances was, he believed, mostly 'accounted for by the fact that few patients now come to the surgery simply to collect medicines. The bus collects them for them'. The service was withdrawn about three years ago as the weekly average of patient journeys had fallen to around 15 and could be easily accommodated within home visit rounds. Dr. Sowerby had few regrets about closing the service as it had the overall desired effect of rationalising the provision of branch surgeries in this practice. Instead of operating five branch surgeries he now has one main surgery. (Sowerby 1974).

Another experimental scheme operating from a health centre opened in April 1974 at Deddington in Oxfordshire (Watson 1974). The practice area was previously served by seven branch surgeries which were closed and a bus service substituted. The service links ante natal sessions, child health clinics and geriatric/general surgery sessions on three afternoons of the week. The cost is borne equally by the Area Health Authority, the Charity Commissioners in conjunction with the local parish councils, and the general practitioners (a partnership of three). The bus (30 seater) is hired from a local bus company. The trial period has been too short to draw any conclusions about weekly averages of patient journeys or costs, but it is hoped to extend the service to link evening surgeries and chiropody clinics. One locality in the practice area is not served by the transport system.

So instead an arrangement has been made with the local bus company based upon tokens issued to patients to enable them to claim travel costs when attending the health centre.

The practice which Canvin (1971) described chose to replace five branch surgeries in their East Cornwall practice with a mobile surgery (converted coach) which they estimated would save some 400 hours per annum of general practitioners time or about 2½ hours per week per partner which could be applied to clinical work.

In the Witney situation if the branch surgery was closed there would not be an appreciable saving in doctors time; probably at best the time taken to travel the 11 mile round trip between the health centre at Standlake once a week. On the other hand there might be an increase in the number of home visit requests from Standlake branch surgery patients unwilling to travel into the health centre (see page 42). However by closing the branch surgery a certain amount of underutilised capital might be released. This on examination turned out to be small. The branch surgery although purpose built is very small and occupies such a restricted site that the only alternative use for it that had been suggested was as a store room for a nearby shop. In terms of running costs the practice received reimbursement of £100 per year as a notional rent which was also about what it cost them to run in terms of heating, lighting etc.

The majority of surgery contacts involving persons living at Standlake already took place at the Witney health centre (most of them came by car, but possibly some of these would seek to use a practice transport service). Only 146 patients were recorded at the branch surgery in the survey - on average about 12 patients per session. (The practice continued to hold only one weekly session at the branch surgery up to the present.) Many of these patients were without access to cars and so were cut off from Witney. The bus service linking the village with the health centre was very poor, a situation which did not improve in the 1971 revision of the local bus company's timetable. So if the branch surgery were to be closed, a practice transport service serving Standlake would seem a necessary alternative. Sowerby's paper brought out the point that hiring a bus and driver normally used for other purposes at times when they would otherwise be lying idle (that is, in between delivering children to school and picking them up) meant that extremely competitive terms could be secured. A practice bus service of this kind rests on the assumption that it is possible to plan in

advance for a fixed number of journeys taking a predetermined total length of time for journeys and waiting time at the surgery. There is the problem of what to do with patients waiting at a practice bus stop if the bus is over full. Sowerby does not state what happened in these circumstances, but no doubt a relief service of some sort could be provided though at some expense and inconvenience.

Our Standlake data suggested that two journeys per week by an 11 seater bus would generally more than cover the numbers served by the Standlake surgery when it was used for one session per week making some allowance for patients' escorts. Two such journeys on separate days of the week might be preferable to one large session at the health centre, not only to allow flexibility for patients in their choice of days for attending the doctor, but also to minimise accommodation problems for waiting patients and escorts at the health centre. The cost of providing a mini bus service to Standlake appears to be at least £3 for a round journey (based on recent quotations by local bus companies - it would probably be more expensive to make two round journeys on different days of the week than on the same day) which would be considerably more than the cost of maintaining and operating the Standlake surgery. This is even allowing for interest foregone on the estimated value of the surgery, that is about £2,000, only a fraction of which would be realisable in the event that the surgery and/or site were converted to another use.

An advantage of transferring Standlake branch surgery consultations to the Witney health centre would be the opportunity given to patients to see a doctor other than the one (doctor 3) who regularly undertook the branch surgery sessions[1]. The patients concerned might also benefit from being seen in the well equipped health centre though our study did not identify any patients seen at the branch surgery who were referred to the centre. Also they could have prescriptions made up at Witney chemists before returning home (no dispensing was done at the branch surgery, the prescriptions being brought back to one of the chemists in the town. The Standlake people organise a small rota and the person on duty comes in and collects the prescriptions for all the villagers.) Set against this would be the disadvantage to the patient of a five to six mile journey to and from Witney.

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[1] It was practice policy that doctor 3 would see at the branch surgery patients registered with any of the partners - the choice was left to the patients as to whether they saw doctor 3 at the branch or came to the health centre to see whichever doctor they were registered with, which might of course also be doctor 3.

The conclusion of this section is that in general the substitution of a bus service for a little used branch surgery merits serious consideration though it is more likely to be a cause for concern to the patients at least initially than a practice transport service designed only to transfer some home visits to the surgery (this final observation was based partly on the experiences reported by Sowerby (1969) and partly on our own impressions about the public reaction to the closure of branch surgeries and similar local institutions such as village schools). In the particular case of the Standlake surgery it is clear that the replacement of the branch surgery by a bus service would be quite expensive because of the higher running costs for a bus service as compared with the branch surgery. The cost factor would weigh less decisively against substituting a bus service for the branch surgery if it were seen as an interim measure as in the case of Sowerby's practice - that is the bus service is operated for a few years until demand for it ceases and it is then withdrawn and all patients then make their own way to the health centre or are visited at home. However it is very uncertain how long it would be necessary to continue such a bus service and premature ending of the service might result in considerable bad feeling among the local residents. For these reasons we cannot recommend the closure of the Standlake branch surgery.

So far we have talked in terms of either closing the branch surgery or leaving it open at its present level of operation. There is of course another real alternative namely the introduction of additional sessions at the branch surgery. These need not be confined to the doctors of the practice. For example, it might be appropriate to hold clinics for health visitors, physiotherapists, home nurses, etc at the branch. The very simple character of the facilities available at the Standlake surgery would of course limit the activities undertaken from there. But in general one could conceive of such mini clinics perhaps being based at houses of district nurses and others (see for example the development of mini clinics in the West Riding of Yorkshire. Elliot(1966)). Clearly any extension of services at a given branch surgery or more generally their provision in mini clinics of some kind dispersed over a practice area would depend on the outcome of a study of the needs of the communities in question.

Other possibilities

When we rejected earlier the idea of introducing into the Witney situation a practice transport service which had as its object a reduction in the volume of home visiting undertaken by doctors, we assumed that the whole cost of the service would be borne by the practice or the Department

of Health and Social Security and moreover, that the driver concerned did nothing other than drive, and perhaps help people in and out of the vehicle. Here we do no more than list some further possibilities which seem worth consideration.

It is open to a practice to encourage its patients with cars to give lifts to others. For example, Owen (1974) reported that in one practice with a high proportion of elderly, when a branch surgery was shut some of the patients themselves suggested that they would share a car when they came into the main surgery and requested that the persons carried be given consecutive appointments. The practice was glad to oblige. Practice receptionists could keep lists of volunteer car drivers willing to assist in this way and either arrange the transport on behalf of the patient or pass the relevant information to the patient who then arranged his lift. There is such a system in a rural Sussex practice (Squire 1973). Encouraging the shared use of transport would be easiest in sessions (for example ante natal) when the same people are regularly attending on a number of occasions. The idea of mutual help by patients was taken a stage further in the case of one London health centre. A 'League of Friends' originally set up to support a recently closed hospital transferred its allegiance to the new health centre and one of the suggested objects of the organisation was to provide a mini bus for the centre (Anon 1973). These possibilities do not cost the doctors or the Department of Health and Social Security anything (unless they are contributing to the running costs of the vehicle involved).[1]

An intermediate possibility might be to pay certain persons a mileage allowance for their car costs when carrying selected patients to surgeries and home again, on the lines of the hospital car service.[2] (Such a system was described earlier, see Fisher and Ballard (1974) page 76.) Here the driver is giving his own services free, but is not completely out of pocket because of the reimbursement of some of the running costs of his car.

These arrangements would remove to some extent the financial disincentives from starting a car service but would have to draw upon persons willing and in a position to render voluntary services - and this pool is of course not an infinite resource. Careful consideration would need to be given to the question of whether this was the most desirable way of using the services of those willing to render voluntary help to the community - particularly as unlike the hospital, the general practitioner as a private entrepreneur might be seen to be gaining from this voluntary effort. If it could be

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1)
2) for footnotes see below page 85.

shown that there were clear benefits for patients in their being seen in the surgery rather than at home, then this would strengthen the case for using volunteers in this way.

Transport for patients might have a more acceptable role in general practice if it were part of a wider service. For example, the driver in the practice reported by Fisher and Ballard (1974) also served as a bathing attendant.

Throughout our discussion about practice transport for the Witney practice we have been considering the situation as it was in 1968 when we undertook the field work for this study. Since then the practice has grown considerably in size so that the Executive Council in December 1973 gave the list size as 21,307 patients and there are now eight principals rather than six. The population in the area served by the practice is expected to increase substantially in the near future and it is proposed to build a second health centre in Witney to which will be attached a community hospital. The new health centre and the community hospital will be situated on a site adjacent to the existing health centre. If these plans are realised there will be a considerable concentration of general practitioner, hospital and other services in the Witney town centre. The need for some form of transport service to serve this health complex (perhaps an extension of the ambulance services which already cover the consultants working in the Witney health centre and would of course serve the community hospital) should be reviewed.

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[1] The Department of Environment with the Berwickshire County Council contributes to the costs of a car service operated by the Women's Royal Voluntary Service. Persons of pensionable age are transported to general practitioners' surgery sessions, dental surgeries, opticians, chiropody clinics and to hospital to visit immediate family members. Transport can be arranged in advance. If however, a doctor who is participating in the scheme, receives a request for a home visit from a patient well enough to travel but without transport, providing the request is made before 1.00 p.m., an arrangement can be made for a driver to carry the patient to the evening surgery. (G.A.C. Binnie and Mrs D. Marquis 1974 Personal communication)

[2] The Sussex practice cited above (Squire 1973) did reimburse drivers for the cost of petrol. The practice also had an arrangement with the hospital car service to carry selected patients living in certain areas. Another system drawing on the hospital car service run by the British Red Cross Service in Cumberland County, was mentioned by Lance (1971).

CONCLUSIONS

1. Nearly 30 per cent of the patients visited during the study period by the Witney doctors did not need a home visit on medical or social grounds. Nearly two thirds of these 'unnecessary' visits were unavoidable at the time because patients lacked any means of transport for travelling to the health centre.

2. Hardly any of the patients who gave rise to 'unnecessary' visits, whether or not caused by lack of transport, needed facilities available at the centre but not to the doctor when visiting.

3. A practice transport service for patients even if it had had the effect of transferring all 'unnecessary' visits made during the normal working hours of the practice, to the surgery, would only have saved each doctor on average about one hour per week - and these savings would be distributed in small quantities randomly over the working week.

4. On the evidence of other studies the cost of running such practice transport services assuming ordinary cars were used and the driver received payment for his services would cost in the region of £2 to £3.50 per hour of doctor's time saved and 40p per patient carried.

5. In the absence of any definite evidence of benefits to patients being associated with their being seen in the surgery rather than at home there is certainly no reason to dispute the doctors' decision that it was not worth while introducing a transport service in the Witney practice.

6. A number (possibly as large as that of the 'unnecessary' visits mentioned in 1.) of those attending the health centre may have had real difficulty in making the journeys involved - for example persons over 70 years of age who attended by bus or patients who used a taxi or were brought in the car of a relative or neighbour. Such persons could be potential users of a transport service. The survey did not produce any suggestion that these patients represented the tip of an iceberg consisting of those who were reluctant to trouble a doctor to the extent of asking for a home visit and perhaps not even seeking attention of any kind when they really needed it. Likewise we have found no evidence of abuse by patients of transport services. However we have not in this study investigated these issues in depth.

7. The replacement of the single session at the branch surgery at Standlake by a practice bus service making two (return) journeys per week to the health centre from the Standlake area would not in financial terms have been an attractive proposition. This step would have entailed long journeys for the patients involved. It might have proved acceptable to patients if it offered a means of attending the surgery (at the health centre) on two days rather than one per week - and allowed access to a wider choice of doctors from the practice plus easier prescribing arrangements.

RECOMMENDATIONS

1. In the present state of knowledge about the relative benefits and drawbacks in terms of the patient's health of being seen at the surgery rather than at home, there is no ground for recommending that practices should introduce transport services.

2. The replacement of branch surgeries by suitable bus services to the main surgery may, especially in widely dispersed practices, be an effective way of husbanding resources both in financial terms and doctor-hours saved.[1] It could offer a better service to patients by providing them with a direct means of attending more surgery sessions per week. A decision whether or not to take such a step in any practice would be dependent on a study of the particular circumstances of the practice. The Standlake branch surgery should be retained and consideration given to using the premises more intensively, perhaps by including sessions by nursing and other non medical staff.

3. Further research is needed into the following topics -

   a. the pros and cons in terms of the patient's health and welfare of being seen in the surgery rather than in the home,

   b. patients' views on the desirability of transferring for various reasons and by various means, more consultations to the doctor's surgery (that is reducing the number of home visits paid),

   c. patients' views on the replacement of branch surgeries by bus services to the main surgery,

   d. the costs and benefits associated with the provision of mini clinics affording accommodation for doctors, nurses and others in small communities which might otherwise be deprived altogether of a health service 'presence' in their midst,

   e. the scope for and the role of voluntary services in general practice and especially in connection with health centres - one possible area of voluntary activity being the provision of transport to the surgery of some patients along the lines of the hospital car service.

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[1] This, at least in the short term, is more than a matter of saving money

APPENDIX 1

RECORDING FORMS

Workload forms

The surgery recording schedule took the form of a booklet corresponding to a particular surgery session, on the front page of which, information about the session as a whole was recorded. Each of the subsequent pages related to one patient seen, sufficient data being recorded to link up with the front surgery sheet in case the booklet disintegrated. (This feature of the design also facilitated analysis.) The home visiting record schedules were similarly designed, each booklet corresponding to a doctor's visits on a given day. The questions in the record schedules were mostly arranged in closed form, that is, the nurse or doctor completing the form had only to ring or tick the appropriate answer from among those listed for each question. The major exception to this was the patient's address. This was written in conventional form and later coded using a scheme whereby Witney town was divided into four areas and the surrounding countryside into a further 19 areas. (The health centre itself, the doctors' homes and any other location at which a visiting round began or ended, were additionally given a code number (0) and these 24 were later amalgamated into 12 areas for some of the analysis.) The record sheets were precoded to permit direct transfer of the data on to an 80 column punch card for analysis. One card was used for each consultation, one for the data relating to each surgery session as a whole, and one for information on each day's visiting as a whole. The data were analysed on the ICL 4130 computer of the University of Kent at Canterbury mostly using the 'BANGOR' survey analysis programmes and developments from these.[1]

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[1] BANGOR is a computer programme package designed by Ann Holden to process social science survey data. (The name BANGOR refers to the Welsh university where the package was developed.) DATACH is a programme to verify survey data and write it on to magnetic tapes while BANGCON is the programme which converts the DATACH tapes to allow tabulation of the survey data by SURVT2. These were developed at the University of Kent. Special programmes were also written by Mrs A. Corfield and Miss J. Dobby to estimate the time likely to be saved if a transport service for patients were to be introduced.

The following data were collected for all patients seen at each consultation (whether in the health centre, branch surgery or on a visit) during the study period. If more than one patient was seen at one consultation, data were collected for each of them -

1. Name of patient; this was not coded and was used for identification by members of the practice only.
2. The address of the patient; this was written down in sufficient detail for members of the practice to identify and code.
3. Sex.
4. Age in years.
5. Marital status; whether single, married, widowed/divorced. No distinction was made between those widowed, divorced or separated. A person was deemed to be married if he/she was known by the doctor to be living in a 'stable' relationship with a 'spouse'.
6. Whether or not there were children under five years in the family of the patient (other than the patient where he/she was under five years).
7. Whether or not a private car was available to the patient (i.e. essentially one in the household) and, if so, whether at virtually all times or for limited periods of the day (excluding most normal surgery hours).
8. If the patient was a married woman did she work part time (less than 30 hours per week), full time or not at all.
9. Diagnosis; the two digit classification of the Royal College of General Practitioners (1963 revision) was used. If there were more than one diagnosis for any patient the main one pertaining to that consultation was recorded.
10. Whether the home visit/surgery attendance was new, acute return (i.e. follow-up of an acute condition already being treated), chronic return (i.e. follow-up of a chronic condition) or for pregnancy. New consultations were thus patient initiated, acute returns and chronic returns were predominantly doctor initiated.
11. The code number of the doctor or nurse attending the patient.
12. The date of the consultation and session number (except for home visits).

For those attending the doctor at the surgery (either branch or health centre) the following information in addition to items 1-12 was obtained.

13S. The type of transport used in attending the surgery (none, public transport, own or neighbour's car, taxi, other).

14S. Whether any 'treatment'[1] was indicated at the time of that attendance and, if so, whether it was of primary type including casualty (e.g. for suturing or the start of a course of injections), return type (e.g. removal of sutures or further injections) or routine (e.g. B_{12} injection).

15S. If 'treatment' was indicated in 14S. whether it was carried out during that consultation by the doctor, or nurse (health centre only), or deferred to another attendance (so that 'treatment' could be undertaken by the nurse at the centre).

16BS. At the branch surgery only it was noted if the patient needed to attend the health centre for examination or 'treatment'.

The nurse who, it will be recalled, worked only at the centre, recorded the same information as the doctors did for their surgery attendances, except that in place of items 14S. and 15S. the following items were included -

14N. The type of 'treatment' administered - whether casualty including primary, return or routine.

15N. Whether the patient had gone direct to the nurse, or as a result of a referral by a doctor during the same visit to the health centre, or from a previous session or home visit.

In the case of home visiting the following information about the visit was recorded -

13H. For new visits whether an emergency visit was needed at once; or a visit needed the same day or when convenient to the doctor and not necessarily the same day. This assessment was made after the patient was attended.

14H. If a home visit was considered by the doctors to be justified it was classified as 'necessary'. However if the doctor felt that the patient could have attended the surgery, the visit was classified as 'unnecessary' either in the existing circumstances (using their own transport/public transport), or if special transport had been provided. This was also a retrospective judgement by the doctor.

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[1] 'Treatment" was defined as the patient receiving something more than a consultation and a prescription (and of a kind which the nurse could undertake).

15H. For those who could have attended surgery, whether they would have required pathology tests, 'treatment' by the nurse, an examination or merely a consultation with the doctor.

16H. The times at which the visit to the patient began and ended. If more than one patient was seen in any one household at the same visit, the time was apportioned equally between them.

Timing of surgery sessions

A note was made of the time each surgery session began and ended (for the doctors or nurse of the practice) and also whether it was the first, second or third session of the day for the doctor involved. (Time spent on non-medical matters such as coffee breaks was excluded from the surgery sessions but medical interruptions for example 'phone calls from patients, or visits to the treatment room to consult with the nurse, were included.) Sufficient data were recorded to locate each surgery attendance within the appropriate surgery session.

Timing of home visiting rounds

The starting and finishing times of all visiting rounds of the doctors were noted. A round was defined as a tour usually commencing at the centre or doctor's home, involving one or more visits and usually finishing at the centre or home. If the round was interrupted by medical work not being recorded, e.g. at the factory, or for private business, e.g. visit to the bank, the round was deemed ended at the place of business and another round started when the other business was finished. The time on each visit was recorded from the moment of entering the house to leaving it. A home visit could be located within a round using data of type 16H.

Occasionally the end of one visit was entered as occurring at the same time as the start of the next although the two visits may have taken place in locations separated by some distance. Where this was observed it seemed to be a characteristic of a whole day's work or more, rather than an isolated occurence and suggested that the person recording the data was interpreting the duration of a visit so as to include travelling time. This meant that it was possible to obtain the total time spent on visiting (including travelling) in, say, a particular round but not to divide it between travelling and consulting.

Detailed headings of the diagnostic categories[1]

1. Communicable Diseases
2. Neoplasms
3. Allergic, Endocrine System, Metabolic and Nutritional Diseases
4. Diseases of Blood and Blood-forming Organs
5. Mental, Psychoneurotic and Personality Disorders
6. Disease of Nervous System and Sense Organs
7. Diseases of Circulatory System
8. Diseases of Respiratory System
9. Diseases of the Digestive System
10. Diseases of Genito-Urinary System
11. Deliveries and Complications of Pregnancy, Childbirth and Puerperium
12. Diseases of Skin and Cellular Tissue
13. Diseases of Bones and Organs of Movement
14. Congenital Malformation
15. Certain Diseases of Early Infancy
16. Symptoms and Ill-defined conditions
17. Accidents, Poisoning and Violence
18. Prophylactic Procedures

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[1] Source: Royal College of General Practitioners - A Classification of Morbidity (Revised 1963)

HOME VISITING

1
1

DOCTOR .....

2

DATE : Day .....

Month .....

Year .....

3	4
5	6
	7
	8

NUMBER OF ROUNDS .....

Round 1 TIME VISITING STARTED .....

TIME VISITING ENDED .....

9	10	11	12
13	14	15	16

Round 2 TIME VISITING STARTED .....

TIME VISITING ENDED .....

17	18	19	20
21	22	23	24

Round 3 TIME VISITING STARTED .....

TIME VISITING ENDED .....

25	26	27	28
29	30	31	32

Round 4 TIME VISITING STARTED .....

TIME VISITING ENDED .....

33	34	35	36
37	38	39	40

Round 5 TIME VISITING STARTED .....

TIME VISITING ENDED .....

41	42	43	44
45	46	47	48

SURGERY CONSULTATIONS

1	2

DOCTOR/NURSE ..... | 2 |

DATE : Day ..... | 3 | 4 |

Month ..... | 5 | 6 |

Year ..... | 7 | 8 |

SURGERY NO. .....

TIME SURGERY STARTED ..... | 9 | 10 | 11 | 12 |

TIME SURGERY FINISHED ..... | 13 | 14 | 15 | 16 |

HOME VISITS

Time visit : started 1 2 3 4 5 ended 6 7 8 9 10 11 12 13 14

Name : .....

Address : .....

Sex : 0 M | 1 F

Age : .....

Marital status : 0 Single | 1 Married | 2 Widowed or divorced — 15

Children under five years : (other than pt.) 0 Yes | 1 No — 16

Private car available : 0 None | 1 Yes, all time | 2 Yes, sometimes — 17

If married woman : does she work? 0 No | 1 Part-time | 2 Full-time | 3 Not applicable — 18

Diagnosis : — 19 20

01 Comm. dis. | 02 Neopl. | 03 A.E.M.N. | 04 Blood | 05 Ment. | 06 Nerv. | 07 Circ. | 08 Respy. | 09 Digt.

10 Gen./ur. | 11 Preg. | 12 Skin | 13 Bones | 14 Cong. | 14 Infy. | 16 Sympt. | 17 Accdt. | 18 Other

Type of visit : 0 New | 1 Acute return | 2 Chronic return | 3 Pregnancy — 21

Urgency (if new) : 0 Not applicable | 1 Emergency | 2 Same day | 3 When convenient — 22

Could have attended surgery : — 23

Patient mobility : 0 Home visit needed | 1 In present circumstances | 2 If special transport provided

If could have attended surgery, was this for : 0 Path. | 1 Treatment | 2 Exam. | 3 Not applicable — 24

Comments :

Doctor — 25

Date : Day — 26 27

Month — 28 29

SURGERY CONSULTATIONS (CENTRE)

1 4

Name : .....

Address : 2 3

Sex : [0 M] [1 F] 4

Age : 5 6

Marital status : [0 Single] [1 Married] [2 Widowed or Divorced] 7

Children under five years : (other than pt.) [0 Yes] [1 No] 8

Private car available : [0 None] [1 Yes, all time] [2 Yes, sometimes] 9

Transport to surgery : [0 None] [1 Public transport] [2 Own car] [3 Neighbour's car] [4 Taxi] [5 Other] 10

If married woman : does she work? [0 No] [1 Part-time] [2 Full-time] [3 Not applicable] 11

Diagnosis : 12 13

[01 Comm.Dis.] [02 Neopl.] [03 A.E.M.N.] [04 Blood] [05 Ment.] [06 Nerv.] [07 Circ.] [08 Respy.] [09 Digt.]
[10 Gen./Ur.] [11 Preg.] [12 Skin] [13 Bones] [14 Cong.] [15 Infy.] [16 Sympt.] [17 Accdt.] [18 Other]

Type of attendance : [0 New] [1 Acute return] [2 Chronic return] [3 Pregnancy] 14

Treatment required at health centre : [0 None] [1 Casualty] [2 Return] [3 Routine] 15

If so, carried out by : [0 Dr.] [1 Nurse] [2 Deferred to another visit] [3 Not applicable] 16

Comments : 17

Doctor

Date : Day 18 19

Month 20 21

Session 22

SURGERY CONSULTATIONS (BRANCH)

1 5

Name : .....

Address : .....

Sex : 0 M | 1 F

Age : .....

2 3 4 5 6

Marital status : 0 Single | 1 Married | 2 Widowed or Divorced — 7

Children under five years (other than pt.) : 0 Yes | 1 No — 8

Private car available : 0 None | 1 Yes, all time | 2 Yes, sometimes — 9

Transport to surgery : 0 None | 1 Public transport | 2 Own car | 3 Neighbour's car | 4 Taxi | 5 Other — 10

If married woman: does she work? 0 No | 1 Part-time | 2 Full-time | 3 Not applicable — 11

Diagnosis : 12 13

01 Comm.Dis.	02 Neopl.	03 A.E.M.N.	04 Blood	05 Ment.	06 Nerv.	07 Circ.	08 Respy.	09 Digt.
10 Gen./ur.	11 Preg.	12 Skin	13 Bones	14 Cong.	15 Infy.	16 Symt.	17 Accdt.	18 Other

Type of attendance : 0 New | 1 Acute return | 2 Chronic return | 3 Pregnancy — 14

Treatment required at Health Centre : 0 None | 1 Casualty | 2 Return | 3 Routine — 15

If so : 0 Carried out | 1 Deferred to centre | 2 Not applicable — 16

Comments :

Doctor — 17

Date : Day — 18 19

Month — 20 21

Session — 22

SURGERY CONSULTATIONS (NURSE)

1 6

Name : .....

Address : 2 3

Sex : [0 M] [1 F] 4

Age : 5 6

Marital status : [0 Single] [1 Married] [2 Widowed or Divorced] 7

Children under five years : (other than pt.) [0 Yes] [1 No] 8

Private car Available : [0 None] [1 Yes, all time] [2 Yes, sometimes] 9

Transport to surgery : [0 None] [1 Public transport] [2 Own Car] [3 Neighbour's car] [4 Taxi] [5 Other] 10

If married woman : does she work? [0 No] [1 Part-time] [2 Full-time] [3 Not applicable] 11

Diagnosis : 12 13

[01 Comm.Dis.] [02 Neopl.] [03 A.E.M.N.] [04 Blood] [05 Ment.] [06 Nerv.] [07 Circ.] [08 Respy.] [09 Digt.]
[10 Gen./ur.] [11 Preg.] [12 Skin] [13 Bones] [14 Cong.] [15 Infy.] [16 Sympt.] [17 Accdt.] [18 Other]

Type of attendance : [0 New] [1 Acute return] [2 Chronic return] [3 Pregnancy] 14

Type of treatment administered : [0 None] [1 Casualty] [2 Return] [3 Routine] 15

Patient's origin : Referred by doctor [0 at current visit] [1 at previous visit] [2 Came direct] 16

Comments :

Nurse 17 9

Date : Day 18 19

Month 20 21

Session 22

APPENDIX 2

Calculating the travelling time saved if visits classified as 'unnecessary' are left out from visiting rounds

Basic ideas underlying the calculations, are presented on Page 63. The procedure used was as follows -

Step 1. In this analysis the Rural Practice Area was subdivided according to the scheme described in Table 1 (the numbers 5 to 15 rather than names being used to identify the 11 study areas). Witney town was divided into four areas labelled 1, 2, 3 and 4 respectively. In addition the starting and finishing point of rounds (usually the health centre) was given the code zero. A journey between two different areas is referred to as a link (e.g. we speak of link (5,8)); we also speak of an internal link such as (5,5) which denotes a journey within area 5. When we speak of ordered links we mean that we distinguish link (i,j) and link (j,i). In the case of an unordered link we do not make this distinction, that is it does not matter in which direction the route was travelled.

Step 2. For each ordered link and each internal link the average travelling time was calculated from the pooled data of all the doctors, using, however, only non zero travelling times (it will be recalled that some doctors recorded visits at different addresses as following immediately upon one another without any travelling time in between. We have excluded these from consideration in finding the average time which the doctors took as a group to travel from area to area or within areas.[1])

The average time was calculated as follows -
suppose for a particular link (i,j), n_{ij} journeys, with non zero travelling time, had been recorded during the study period by the doctors as a whole (all in minutes to the nearest whole minute). Let these n_{ij} times be

$x_{ij1}, x_{ij2} \ldots\ldots x_{ijn_{ij}}$;then the mean $x_{ij} = \sum_{k=1}^{n_{ij}} \frac{x_{ijk}}{n_{ij}}$ was calculated.

All links had been travelled at least once with non zero travelling time during the study period, with the exception of (9,9) this was given arbitrarily the travelling time of zero minutes in the calculations below.

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[1] Proportion of non zero journeys out of total journeys made was 87 per cent. The effect on the analysis of excluding (legitimate) zero journey times will be to inflate the estimate of time saved which only serves to reinforce our conclusion about the small size of this saving.

Step 3. The following statistic was calculated for each link to examine the magnitude of difference between average times of travelling links in opposite directions,

$$\frac{|\bar{x}_{ij} - \bar{x}_{ji}|}{\sqrt{\frac{s_{ij}^2}{n_{ij}} + \frac{s_{ji}^2}{n_{ji}}}}$$

(for definition of such things as s_{ij}^2 see the note on variability of estimates below - except that of course in this case we are dealing with ordered links).

Except in the case of a few links involving as one end of the link the code zero, this value was very small. The differences for links involving the zero code probably arise because this code could denote either the health centre or somewhere else such as the doctors home (see Step 4 below). It seemed reasonable, therefore, to drop any distinction between times of travelling a link in the two possible directions in the final analysis.

Step 4. The rest of the analysis was concerned only with visits in 'normal' working hours. Thus visiting rounds which started before 8.00 a.m. or after 7.00 p.m. on week days (Monday to Friday) were excluded as were those which started before 8.00 a.m. or after 1.00 p.m. on Saturdays and any time on Sundays i.e. we were concerned only with visits in 'normal' working hours. Note that a round is the collection of one or more visits made in the same outing by the doctor. The outing normally started and finished at the health centre (since we are dealing only with calls in the 'normal' working day) but sometimes the starting or finishing point was somewhere else e.g. the doctor's home. We have not distinguished between these starting points in this analysis - the effect of this is to increase the variability of our estimates, but not to introduce any bias since there was no zoning of the practice area for the purposes of visiting (see Page 43). See also Step 3 above.

Step 5(a).To obtain the 'average'[1] travelling time for any particular round, that is a series of visits in a particular order to a series of areas, we simply added the average travelling times for the appropriate links in the round.

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[1] The word 'average' is used in a special sense in this appendix. The point is that we are using travelling times for links which are averages for all doctors to calculate the 'average' travelling time for a configuration of visits actually travelled by a particular doctor.

((b).To obtain the 'average' time taken for any collection of rounds, for example those for a particular doctor in recording session one, we added the average times respectively for the appropriate rounds. In this way tables giving for each doctor by day of week the 'average' travelling time were prepared for each recording session and both recording sessions combined.

Step 6. The above procedure was then repeated leaving out visits 'unnecessary if transport had been available' (where a round was thus rendered empty, i.e. having no visits, it was suppressed altogether).

Step 7. The 'average' time saved for any period and/or doctor was obtained simply by subtracting the corresponding entries in the table referred to in Step 6 from those in the table referred to in Step 5. (Results are presented in tables 51, 52.)

Step 8. The above analysis was then repeated excluding visits 'unnecessary in the present circumstances' as well as those which would have been 'unnecessary if transport had been available'. (Results are presented in tables 51, 52.)

In this appendix we used average travelling times for links based on all journeys[1] in the study period whether inside or outside 'normal' working hours, in order to have as many journeys as possible on which to base these averages. Since this analysis is concerned with the estimation of time saved in 'normal' working hours only it is possible that this approach would have had a biasing effect in that journeys at night when roads are quieter may be faster than those in the daytime. In fact the average travelling time per visit for out of hours visits was longer than that for a visit in 'normal' working hours. This could be partly explained by out of hours visits being 'one off', that is not usually part of a round. However since the great majority of all journeys in or out of 'normal' hours were those over links starting or finishing with zero, this suggests that no serious bias has been introduced. Note also that out of hours journeys would be more likely to begin and/or end at the doctor's house, but we have already noted (see Step 4 above) that there was no zoning of the practice for visiting purposes even in 'normal' working hours.

---

[1] where non zero travelling times were recorded

Note on variability of estimates

In this report we have not presented any measures of variability for our estimates though it may be of interest to see how these might be derived. We discuss two measures of variability -

(a) the standard deviation (s)

(b) the standard error (se)

associated with the estimates.

These are calculated in steps which follow closely those used above in calculating the estimated time saved. We use the same labels to bring out this similarity.

Step 2. Calculate $$s_{ij}^2 = \frac{\sum_{k=1}^{n_{ij}} x_{ijk}^2 - \frac{\left(\sum_{k=1}^{n_{ij}} x_{ijk}\right)^2}{n_{ij}}}{n_{ij} - 1}$$

and $$(se)_{ij}^2 = \frac{s_{ij}^2}{n_{ij}}$$

Step 5(a). The (standard deviation)^2 and (standard error)^2 respectively of the average travelling time for a round are obtained by adding together respectively the (standard deviations)^2 and the (standard errors)^2 for each of the links of the round.

(b). To obtain the (standard deviation)^2 and (standard error)^2 respectively of the average time taken for any collection of rounds add the (standard deviation)^2 and (standard error)^2 respectively for each of the appropriate rounds.

Step 6. The above procedure is then repeated leaving out visits 'unnecessary if transport had been available' (where a round is thus rendered empty i.e. having no visits, it is suppressed altogether).

Step 7. The (standard deviation)^2 and (standard error)^2 for the average time saved is obtained by adding the corresponding entries in the tables obtained in Steps 5 and 6.

Interpretation of the standard deviation and the standard error

The standard deviation calculated in Step 7 gives an indication of the variability of the actual time saved if we assume that the precise configuration of rounds and unnecessary visits excluded is repeated again and again, which of course in practice it will not be. The standard error is a measure of the variability of the estimate of the 'average' travelling time saved. Note given the procedure we followed in Step 3 above which applied also for the calculation of the standard deviation and the standard error these measures cannot be used for individual doctors.

Note on the use of PERT statistics

If the average times of the kind computed in Step 2 had not been available we could have used a method akin to PERT in critical path analysis (see e.g. Battersby 1967). This would involve asking the doctors for each link to give a pessimistic estimate of time taken to travel (call this p_{ij} for link (i,j)) i.e. about the longest they could reasonably imagine the journey taking; an optimistic estimate o_{ij} (about the shortest conceivable travelling time) and a median travelling time m_{ij} (one that is as likely to be be exceeded as not) then following the PERT approach the mean time for the link is estimated as $\frac{p_{ij} + 4m_{ij} + o_{ij}}{6}$ and the (PERT) variance is estimated as $\frac{(p_{ij} - o_{ij})^2}{36}$. Then to obtain the mean time and variance for a round we simply add the means and variances so estimated as in Step 5(b) above. Thereafter the analysis would proceed as in Step 6 and onward for the (standard deviation)^2 discussed above.

Note, PERT requires that we make certain assumptions about the underlying distribution of travelling times for a given link which are very likely to be fulfilled in the case of the estimation of the means though rather less likely in the case of the variances. Note also that the (PERT) variance described in this section is an approximation to the (standard deviation)^2 described earlier in this appendix.

In the present study the PERT approach, if used, would have required the doctors to estimate the travelling times as above for about 150 links - assuming unordered links were used.

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TABLE 1

Geographical Distribution of the 1966 Estimated Practice Population

Localities within the Total Practice Area[1]	1966 Enumeration District codes[2]	Study Areas[3]	1966 Estimated Practice Population[4]
Witney Urban District		Witney U.D.	9,800
Crawley (5)	158616	Crawley	140
Hailey (6), Whiteoak Green (6), Delly End (6), Poffley End (7)	158615	Hailey	1,190
North Leigh (8), New Yatt (8), Eynsham Hall (8), East End (23)	158607 (75% part)	North Leigh	930
South Leigh (10), Shores Green (10), High Cogges (10), Spring Hill (10)	158610	South Leigh	340
Stanton Harcourt (11), Sutton (11), Sutton Green (11), Blackditch (11), Northmoor (12), West End (12)	158604 (10% part) 158605 (20% part)	Stanton Harcourt	140
Standlake (13), Brighthampton (13), Newbridge (13), Shifford (13)	158611	Standlake	760
Aston (14), Cote (14), Cokethorpe (15), Hardwick (15), Yelford (15)	158612 (30% part) 158614	Aston	320
Ducklington (16)	158613	Ducklington	1,010
Curbridge (18), Lew (17), Brize Norton (19)	158619 158618 (10% part) 158621 (10% part)	Curbridge	720
Minster Lovell (20), Worsham (20), Asthall Leigh (21), Field Assarts (21)	158620 158629 (10% part)	Minster Lovell	770
Ramsden (22), Ramsden Heath (22), Wilcote (22), Mt. Skippitt (22)	158617 (50% part)	Ramsden	210
		Total	16,330

Notes : [1]Localities within the Total Practice Area. These were recognisable geographical localities within the Total Practice Area (see page 12). The numbers in brackets are the address codes used by the doctors and nurse.

[2]1966 Enumeration District codes. Except where otherwise indicated against the Enumeration District code, the whole population of the Enumeration District was judged by the doctors to be on their lists of patients.

[3]Study Areas. These are the names given to the compacted areas used throughout the analysis.

[4]1966 Estimated Practice Population. These are the estimates of persons registered with the practice within the Study Areas.

All tables using the 1966 Sample Census data have had noughts added to the figures to enable quicker recognition of the overall picture e.g. in Witney U.D. 980 persons were within the sample and these were taken to represent a total population of 9,800.

Source : Sample Census 1966. Enumeration District Tabulations supplied by the General Register Office.

TABLE 2

Age and Sex Structure : For Selected Populations, 1966, 1971 and 1968 (Interpolated)

1966

Age Group	Witney Urban District			Rural Practice Population			Total Practice Population			Witney Rural District			England and Wales (1,000's)		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
0-19	38.6	33.3	35.9	37.3	31.2	34.4	38.1	32.5	35.3	35.8	30.5	33.3	32.5	29.2	30.8
20-59	51.7	51.6	51.6	50.1	56.5	53.1	51.0	53.5	52.2	51.4	53.6	52.5	52.2	49.9	51.0
60 and over	9.7	15.1	12.4	12.6	12.3	12.5	10.9	14.1	12.5	12.8	15.9	14.3	15.3	20.9	18.2
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total no.	4,840	4,960	9,800	3,440	3,090	6,530	8,280	8,050	16,330	14,100	13,140	27,240	22,840,	24,294,	47,135,

1968 Interpolated

Age Group	Witney Urban District			Witney Rural District		
	M	F	Total	M	F	Total
	%	%	%	%	%	%
0-19	36.2	32.3	34.2	35.3	32.1	33.7
20-59	52.8	51.9	52.3	52.5	52.2	52.4
60 and over	11.0	15.9	13.5	12.2	15.7	13.9
Total %	100.0	100.0	100.0	100.0	100.0	100.0
Total no.	5,360	5,550	10,910	16,020	15,060	31,080

1971

Witney Urban District			Witney Rural District			England and Wales (1,000's)		
M	F	Total	M	F	Total	M	F	Total
%	%	%	%	%	%	%	%	%
33.5	31.0	32.2	34.7	33.8	34.2	32.7	29.4	31.0
54.1	52.2	53.0	53.8	50.7	52.3	51.5	49.0	50.2
12.5	16.9	14.8	11.6	15.5	13.5	15.8	21.6	18.8
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
6,130	6,420	12,550	18,890	17,930	36,820	23,623,	24,980,	48,603,

Notes : % in columns of tables may not always total 100.0 because of rounding. See also table 1.

Source : Sample Census 1966 England and Wales County Report Oxfordshire
Census 1966 United Kingdom General and Parliamentary Constituency Tables
Census 1971 England and Wales County Report Oxfordshire Part I
Census 1971 Great Britain Advance Analysis. See also table 1.

TABLE 3

Marital Status :

Witney Urban District, Rural Practice Population, Total Practice Population, Witney Rural District and England and Wales, 1966

Marital Status	Males					Females				
	Witney Urban District	Rural Practice Population	Total Practice Population	Witney Rural District	England and Wales	Witney Urban District	Rural Practice Population	Total Practice Population	Witney Rural District	England and Wales
	%	%	%	%	%	%	%	%	%	%
Single	44.6	46.7	45.5	47.0	43.8	38.5	39.3	38.8	38.5	38.6
Married	52.1	52.1	52.1	51.0	52.7	52.4	56.8	54.1	54.0	49.8
Widowed/Divorced	3.3	1.2	2.4	2.0	3.5	9.1	3.9	7.1	7.5	11.6
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total no.	4,840	3,440	8,280	14,100	22,840,*	4,960	3,090	8,050	13,140	24,294,*

Source : see tables 1 and 2.

* 1,000's

TABLE 4

Methods of Transport to Work of Persons Resident in Witney Urban District, Rural Practice Population, Total Practice Population, Witney Rural District, and Persons in Employment in Remainder of South Eastern Region and England and Wales, 1966

Method of transport to work	Persons resident in				Persons in employment in	
	Witney Urban District	Rural Practice Population	Total Practice Population	Witney Rural District	Remainder of South Eastern Region	England and Wales
	%	%	%	%	%	%
Train/tube	0.4	0.1	0.3	0.5	3.9	6.7
Public and private bus	3.9	11.2	6.7	13.2	20.1	29.5
Goods vehicle	3.9	7.6	5.3	6.2	3.9	3.2
Car	30.8	44.4	36.2	40.8	30.3	25.8
Motor cycle	2.4	1.8	2.1	2.7	4.2	2.9
Foot/bicycle	54.2	24.0	42.3	25.3	30.7	26.7
None	3.4	9.3	5.7	9.5	5.9	4.5
Other or not stated	1.1	1.7	1.3	1.8	1.0	0.7
Total %	100.0	100.0	100.0	100.0	100.0	100.0
Total no.	4,670	3,050	7,720	12,370	1,677,*	21,367*

Note : Remainder of South Eastern Region is the South Eastern Region from which Greater London and the Outer Metropolitan Area have been excluded.

Source : Sample Census 1966 England and Wales Workplace and Transport Tables Part II. See also table 1.

* 1,000's

TABLE 5

Car Ownership :

Witney Urban District, Rural Practice Population, Total Practice Population, Witney Rural District, Remainder of South Eastern Region and England and Wales, 1966

Car Ownership	Witney Urban District	Rural Practice Population	Total Practice Population	Witney Rural District	Remainder of South Eastern Region	England and Wales
Total private households	3,080	1,920	5,000	8,270	1,356,570	15,359,680
Total persons in private households	9,750	6,450	16,200	26,140	3,891,690	45,749,590
Total cars	1,980	1,770	3,750	6,610	789,910	8,115,630
Distribution of private households with :	%	%	%	%	%	%
No car	41.6	29.1	36.8	34.3	50.2	54.4
1 car	52.9	53.1	53.0	53.1	42.3	39.3
2 or more cars	5.5	17.7	10.2	12.6	7.5	6.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note : Remainder of South Eastern Region - see table 4.

Source : Sample Census 1966 England and Wales Housing Tables Part I. See also table 1.

TABLE 6

Frequency of Bus Services for Study Areas Comprising the Rural Practice Area, 1968

Study Area	Distance by road to Health Centre[1] (Miles)	Length of walk to bus route[2] (Miles)	Duration of bus journey[3] (Mins)	Frequency of Witney daily bus services to Witney[4] (Complete journeys)	Buses serving surgeries			1966 Estimated Practice Population
					Morning	Afternoon	Evening	
Crawley	2 - 2¼	0 - ¼	10	2 - 3	Mon, Thurs Sat	Thurs	No	140
Hailey	2¼ - 3	0 - ½	9 - 12	3 - 7	Yes	Thurs	Thurs	1,190
North Leigh	2½ - 4½	0 - 1¼	11 - 15	9 - 10	Yes	Yes	Yes	930
South Leigh	1¾ - 3¼	0 - ½	6 - 11	0 - 1	Thurs	No	No	340
Stanton Harcourt	4¾ - 6¾	0 - ¼	28 - 40	1 - 3	Thurs	Yes	No	140
Standlake	4¾ - 6½	0 - 1	15 - 20	1 - 3 2 - 6	Thurs	Yes	No	760
Aston	4 - 4½	0 - 1¼	10 - 20	2 - 6 1 - 4	Thurs No	Yes Thurs	No No	320
Ducklington	1½ - 2	0 - ¼	5	4 - 7	Yes	Yes	No	1,010
Curbridge	1¾ - 4	0 - ¼	7 - 15	17 - 22 9 - 13	Yes	Yes	Yes	720
Minster Lovell[5]	3 - 4	0 - 1½	11 - 17	8 - 9 2 - 4	Yes Mon, Thurs Sat	Yes Thurs	Yes	770
Ramsden	4¼ - 5	0 - 1½	19 - 21	2 - 4	Yes	Thurs	Thurs	210

Notes : 1, 2 and 3 - Upper and lower limits of road distance, length of walk to bus route and duration of bus journeys have been given because the Study Areas covered a number of localities often dispersed over more than a square mile.

[4] A complete journey is one which allows a patient to travel from his home to the health centre and back within a reasonable period. See pages 20 - 21. Sunday is excluded.

[5] The Minster Lovell Study Area was served by two bus routes.

Source : The City of Oxford Motor Services Limited Bus Timetable, 13th June 1965. See also table 1.

The source of Tables 7 to 52 (unless otherwise indicated)is the data recorded in the two survey periods January/February and July/August 1968.

Note that percentages will not necessarily add up to 100.0 per cent in the relevant columns and rows of tables due to rounding effects.

TABLE 7

Total Contacts : Distribution by Sex, Age Group and Location

Age Group	Health Centre				Branch Surgery		Home Visits		Total	
	Doctors		Nurse							
Males										
	No	%	No	%	No	%	No	%	No	%
0 - 9	420	16.7	117	18.9	15	25.4	189	24.6	741	18.7
10 - 19	292	11.6	140	22.7	5	8.5	58	7.6	495	12.5
20 - 29	334	13.3	107	17.3	4	6.8	35	4.7	480	12.1
30 - 39	344	13.7	91	14.7	8	13.5	48	6.3	491	12.4
40 - 49	353	14.0	45	7.3	9	15.2	51	6.6	458	11.6
50 - 59	353	14.0	59	9.5	7	11.9	77	10.0	496	12.5
60 - 69	310	12.3	43	7.0	4	6.8	94	12.2	451	11.4
70 - 79	97	3.9	14	2.3	6	10.2	118	15.4	235	5.9
80 and over	10	0.5	2	0.3	1	1.7	97	12.6	110	2.8
Total	2,513	100.0	618	100.0	59	100.0	767	100.0	3,957	100.0
Females										
0 - 9	399	10.8	67	11.9	6	6.9	175	15.4	647	11.8
10 - 19	360	9.7	71	12.6	12	13.8	49	4.3	492	9.0
20 - 29	937	25.3	105	18.6	10	11.5	92	8.1	1,144	20.9
30 - 39	621	16.8	85	15.1	17	19.6	114	10.0	837	15.3
40 - 49	493	13.3	44	7.8	11	12.6	91	8.0	639	11.7
50 - 59	383	10.4	91	16.1	13	14.9	78	6.9	565	10.3
60 - 69	325	8.8	70	12.4	14	16.1	135	11.9	544	9.9
70 - 79	147	4.0	20	3.5	4	4.6	193	17.0	364	6.6
80 and over	33	0.9	11	2.0	0	-	208	18.3	252	4.6
Total	3,698	100.0	564	100.0	87	100.0	1,136*	100.0	5,485*	100.0
Total males and females % add across row	6,211	65.8	1,182	12.5	146	1.6	1,906**	20.2	9,445**	100.0

* includes one age unknown

** includes three sex and age unknown

TABLE 8

Total Contacts : Distribution of Diagnostic Categories by Location

Diagnostic categories	Doctors								Nurse	
	Health Centre		Branch Surgery		Home Visits		Total			
	No	%	No	%	No	%	No	%	No	%
1. Communicable diseases	119	1.9	2	1.4	142	7.5	263	3.2	1	0.1
2. Neoplasms	26	0.4	-		63	3.3	89	1.1	3	0.3
3. Allergic/Endocrine/ Metabolic/Nutritional	234	3.8	6	4.1	42	2.2	282	3.4	12	1.0
4. Blood	95	1.5	1	0.7	14	0.7	110	1.3	66	5.6
5. Mental disorders	381	6.1	6	4.1	52	2.7	439	5.3	-	
6. Nervous system	331	5.3	6	4.1	86	4.5	423	5.1	3	0.3
7. Circulatory	429	6.9	14	9.6	232	12.2	675	8.2	21	1.8
8. Respiratory	1,351	21.8	40	27.4	658	34.5	2,049	24.8	69	5.8
9. Digestive	411	6.6	10	6.8	172	9.0	593	7.2	5	0.4
10. Genito-urinary	583	9.4	9	6.2	85	4.5	677	8.2	10	0.8
11. Pregnancy	577	9.3	3	2.1	59	3.1	639	7.7	24	2.0
12. Skin	519	8.4	14	9.6	49	2.6	582	7.0	449	38.0
13. Bones	688	11.1	18	12.3	114	6.0	820	9.9	123	10.4
14. Congenital	2	0.0	-		-		2	0.0	-	
15. Infancy	4	0.1	-		-		4	0.1	2	0.2
16. Symptomatic	144	2.3	6	4.1	70	3.7	220	2.7	4	0.3
17. Accidents	128	2.1	4	2.7	43	2.3	175	2.1	243	20.6
18. Other	189	3.0	7	4.8	22	1.2	218	2.6	147	12.4
Total	6,211	100.0	146	100.0	1,906*	100.0	8,263*	100.0	1,182	100.0

* includes three diagnoses unknown

Note : For a list of complete headings for the diagnostic categories see Appendix 1.

TABLE 9

Distributions of Selected Diagnostic Categories from Various General Practice Studies

General Practice Studies	Diagnostic categories						
	5 Mental disorders	7 Circulatory	8 Respiratory	9 Digestive	10 Genito-Urinary	12 Skin	13 Bones
	%	%	%	%	%	%	%
Witney 1968 (urban/rural) Williams (1970)	4.7	7.4	22.4	6.3	7.3	10.9	10.0
South Wales							
Rural sample	6.5	10.8	17.8	7.9	5.1	4.5	7.7
Mining sample	6.2	7.5	24.4	8.4	4.3	5.2	6.0
Other sample	6.4	8.3	22.6	7.2	4.1	4.7	5.9
Morrell et al (1970) Lambeth (urban)	12.0	6.7	25.3	7.9	4.4	6.9	6.9
Logan and Cushion (1958) national	-	5.3	23.1	8.6	-	8.4	6.7
Fry (1957) Beckenham (urban)	8.5	6.0	30.0	12.0	-	10.0	6.5*
Davies (1958) Cornwall (urban/rural)	-	8.0	29.9	5.8	-	9.7	5.9*

* rheumatic diseases only

Note : The distributions are based on surgery and home visit consultations, and it is understood that most of the studies excluded indirect consultations. Publication details of these studies are given in the reference.

Source : after Morrell et al (1970).

TABLE 10

Total Contacts : Distribution of Diagnostic Categories by Season

Diagnostic categories	Doctors				Nurse			
	Winter		Summer		Winter		Summer	
	No	%	No	%	No	%	No	%
1. Communicable diseases	224	4.9	39	1.1	-	-	1	0.2
2. Neoplasms	45	1.0	44	1.2	1	0.2	2	0.3
3. Allergic/Endocrine/ Metabolic/Nutritional	160	3.5	122	3.3	-	-	12	2.0
4. Blood	49	1.1	61	1.7	32	5.6	34	5.5
5. Mental disorders	244	5.3	195	5.3	-	-	-	-
6. Nervous system	234	5.1	189	5.1	1	0.2	2	0.3
7. Circulatory	335	7.3	340	9.2	7	1.2	14	2.3
8. Respiratory	1,397	30.6	652	17.7	46	8.1	23	3.7
9. Digestive	307	6.7	286	7.8	5	0.9	-	-
10.Genito-urinary	360	7.9	317	8.6	4	0.7	6	1.0
11.Pregnancy	314	6.9	325	8.8	7	1.2	17	2.8
12.Skin	278	6.1	304	8.2	232	40.9	217	35.3
13.Bones	465	10.2	355	9.6	86	15.2	37	6.0
14.Congenital	2	0.0	-	-	-	-	-	-
15.Infancy	-	-	4	0.1	2	0.4	-	-
16.Symptomatic	30	0.7	190	5.2	3	0.5	1	0.2
17.Accidents	58	1.3	116	3.1	68	12.0	175	28.5
18.Other	68	1.5	150	4.1	73	12.9	74	12.0
Total	4,572*	100.0	3,690**	100.0	567	100.0	615	100.0

* includes two diagnoses unknown

** includes one diagnosis unknown

Also excludes one consultation, season unknown.

TABLE 11

Total Contacts : Distribution by Day of Week, Season and Location

Day of week	Health Centre				Branch Surgery		Home Visits		Total	
	Doctors		Nurse							
Winter Period										
	No	%	No	%	No	%	No	%	No	%
Monday	778	23.6	126	22.2	46	52.9	238	20.0	1,188	23.1
Tuesday	639	19.4	81	14.3	-	-	220	18.4	940	18.3
Wednesday	575	17.5	93	16.4	-	-	168	14.1	836	16.3
Thursday	411	12.5	87	15.3	-	-	172	14.4	670	13.0
Friday	674	20.5	127	22.4	41	47.1	177	14.8	1,019	19.8
Saturday	210	6.4	53	9.3	-	-	146	12.2	409	8.0
Sunday	5	0.2	-	-	-	-	72	6.0	77	1.5
Total	3,292	100.0	567	100.0	87	100.0	1,193	100.0	5,139	100.0
Summer Period										
Monday	693	23.8	129	21.0	59	100.0	129	18.1	1,010	23.5
Tuesday	603	20.7	110	17.9	-	-	141	19.8	854	19.8
Wednesday	531	18.2	120	19.5	-	-	119	16.7	770	17.9
Thursday	388	13.3	99	16.1	-	-	103	14.5	590	13.7
Friday	555	19.0	112	18.2	-	-	110	15.4	777	18.1
Saturday	147	5.0	45	7.3	-	-	57	8.0	249	5.8
Sunday	-	-	-	-	-	-	52	7.3	52	1.2
Total	2,918*	100.0	615	100.0	59	100.0	713**	100.0	4,305***	100.0

* includes one day unknown

** includes two days unknown

*** includes three days unknown

Excluded, one health centre doctor contact month unknown.

TABLE 12

Doctors' Contacts : Distribution by Sex and Age Group for Individual Doctors

Age Group	Doctor																	
	1		2		3		4		5		6		7		8		Total	
Males																		
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
0 - 19	84	15.5	101	22.0	58	21.6	111	91.7	236	28.3	255	42.1	73	20.7	61	38.4	979	29.3
20 - 59	269	49.7	234	51.0	133	49.6	8	6.6	427	51.3	282	46.5	193	54.8	77	48.4	1,623	48.6
60 and over	188	34.8	124	27.0	77	28.7	2	1.7	170	20.4	69	11.4	86	24.4	21	13.2	737	22.1
Total	541	100.0	459	100.0	268	100.0	121	100.0	833	100.0	606	100.0	352	100.0	159	100.0	3,339	100.0
Females																		
0 - 19	56	11.0	98	19.6	40	13.8	189	23.9	202	20.1	266	23.4	66	20.9	84	23.0	1,001	20.3
20 - 59	208	40.7	260	51.9	125	43.0	490	61.9	623	61.9	768	67.5	151	47.8	235	64.2	2,860	58.1
60 and over	246	48.1	143	28.5	126	43.3	113	14.3	181	18.0	104	9.1	99	31.3	47	12.8	1,059	21.5
Total	511*	100.0	501	100.0	291	100.0	792	100.0	1,006	100.0	1,138	100.0	316	100.0	366	100.0	4,921*	100.0
Total																		
0 - 19	140	13.3	199	20.7	98	17.5	300	32.9	438	23.8	521	29.9	139	20.8	145	27.6	1,980	24.0
20 - 59	477	45.2	494	51.5	258	46.2	498	54.6	1,050	57.1	1,050	60.2	344	51.5	312	59.4	4,483	54.3
60 and over	434	41.1	267	27.8	203	36.3	115	12.6	351	19.1	173	9.9	185	27.7	68	13.0	1,796	21.7
Total	1,055**	100.0	960	100.0	559	100.0	913	100.0	1,839	100.0	1,744	100.0	668	100.0	525	100.0	8,263***	100.0

* includes one age unknown

** includes three home visit patients, age and sex unknown, and one home visit age unknown

*** includes four age unknown

TABLE 13

Total Contacts : Distribution by Type of Consultation and Location

Type of consultation	Health Centre				Branch Surgery		Home Visits		Total	
	Doctors		Nurse							
	No	%	No	%	No	%	No	%	No	%
New	2,631	46.7	605	52.3	66	46.2	983	53.3	4,285	48.8
Acute return	1,480	26.3	241	20.8	20	14.0	391	21.2	2,132	24.3
Chronic return	1,524	27.1	312	26.9	57	39.9	470	25.5	2,363	26.9
Total	5,635	100.0	1,158	100.0	143	100.0	1,844	100.0	8,780	100.0

Note : Pregnancies are excluded.

TABLE 14

Doctors' Contacts : Distribution by Type of Consultation, Sex and Age Group

Age Group	Males								Females							
	New		Acute Return		Chronic Return		Total		New		Acute Return		Chronic Return		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
0 - 9	525	70.9	157	21.2	59	8.0	741	100.0	462	71.5	110	17.0	74	11.5	646	100.0
10 - 19	311	63.0	115	23.3	68	13.8	494	100.0	262	62.4	97	23.1	61	14.5	420	100.0
20 - 59	916	47.6	592	30.8	415	21.6	1,923	100.0	1,229	47.3	628	24.2	742	28.6	2,599	100.0
60 and over	231	29.0	194	24.4	371	46.6	796	100.0	349	30.1	238	20.5	573	49.4	1,160	100.0
Total	1,983	50.2	1,058	26.8	913	23.1	3,954	100.0	2,302	47.7	1,074*	22.3	1,450	30.1	4,826*	100.0

* includes one age unknown

Note : % add across.

Pregnancies are excluded.

TABLE 15

Total Contacts : Distribution by Type of Consultation, Age Group and Location

Health Centre - Doctors

Age Group	New		Acute Return		Chronic Return	
	No	%	No	%	No	%
0 - 9	536	20.4	189	12.8	93	6.1
10 - 19	358	13.6	151	10.2	76	5.0
20 - 59	1,471	55.9	948	64.1	891	58.5
60 and over	266	10.1	192	13.0	464	30.5
Total	2,631	100.0	1,480	100.0	1,524	100.0

Nurse

New		Acute Return		Chronic Return	
No	%	No	%	No	%
127	21.0	36	14.9	21	6.7
123	20.3	44	13.3	43	13.8
305	50.4	136	56.4	163	52.2
50	8.3	25	10.4	85	27.2
605	100.0	241	100.0	312	100.0

Branch Surgery

Age Group	New		Acute Return		Chronic Return	
	No	%	No	%	No	%
0 - 9	12	18.2	5	25.0	4	7.0
10 - 19	9	13.6	1	5.0	6	10.5
20 - 59	39	59.1	10	50.0	28	49.1
60 and over	6	9.1	4	20.0	19	33.3
Total	66	100.0	20	100.0	57	100.0

Home Visits

New		Acute Return		Chronic Return	
No	%	No	%	No	%
312	31.7	37	9.5	15	3.2
83	8.4	16	4.1	4	0.9
330	33.6	126	32.2	75	16.0
258	26.3	211	54.0	376	80.0
983	100.0	391*	100.0	470	100.0

Note : Pregnancies are excluded.

* includes one age group unknown

TABLE 16

Total Contacts (Excluding Branch Surgery) : Distribution by Type of Consultation, Day of Week and Location

Day of week	Health Centre - Doctors						Nurse						Home Visits					
	New		Acute Return		Chronic Return		New		Acute Return		Chronic Return		New		Acute Return		Chronic Return	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Monday	583	22.2	295	19.9	376	24.7	133	22.0	48	19.9	72	23.1	221	22.5	67	17.1	70	14.9
Tuesday	491	18.7	268	18.1	244	16.0	100	16.5	41	17.0	44	14.1	167	17.0	58	14.8	123	26.2
Wednesday	507	19.3	300	20.3	266	17.5	115	19.0	47	19.5	45	14.4	127	12.9	65	16.6	87	18.5
Thursday	316	12.0	152	10.3	300	19.7	97	16.0	41	17.0	47	15.1	117	11.9	59	15.1	87	18.5
Friday	549	20.9	373	25.2	262	17.2	101	16.7	44	18.3	86	27.6	134	13.6	71	18.2	70	14.9
Saturday	181	6.9	90	6.1	76	5.0	59	9.8	20	8.3	18	5.8	131	13.3	47	12.0	21	4.5
Sunday	3	0.1	2	0.1	-	-	-	-	-	-	-	-	84	8.6	24	6.1	12	2.6
Total	2,631*	100.0	1,480	100.0	1,524	100.0	605	100.0	241	100.0	312	100.0	983**	100.0	391	100.0	470	100.0

* includes one day unknown

** includes two days unknown

TABLE 17

Doctors' Contacts : Distribution by Type of Consultation and by Individual Doctors

Type of consultation	Doctor																	
	1		2		3		4		5		6		7		8		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
New	442	42.1	396	42.6	250	44.9	356	44.2	849	50.3	855	58.0	306	46.1	226	49.6	3,680	48.3
Acute return	278	26.5	217	23.4	188	33.8	87	10.8	512	30.4	451	30.6	30	4.5	128	28.1	1,891	24.8
Chronic return	331	31.5	316	34.0	119	21.4	362	45.0	326	19.3	167	11.3	328	49.4	102	22.4	2,051	26.9
Total	1,051	100.0	929	100.0	557	100.0	805	100.0	1,687	100.0	1,473	100.0	664	100.0	456	100.0	7,622	100.0

Note : Pregnancies are excluded.

TABLE 18

New Home Visits : Urgency by Age Group and Sex

Age Group	Emergency						Same Day						When Convenient					
	Males		Females		Total		Males		Females		Total		Males		Females		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
0 - 9	19	35.2	11	17.2	30	25.4	140	41.2	127	29.6	267	34.7	3	9.4	8	14.5	11	12.6
10 - 19	5	9.3	2	3.1	7	5.9	31	9.1	37	8.6	68	8.8	3	9.4	4	7.3	7	8.1
20 - 59	21	38.9	29	45.3	50	42.4	99	29.1	144	33.6	243	31.6	18	56.3	15	27.3	33	37.9
60 and over	9	16.7	22	34.4	31	26.3	70	20.6	121	28.2	191	24.8	8	25.0	28	50.9	36	41.4
Total	54	100.0	64	100.0	118	100.0	340	100.0	429	100.0	769	100.0	32	100.0	55	100.0	87	100.0

Note : excluded are nine unclassified.

TABLE 19

New Home Visits : Urgency by Day of Week

Day of week	Emergency		Same day		When Convenient		Total	
	No	%	No	%	No	%	No	%
Monday	10	8.5	187	24.3	18	20.7	215	22.1
Tuesday	15	12.7	131	17.0	20	23.0	166	17.0
Wednesday	15	12.7	99	12.9	13	14.9	127	13.0
Thursday	7	5.9	98	12.7	12	13.8	117	12.0
Friday	17	14.4	103	13.4	13	14.9	133	13.7
Saturday	20	17.0	102	13.3	8	9.2	130	13.4
Sunday	32	27.1	49	6.4	3	3.5	84	8.6
Total	118*	100.0	769	100.0	87	100.0	974*	100.0

* includes two, day unknown

Note : excluded are nine unclassified.

TABLE 20

Home Visits : Necessity by Sex and Age Group

Sex and age group	Home visit necessary		Could have attended surgery				Total	
			in present circumstances		if special transport were provided			
	No	%	No	%	No	%	No	%
Males	530	69.1	95	12.4	142	18.5	767	100.0
Females	822	72.4	108	9.5	206	18.1	1,136	100.0
0 - 9	247	18.3	69	34.0	48	13.8	364	19.1
10 - 19	79	5.8	17	8.4	11	3.2	107	5.6
20 - 59	451	33.3	74	36.5	61	17.5	586	30.8
60 and over	575	42.5	43	21.2	227	65.2	845	44.3
Total	1,353*	100.0	203	100.0	348**	100.0	1,906	100.0

* includes one age and sex unknown

** includes one female, age unknown

*** includes unknowns cited above plus two necessity unknown (Also, sex is unknown for three visits)

Note : % for males and females add across rows

TABLE 21

Home Visits : Necessity by Type of Consultation

Type of consultation	Home visit necessary		Could have attended surgery				Total	
			in present circumstances		if special transport were provided			
	No	%	No	%	No	%	No	%
New	716	52.9	144	70.9	123	35.3	983	51.6
Acute return	317	23.4	25	12.3	49	14.1	391	20.5
Chronic return	263	19.4	33	16.3	174	50.0	470	24.7
Pregnancy	56	4.1	1	0.5	2	0.6	59	3.1
Total	1,353*	100.0	203	100.0	348	100.0	1,906**	100.0

* includes one consultation type unknown

** includes unknown cited above plus two visits consultation type and necessity unknown

TABLE 22

Home Visits : Necessity by Day of Week and Season

Day of week	Home visit necessary		Could have attended surgery				Total	
			in present circumstances		if special transport were provided			
	No	%	No	%	No	%	No	%
Monday	251	18.6	35	17.2	81	23.3	367	19.3
Tuesday	236	17.4	36	17.7	89	25.6	361	18.9
Wednesday	202	14.9	25	12.3	60	17.2	287	15.1
Thursday	196	14.5	23	11.3	54	15.5	273	14.3
Friday	215	15.9	31	15.3	41	11.8	287	15.1
Saturday	151	11.2	32	15.8	20	5.8	203	10.7
Sunday	101	7.5	20	9.9	3	0.9	124	6.5
Total	1,353*	100.0	203*	100.0	348	100.0	1,906**	100.0
Winter	865	72.5	111	9.3	215	18.0	1,193***	100.0
Summer	488	68.4	92	12.9	133	18.7	713	100.0

* includes one day of week unknown

** includes two necessity unknown, two day of week unknown

*** includes two necessity unknown

Note : % for Winter and Summer add across rows.

TABLE 23

Home Visits : Necessity by Diagnostic Categories

Diagnostic Categories	Home visit necessary		Could have attended surgery				Total	
			in present circumstances		if special transport were provided			
	No	%	No	%	No	%	No	%
1. Communicable diseases	127	89.4	11	7.8	4	2.8	142	100.0
2. Neoplasms	59	93.7	1	1.5	3	4.8	63	100.0
3. Allergic/endocrine/ metabolic/nutritional	30	71.4	6	14.3	6	14.3	42	100.0
4. Blood	9	64.2	2	14.3	3	21.4	14	100.0
5. Mental disorders	33	63.5	9	17.3	10	19.2	52	100.0
6. Nervous system	58	67.4	13	15.1	15	17.4	86	100.0
7. Circulatory	148	63.8	13	5.6	71	30.6	232	100.0
8. Respiratory	457	69.5	70	10.6	131	19.9	658	100.0
9. Digestive	141	82.0	12	7.0	19	11.1	172	100.0
10. Genito-urinary	62	72.9	7	8.2	16	18.8	85	100.0
11. Pregnancy	56	94.9	1	1.7	2	3.4	59	100.0
12. Skin	24	49.0	10	20.4	15	30.6	49	100.0
13. Bones	70	61.4	15	13.2	29	25.4	114	100.0
14. Congenital	-	-	-	-	-	-	-	-
15. Infancy	-	-	-	-	-	-	-	-
16. Symptomatic	42	60.0	12	17.1	16	22.9	70	100.0
17. Accidents	20	46.5	20	46.5	3	7.0	43	100.0
18. Other	16	72.7	1	4.6	5	22.7	22	100.0
Total	1,353*	71.0	203	10.7	348	18.3	1,906**	100.0

* includes one diagnosis unknown

** includes one diagnosis only unknown and two necessity and diagnosis unknown

TABLE 24

Home Visits : Necessity as Assessed by Individual Doctor

Patient mobility	Doctor																Total	
	1		2		3		4		5		6		7		8			
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Home visit necessary	256	76.2	109	58.0	79	54.9	176	83.8	353	78.4	300	76.9	50	32.3	30	90.9	1,353	71.0
Could have attended surgery -																		
in present circumstances	29	8.6	26	13.8	20	13.9	9	4.3	67	14.9	27	6.9	22	14.2	3	9.1	203	10.7
if special transport were provided	49	14.6	53	28.2	45	31.3	25	11.9	30	6.7	63	16.2	83	53.6	-	-	348	18.3
Total	336*	100.0	188	100.0	144	100.0	210	100.0	450	100.0	390	100.0	155	100.0	33	100.0	1,906*	100.0

* includes two necessity unknown

TABLE 25

Number of Consultations and Contact Rates per 100 1966 Estimated Population and Surgery/Home Visit Ratios by Geographical Location

Numbers of consultations, and contact rates per 100 1966 estimated population	Witney U.D.		Standlake (site of the branch surgery)		Group 1 (Good bus services)		Group 2 (Limited bus services)		Group 3 (Poor bus services)		Rural Practice Area		Total Practice Area	
	No. of consultations	Contact rate	No. of consultations	Contact rate	No. of consultations	Contact rate	No. of consultations	Contact rate	No. of consultations	Contact rate	No. of consultations	Contact rate	No. of consultations	Contact rate
Health centre (doctors)	4,151	42.4	209	27.5	487	29.5	1,095	34.4	268	28.5	2,059	31.5	6,211*	38.0
Health centre (nurse)	775	7.9	50	6.6	105	6.4	190	6.0	62	6.6	407	6.2	1,182	7.2
Branch surgery	-	-	138	18.2	-	-	-	-	8	0.9	146	2.2	146	0.9
Home visits	1,203	12.3	101	13.3	177	10.7	347	10.9	78	8.3	703	10.8	1,906	11.7
Total consultations	6,129	62.5	498	65.5	769	46.6	1,632	51.3	416	44.3	3,315	50.8	9,445*	57.8
Estimated 1966 practice population	9,800		760		1,650		3,180		940		6,530		16,330	
Surgery (doctors) /home visit ratio	3.5		3.4		2.8		3.2		3.5		3.1		3.3	

* Includes one address unknown

Note : For a description of the Practice Area subdivisions see page 21.

TABLE 26

Seasonal Surgery/Home Visit Ratios by Geographical Location

(Doctors Only)

Seasonal Surgery/Home Visit Ratios	Witney U.D.	Standlake (site of the branch surgery)	Group 1 (Good bus services)	Group 2 (Limited bus services)	Group 3 (Poor bus services)	Rural Practice Area	Total Practice Area
Winter							
Surgery consultations	2,181	187	263	602	145	1,197	3,379*
Home visit consultations	753	51	108	236	45	440	1,193
Surgery/home visit ratios	2.9	3.7	2.4	2.6	3.2	2.7	2.8
Summer							
Surgery consultations	1,970	160	223	493	131	1,007	2,977
Home visit consultations	450	50	69	111	33	263	713
Surgery/home visit ratios	4.4	3.2	3.2	4.4	4.0	3.8	4.2

* Includes one address unknown

Note : for a description of the Practice Area subdivisions see page 21.

TABLE 27

Proportion of Home Vists which were Considered Necessary by Geographical Location

Necessity of Home Visit	Witney U.D.	Standlake (site of the branch surgery)	Group 1 (Good bus services)	Group 2 (Limited bus services)	Group 3 (Poor bus services)	Rural Practice Area	Total Practice Area
	%	%	%	%	%	%	%
Home visit necessary	71.4	65.3	66.7	72.0	76.9	70.3	71.)
Could attend surgery in the present circumstances	11.7	8.9	10.7	8.6	5.1	8.8	10.7
Could attend surgery if special transport provided	16.7	25.7	22.6	19.3	18.0	20.9	18.3
Total all home visits %	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total no.	1,203*	101	177	347	78	703	1,906*

* Includes two 'necessity' unknown

Note : for a description of the Practice Area subdivisions see page 21.

TABLE 28

Methods of Travel for Health Centre Consultations (for doctors and nurse) and Branch Surgery

Methods of travel to surgery	Health Centre (doctors)	Nurse	Branch Surgery	Total
	%	%	%	%
Walk	35.4	29.8	75.3	35.5
Public transport	9.8	9.3	-	9.5
Own car	47.9	35.2	21.9	45.7
Neighbour's car	4.2	12.4	1.4	5.2
Taxi	0.7	2.5	-	0.9
Other	2.1	10.9	1.4	3.2
Total %	100.0	100.0	100.0	100.0
Total no.	6,211	936	146	7,293

Note : Nurse consultations excludes contacts who were referred to the nurse in the same surgery session as they were seen by the doctor.

TABLE 29

Methods of Travel to the Health Centre (doctors and nurse consultations combined) by Day of Week

Method of travel to Health Centre	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total
	%	%	%	%	%	%	%
Walk	35.3	36.5	39.1	31.5	32.2	29.2	34.7
Public transport	10.8	9.9	6.2	12.4	9.4	10.6	9.7
Own car	43.4	44.9	46.1	47.3	48.8	51.3	46.2
Neighbour's car	5.0	4.8	5.9	4.9	5.8	4.9	5.2
Taxi	1.0	0.7	1.3	0.6	0.6	1.7	0.9
Other	4.6	3.2	1.4	3.4	3.3	2.4	3.2
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total no.	1,690	1,391	1,264	944	1,427	425	7,147*

* Includes six weekdays unknown

Note : for a definition of nurse consultations see table 28.

TABLE 30

Methods of Travel to the Health Centre (doctors and nurse consultations combined) by Sex and Age Group

Method of travel to Health Centre	0-9 years		10-19 years		20-59 years		60 years and over		Total	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
	%	%	%	%	%	%	%	%	%	%
Walk	33.8	31.3	42.7	49.3	23.4	38.0	34.2	38.7	29.4	38.5
Public transport	7.7	10.5	7.8	9.8	3.2	11.1	12.8	21.5	6.1	12.4
Own car	53.0	51.5	32.2	29.2	64.1	43.8	41.2	23.8	54.4	40.3
Neighbour's car	4.5	4.5	6.8	6.2	4.2	4.0	6.0	12.7	4.9	5.3
Taxi	0.4	0.9	3.5	0.7	0.4	0.8	0.2	2.0	0.8	1.0
Other	0.6	1.3	7.0	4.8	4.6	2.4	5.6	1.4	4.4	2.4
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total no.	509	447	398	418	1,628	2,687	468	592	3,003	4,144

Note : for a definition of nurse consultations see table 28.

TABLE 31

Methods of Travel to the Health Centre (doctors and nurse consultations combined) by Geographical Location

Methods of travel to Health Centre	Witney U.D.	Standlake (site of the branch surgery)	Group 1 (Good bus services)	Group 2 (Limited bus services)	Group 3 (Poor bus services)	Rural Practice Area	Total Practice Area
	%	%	%	%	%	%	%
Walk	48.2	1.2	5.0	10.4	5.4	7.5	34.7
Public transport	5.6	4.0	25.2	20.0	8.6	18.0	9.7
Own car	38.3	81.8	60.7	57.2	67.7	62.0	46.2
Neighbour's car	3.9	9.1	5.8	8.2	10.0	8.0	5.2
Taxi	0.6	0.8	0.4	1.3	4.5	1.4	0.9
Other	3.3	3.2	2.9	2.9	3.8	3.0	3.2
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total no.	4,772	253	555	1,253	313	2,374	7,147*

* Includes one address unknown

Note : for a definition of nurse consultations see Table 28; a description of the Practice Area subdivisions is given on page 21.

TABLE 32

Methods of Travel to Health Centre (doctors and nurse consultations combined) by Availability of Private Car

Method of travel to Health Centre	Availability of private car			Total
	None	Sometimes	Yes, all times	
	%	%	%	%
Walk	60.7	36.5	10.2	34.7
Public transport	19.2	10.4	0.8	9.7
Own car	0.3	46.0	85.4	46.2
Neighbour's car	9.7	4.9	2.0	5.2
Taxi	2.5	0.5	0.1	0.9
Other	7.6	1.8	1.5	3.2
Total %	100.0	100.0	100.0	100.0
Total no.	1,863	3,079	2,205	7,147

Note : For a definition of nurse consultations see table 28.

TABLE 33

Availability of Private Car for Health Centre Contacts (doctors and nurse consultations combined) by Age Group and Sex

Age Group	Males					Females				
	Availability of private car					Availability of private car				
	none	sometimes	yes, all times	Total		none	sometimes	yes, all times	Total	
	%	%	%	%	No	%	%	%	%	No
0-9	15.3	65.8	18.9	100.0	509	17.9	67.6	14.5	100.0	447
10-19	33.2	50.5	16.3	100.0	398	29.7	61.0	9.3	100.0	418
20-59	20.6	13.0	66.4	100.0	1,628	21.0	57.9	21.1	100.0	2,687
60 and over	46.2	13.7	40.2	100.0	468	56.3	26.2	17.6	100.0	592
all ages	25.4	27.0	47.6	100.0	3,003	26.6	54.7	18.7	100.0	4,144

Note : for a definition of nurse consultations see table 28.

TABLE 34

Rates of Car Non Availability for 1966 Estimated Population and Surgery, Home Visit and Total Consultations* 1968 Witney Study, by Geographical Location

Rates of car non availability	Witney U.D.	Standlake (site of the branch surgery)	Group 1 (Good bus services)	Group 2 (Limited bus services)	Group 3 (Poor bus services)	Rural Practice Area	Total Practice Area
	%	%	%	%	%	%	%
% of 1966 estimated population living in private households without car	37.5	34.7	25.2	29.0	16.2	27.1	33.4
% of surgery (health centre both doctors and nurse* and branch surgery) contacts without access to a car	29.6	16.4	18.0	22.0	17.5	19.7	26.1
% of home visits without access to a car	43.6	25.7	36.7	36.0	20.5	33.0	39.7
% of all *consultations without access to a car	32.4	18.3	22.5	25.1	18.1	22.6	29.0

Source : 1966 Sample Census, 1968 Witney Study.

Note : 'Car non availability' refers to patients who did not have a private car available to travel to the surgery at all.

* for a definition of nurse consultations, see table 28; a description of the Practice Area subdivisions is given on page 21.

TABLE 35

Surgery/Home Visiting Ratios (doctors' contacts) by Availability of Private Car, Age Group and Sex

Age Group	Males			Females		
	Surgery/home visiting ratios			Surgery/home visiting ratios		
	Availability of private car			Availability of private car		
	None	Sometimes	At all times	None	Sometimes	At all times
0 - 9	1.9	2.2	4.3	2.6	2.5	1.6
10 - 19	4.9	6.1	3.6	6.4	8.9	4.8
20 - 29	12.5	10.8	9.0	12.4	9.0	16.0
30 - 39	7.1	3.9	8.5	3.7	5.7	7.2
40 - 49	4.7	7.3	8.0	4.1	5.9	6.9
50 - 59	4.4	6.2	4.5	3.6	5.8	8.4
60 - 69	3.1	4.3	3.4	2.1	2.7	5.6
70 - 79	0.9	0.6	1.2	0.6	1.0	1.8
80 years and over	0.2	0.1	0.0	0.1	0.2	0.4
Total	2.4	2.8	4.9	1.9	4.3	5.0

TABLE 36

Surgery/Home Visiting Ratios (doctors' contacts) by Marital Status for Selected Age Groups and Sex

Age Group	Surgery/home visiting ratios					
	Males			Females		
	Marital status			Marital status		
	Single	Married	Widowed/ Divorced	Single	Married	Widowed/ Divorced
60 - 69	5.6	3.2	4.5	3.3	3.1	1.7
70 - 79	0.0	1.1	0.4	1.0	0.6	0.9
80 years and over	0.0	0.1	0.2	0.2	0.0	0.2

TABLE 37

Percentages of Contacts to whom a Private Car was not available (doctors' contacts) by Marital Status for Selected Age Groups and Sex

Age Group	Contacts to whom a private car was not available											
	Males						Females					
	Single		Married		Widwd/divcd		Single		Married		Widwd/divcd	
	No	% of all contacts	No	% of all contacts	No	% of all contacts	No	% of all contacts	No	% of all contacts	No	% of all contacts
60 - 69	25	75.8	135	38.2	7	31.8	30	70.0	126	44.4	106	72.1
70 - 79	1	33.3	93	60.0	35	55.6	28	77.8	76	67.3	131	67.2
80 years and over	1	100.0	33	46.5	24	66.7	17	81.0	27	55.1	97	56.7
Total over 60 years	27	73.0	261	45.1	66	54.6	75	75.0	229	51.4	334	65.1

Note : for a definition of non availability see Table 34

TABLE 38

Surgery/Home Visiting Ratios (doctors' contacts) by Whether a Child Under 5 Years was in the Household of the Patient (excluding the patient) for Selected Age Groups

Age Group	Surgery/home visiting ratio	
	Whether a child under five years in the household of the patient	
	Yes	No
0 - 4	1.6	2.5
5 - 9	2.5	2.9
10 - 19	3.5	6.9
20 - 39	7.6	8.2

TABLE 39

Surgery/Home Visting Ratios by Whether Married Women were in employment for Selected Age Groups

Age Group	Surgery/home visiting ratios		
	Married women in employment		
	No	Part-time	Full-time
20 - 29	8.3	12.2	18.1
30 - 39	4.5	11.9	5.9
40 - 49	4.4	5.8	7.1
50 - 59	4.1	4.1	9.5
20 - 59	5.5	6.9	9.6

Note : doctors' contacts only

TABLE 40

Necessity of Home Visits by Availability of Private Car and Age Groups

Age Group	Home visit necessary			Home visit unnecessary in the present circumstances			Home visit unnecessary if special transport available		
	Availability of private car			Availability of private car			Availability of private car		
	None	Sometimes	All times	None	Sometimes	All times	None	Sometimes	All times
0 - 9	39	168	40	4	53	12	11	35	2
10 - 19	27	39	13	3	8	6	2	7	2
20 - 59	110	204	137	16	24	34	25	22	14
60 years and over	323	148	104	17	10	16	180	39	9
Total	499	559	294	40	95	68	218	103	27

Note : excluded are three patient mobility unknown
doctors' contacts only

TABLE 41

Necessity of Home Visits by Marital Status for Selected Age Groups

Age Group	Single			Married			Widowed/divorced		
	Necessity of home visit			Necessity of home visit			Necessity of home visit		
	Necessary	'Unnecessary in present circumstances'	'Unnecessary if special transport'	Necessary	'Unnecessary in present circumstances'	'Unnecessary if special transport'	Necessary	'Unnecessary in present circumstances'	'Unnecessary if special transport'
60 - 69	8	2	5	112	9	34	36	2	21
70 - 79	14	2	2	88	7	48	97	8	45
80 years and over	11	-	8	83	6	23	126	7	41
Total, 60 years and over	33	4	15	283	22	105	259	17	107

Note : doctors' contacts only

TABLE 42

Necessity of Home Visits to Patients with Household Members under 5 Years of Age (excluding the patient) for Selected Age Groups

Age Group	Necessity of home visit						Total all home visits	
	Necessary		'Unnecessary in the present circumstances'		'Unnecessary if special transport provided'			
	Child under 5 years in the household of patient		Child under 5 years in the household of patient		Child under 5 years in the household of patient		Child under 5 years in the household of patient	
	Yes	No	Yes	No	Yes	No	Yes	No
0 - 4	91	55	13	22	17	17	121	94
%	75.2	58.5	10.7	23.4	14.1	18.1	100.0	100.0
5 - 9	49	52	8	26	5	9	62	87
%	79.0	59.8	12.9	29.9	8.1	10.3	100.0	100.0
10 - 19	18	61	2	15	-	11	20	87
%	90.0	70.1	10.0	17.2	-	12.6	100.0	100.0
20 - 39	113	110	13	31	10	12	136	153
%	83.1	71.9	9.6	20.3	7.4	7.8	100.0	100.0
Total all ages	300	1,052	42	161	35	313	377	1,526
Total %	79.6	68.9	11.1	10.6	9.3	20.5	100.0	100.0

Note : excluded are three age and child under 5 unknown

% total across rows

doctors' contacts only

TABLE 43

Average Consultation Times; Health Centre, Branch Surgery and All Home Visits, and Average Travel Time for All Home Visits by Doctor and Season

Doctor	Health centre		Branch surgery		Home visits				Total both seasons		
	Average consultation time - minutes		Average consultation time - minutes		Average consultation time - minutes		Average travel time - minutes		Average consultation time - minutes		Average travel time - minutes
	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Health centre	Home visits	
1	10.2	10.4	-	-	11.5	13.8	8.0	8.8	10.3	12.4	8.3
2	8.0	8.7	-	-	14.4	14.8	6.2	7.2	8.2	14.5	6.5
3	-	9.7	-	7.4	-	13.9	-	9.1	9.7	13.9	9.1
4	9.4	11.0	-	-	12.7	15.8	8.1	8.7	9.8	13.4	8.2
5	7.0	8.6	-	-	8.6	12.9	6.7	12.1	7.8	9.8	8.3
6	6.1	7.1	-	-	8.4	9.5	5.8	7.4	6.6	8.8	6.5
7	8.0	-	7.2	-	13.0	-	11.2	-	8.0	13.0	11.2
8	-	7.4	-	-	-	11.4	-	7.5	7.4	11.4	7.5
Total	7.9	8.6	7.2	7.4	10.8	12.7	7.5	9.0	8.2	11.5	8.0

Note : Total numbers of health centre and home visit consultations for individual doctors are given in Tables 12 and 24.

TABLE 44

Average Length of Consultation Per Patient, and Proportion of All Patients Seen at Health Centre Surgeries of Various Sizes by Doctor

Doctor	Health centre surgeries attended by -								All health centre surgeries	
	1 or 2 patients		3 - 12 patients		13 - 24 patients		More than 24 patients			
	Average consult - mins	% of all patients	Average consult - mins	% of all patients	Average consult - mins	% of all patients	Average consult - mins	% of all patients	Average consult - mins	% of all patients
1	11.6	1.1	11.1	29.2	9.9	69.7	-	-	10.3	100.0
2	10.0*	0.1*	10.2	11.9	8.0	88.0	-	-	8.2	100.0
3	-	-	11.8	21.9	9.1	78.1	-	-	9.7	100.0
4	11.3	2.3	13.7	9.4	9.4	84.8	8.4*	3.6*	9.8	100.0
5	12.2	1.2	9.6	2.0	8.4	46.6	7.0	50.2	7.8	100.0
6	13.2	1.4	8.8	0.8	6.7	58.2	6.2	39.6	6.6	100.0
7	13.3	0.7	-	-	8.0	93.4	6.4*	5.9*	8.0	100.0
8	-	-	9.6	12.0	7.1	88.0	-	-	7.4	100.0
Total	12.2	1.0	11.1	8.7	8.2	69.4	6.7	20.8	8.2	100.0

Note : % add across rows

* one surgery only

TABLE 45

Average Number of Patients Per Health Centre Surgery and Average Length of Consultation by Day of Week and Time of Day

Day of week	Health centre morning surgeries		Health centre afternoon surgeries		Health centre evening surgeries		All health centre surgeries	
	Average number of patients	Average consult.time - minutes	Average number of patients	Average consult.time - minutes	Average number of patients	Average consult.time - minutes	Average number of patients	Average consult.time - minutes
Monday	18	8.1	22	7.0	16	8.6	17	8.2
Tuesday	10	8.9	12	9.9	19	7.9	14	8.6
Wednesday	16	7.5	2	41.0	20	8.0	17	7.8
Thursday	11	8.7	-	-	17	8.6	14	8.7
Friday	16	7.8	15	7.8	22	7.4	18	7.6
Saturday	15	8.8	-	-	-	-	15	8.8
Sunday	4*	11.3	1*	15.0	-	-	3	12.0
Total	14	8.2	14	8.8	19	8.1	16	8.2

* one surgery only

TABLE 46

Total Number of Routine and Out of Hours Home Visits, Average Length of Home Visit Consultations and Average Length of Home Visit Travel Time per Consultation by Season

Classification of home visit	Total number of home visits			Average length of home visit consultations - minutes			Average length of home visit travel time per consultation - minutes		
	Winter	Summer	Both	Winter	Summer	Both	Winter	Summer	Both
Routine	959	587	1,546	10.0	12.2	10.8	7.2	8.4	7.7
Out of hours	235	125	360	14.3	15.3	14.6	8.5	11.6	9.6

Note : Routine visits are those which were part of a home visit round that was started after 8.00 a.m. or before 7.00 p.m. on weekdays or 8.00 a.m. or 1.00 p.m. on Saturdays

Out of hours visits are all those outside the 'routine' category

TABLE 47

Routine Home Visits: Type of Consultation and Average Length by Doctor

Doctor	Home visits: type of consultation - average length of consultation in minutes				
	New	Acute return	Chronic return	Pregnancy	Total
1	13.3	10.3	11.0	-	11.8
2	13.9	13.5	14.0	-	13.8
3	14.4	11.1	13.2	-	12.9
4	12.5	13.9	13.2	11.1	12.7
5	8.3	8.6	12.8	6.5	8.8
6	7.8	7.3	10.6	8.2	8.4
7	10.8	13.8	11.6	-	11.5
8	10.4	12.1	12.5	-	11.3
Total	10.5	10.4	11.9	8.8	10.8

TABLE 48

Number of Home Visits and Average Length of Visit Consultations for Routine Home Visits by Doctor and Age Group

Doctor	Number of home visits and average length of visit consultations																			
	0 - 9 years		10 - 19 years		20 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 - 69 years		70 - 79 years		80 - 89 years		90 + years		Total	
	No.	Mins	No.	Mins	No.	Mins	No.	Mins	No.	Mins	No.	Mins	No.	Mins	No.	Mins	No.	Mins	No.	Mins	No.	Mins
1	20	15.0	9	10.1	5	11.0	7	12.3	11	12.7	22	10.3	50	13.3	74	9.9	77	11.8	5	18.0	280	11.8
2	18	13.1	7	14.3	3	11.7	15	14.0	9	15.3	13	12.7	36	12.6	24	14.8	32	14.8	-	-	157	13.8
3	5	10.2	1	8.0	4	21.3	2	12.5	10	13.8	5	16.4	22	10.6	33	11.1	29	12.1	7	26.6	118	12.9
4	59	10.7	15	10.5	12	10.4	10	16.5	18	15.0	12	13.8	10	16.0	12	12.5	21	15.4	2	12.5	171	12.7
5	94	7.5	31	8.1	15	6.5	40	8.4	36	8.4	27	9.9	35	10.2	51	9.6	19	14.1	3	6.7	351	8.8
6	77	6.4	5	6.2	45	7.9	34	8.9	16	9.5	28	7.3	17	9.2	28	10.2	46	10.6	9	12.2	305	8.4
7	12	10.2	11	12.5	8	9.2	7	9.6	13	11.4	12	14.7	28	11.2	33	11.2	8	14.2	-	-	132	11.5
8	1	10.0	1	8.0	1	5.0	2	7.5	5	13.2	3	10.0	3	11.3	6	10.8	10	12.9	-	-	32	11.3
Total	286	8.9	80	9.8	93	8.9	117	10.3	118	11.5	122	10.8	201	11.8	261	10.8	242	12.6	26	16.6	1,546	10.8

TABLE 49

Average Length and Numbers of Routine Home Visits by Necessity, Doctor and Recording Session

Doctor	Average length in minutes, and numbers of, home visit consultations																	
	Necessary						'Unnecessary' in present circumstances						'Unnecessary' if special transport provided					
	Winter		Summer		Both		Winter		Summer		Both		Winter		Summer		Both	
	Tot no.	Average consult - mins	Tot no.	Average consult - mins	Tot no.	Average consult - mins	Tot no.	Average consult - mins	Tot no.	Average consult - mins	Tot no.	Average consult - mins	Tot no.	Average consult - mins	Tot no.	Average consult - mins	Tot no.	Average consult - mins
1	134	10.6	84	14.3	218	12.0	13	14.2	4	11.0	17	13.4	16	9.1	29	10.3	45	9.9
2	61	13.3	27	15.4	88	13.9	12	13.3	5	12.0	17	12.9	39	13.7	13	14.2	52	13.8
3	-	-	62	14.0	62	14.0	-	-	10	16.4	10	16.4	-	-	45	10.6	45	10.6
4	110	11.8	33	17.0	143	13.0	5	10.0	1	15.0	6	10.8	15	10.7	7	12.9	22	11.4
5	195	7.7	72	12.1	267	8.9	34	6.7	22	9.7	56	7.9	19	8.2	9	15.0	28	10.4
6	138	8.3	93	8.7	231	8.5	4	7.3	9	13.3	13	11.5	32	7.0	29	8.5	61	7.7
7	33	12.3	-	-	33	12.3	20	9.6	-	-	20	9.6	79	11.7	-	-	79	11.7
8	-	-	29	11.4	29	11.4	-	-	3	10.0	3	10.0	-	-	-	-	-	-
Total	671	9.8	400	12.7	1,071	10.9	88	9.6	54	12.0	142	10.5	200	10.7	132	10.9	332	10.8

Note : excluded is one visit necessity unknown

TABLE 50

Average Length and Numbers of Routine Home Visits by Location

Necessity of home visit	Witney U.D.		Standlake (site of the branch surgery)		Group 1 (Good bus services)		Group 2 (Limited bus services)		Group 3 (Poor bus services)	
	Total no.	Average consult - mins	Total no.	Average consult - mins	Total no.	Average consult - mins	Total no.	Average consult - mins	Total no.	Average consult - mins
Necessary	683	11.0	53	12.4	95	11.4	196	11.1	44	13.8
'Unnecessary in the present circumstances'	88	9.6	9	10.2	16	9.2	26	14.2	3	12.5
'Unnecessary if special transport were provided'	193	10.6	25	9.8	39	11.0	61	12.1	14	10.0
Total	965*	10.8	87	11.7	150	11.2	283	11.6	61	12.7

* includes one necessity unknown

TABLE 51

Estimates of Total Travelling Time Saved when Visits 'Unnecessary if Special Transport were Provided' and 'Unnecessary in the Present Circumstances' are Excluded from the Routine Visiting Rounds for Doctors and Recording Sessions

Doctor	Winter		Summer		Total	
	Estimated travelling time saved from routine rounds if		Estimated travelling time saved from routine rounds if		Estimated travelling time saved from routine rounds if	
	'Unnecessary if special transport were provided' visits only are excluded - mins	'Unnecessary if special transport were provided' and 'Unnecessary in present circumstances' visits are excluded - mins	'Unnecessary if special transport were provided' visits only are excluded - mins	'Unnecessary if special transport were provided' and 'Unnecessary in present circumstances' visits are excluded - mins	'Unnecessary if special transport were provided' visits only are excluded - mins	'Unnecessary if special transport were provided' and 'Unnecessary in present circumstances' visits are excluded - mins
1	64	137	157	183	221	320
2	203	257	59	85	262	342
3	-	-	235	298	235	298
4	61	90	38	42	99	132
5	70	199	39	126	109	325
6	127	140	131	197	258	337
7	413	540	-	-	413	540
8	-	-	-	11	-	11
Total	938	1,363	659	942	1,597	2,305

Note : for details of calculations see Appendix 2

TABLE 52

Estimates of Total Travelling Time Saved when Visits 'Unnecessary if Special Transport were Provided' and 'Unnecessary in the Present Circumstances' are Excluded from the Routine Visiting Rounds for Days of Week and Recording Sessions

Day of week	Winter		Summer		Total	
	Estimated travelling time saved from routine rounds if		Estimated travelling time saved from routine rounds if		Estimated travelling time saved from routine rounds if	
	'Unnecessary if special transport were provided' visits only are excluded - mins	'Unnecessary if special transport were provided' and 'Unnecessary in present circumstances' visits are excluded - mins	'Unnecessary if special transport were provided' visits only are excluded - mins	'Unnecessary if special transport were provided' and 'Unnecessary in present circumstances' visits are excluded - mins	'Unnecessary if special transport were provided' visits only are excluded - mins	'Unnecessary if special transport were provided' and 'Unnecessary in present circumstances' visits are excluded - mins
Monday	232	325	173	235	405	560
Tuesday	184	280	211	267	395	547
Wednesday	160	221	107	166	267	387
Thursday	187	265	103	129	290	394
Friday	142	219	65	131	207	350
Saturday	33	53	-	14	33	67
Total	938	1,363	659	942	1,597	2,305

Note : for details of calculations see Appendix 2

TABLE 53

Details of Usage and Costs in Practices Operating Transport Schemes

Study	Type of practice	Dates of fieldwork and no of full-time doctors	Vehicle type and vehicle capital expenditure	Running costs per 12 months	Number of patient transportations in 12 months	Average running cost per patient transportation	Estimated cost per doctor hour saved
Smith and Seddon (1966)	urban (Morecombe) practice pop 5,000	1965-66 2 drs	saloon car privately owned	wages £168[2] car expenses £52.50[2]	504 (six months only)	22p (1965-66)	£1.75
Floyd (1968)	urban (Croydon) practice pop 8,500	1966-67 3 drs	saloon car privately owned	wages £140.50[3] car expenses £22.35[3]	860 (1966) 1,412 (1967)	18p (1966-67)	£1+
Lance (1971)							
Practice A	urban (Greater London) practice pop 9,178	1968-70 3 drs	mini bus £921 + £430[1]	wages £483[4] bus expenses £183[4]	1,826 (1968-69) 2,623 (1969-70)	36p (1968-69) 36p (1969-70)	n.a.
Practice B	urban (Greater London) practice pop 14,779	1968-70 4 drs	mini bus £790 + £352[1]	wages £1,166[4] bus expenses £370[4]	1,229 (1968-69) 1,384 (1969-70)	25p (1968-69) 59p (1969-70)	n.a.
Practice C	industrial/rural (Wales) practice pop 14,661	1968-70 6 drs	mini bus £915	wages £880[4] bus expenses £409[4]	3,643 (1968-69) - [6] (1969-70)	35p[6] (1968-69) - [6] (1969-70)	n.a.
Practice D	industrial/rural (Wales) practice pop 2,846	1968-70 1 dr	Landrover £1,057	wages £574[4] bus expenses £180[4]	840 (1968-69) - [6] (1969-70)	90p[6] (1968-69) - [6] (1969-70)	n.a.
Practice E	rural (Ross-shire) practice pop 10,547	1968-70 6 drs	mini bus £887 + £450[1]	wages £1,250[4,5] bus expenses £507[4,5]	760 (1968-69) 1,294 (1969-70)	£1.65 (1968-69) £1.25 (1969-70)	n.a.
Fisher and Ballard (1974)	urban (Bournemouth) practice pop 10,200	1974 4 drs	saloon car privately owned	petrol reimbursement only	2,000[7] (1974)	25p[8] (1974)	n.a.

[1] cost of radio telephone equipment

[2] estimates as published costs are for six months only

[3] average of two years, mileage expenses paid for only part of the experimental period

[4] recordings between mid November 1968 and mid November 1969

[5] based on recordings for nine months only

[6] in this period practices C and D shared transport; total patient transportations 4,414, average cost per transportation 43p

[7] based on estimate of average weekly patient transportations of 40

[8] petrol only

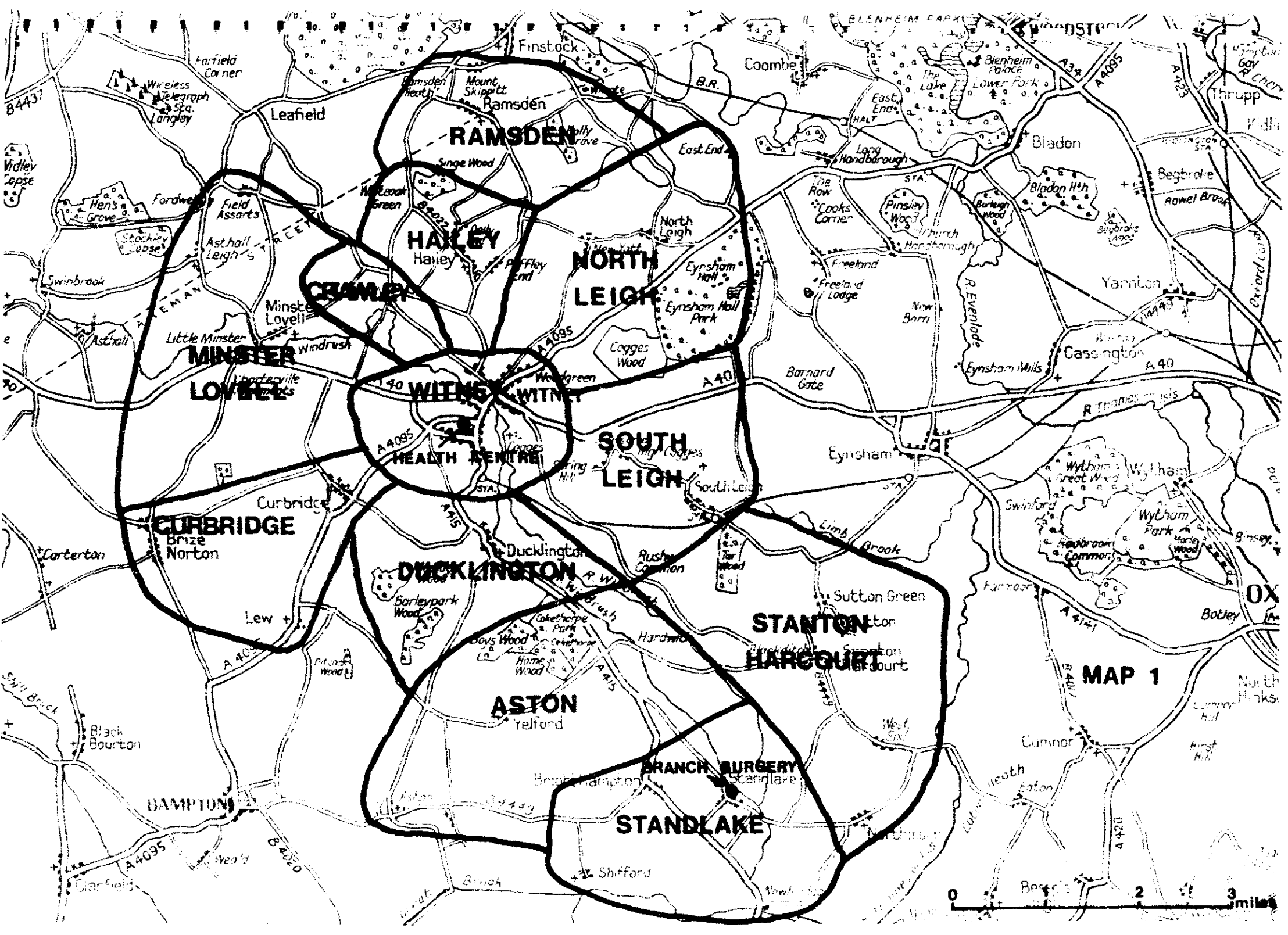
Note : The average costs per patient in Lance's practices exclude capital costs.

n.a. not available

MAP 1

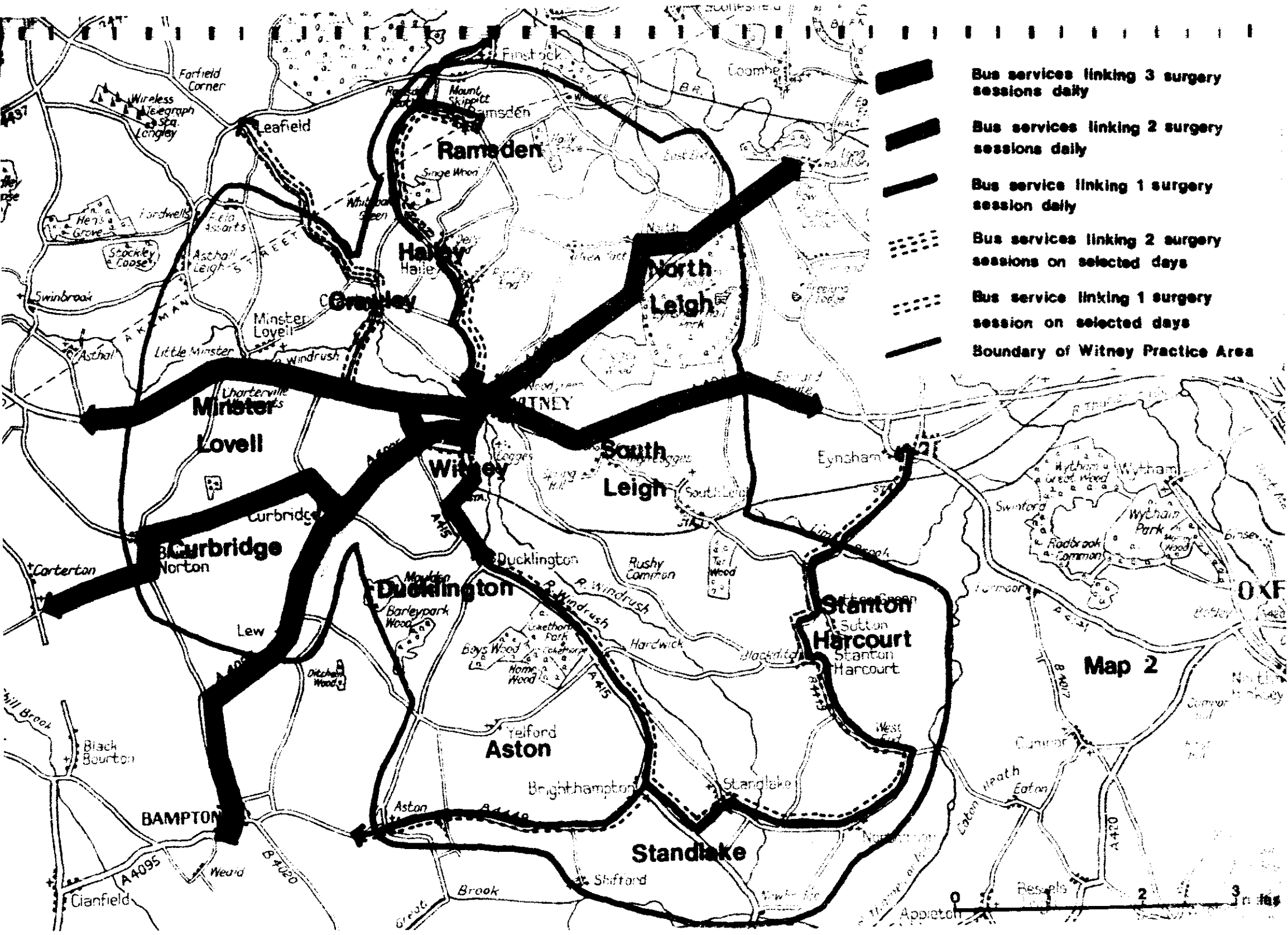
The Witney Practice Area

(see Table 1)


RAMSDEN
HAILEY
CRAWLEY
NORTH LEIGH
MINSTER LOVELL
WITNEY
SOUTH LEIGH
HEALTH CENTRE
CURBRIDGE
DUCKLINGTON
STANTON HARCOURT
ASTON
BRANCH SURGERY
STANDLAKE
BAMPTON
MAP 1
0 1 2 3 miles

MAP 2

The frequency of bus services linking the
Rural Practice Areas with the Witney Health Centre


Bus services linking 3 surgery sessions daily
Bus services linking 2 surgery sessions daily
Bus service linking 1 surgery session daily
Bus services linking 2 surgery sessions on selected days
Bus service linking 1 surgery session on selected days
Boundary of Witney Practice Area
Ramsden
Hailey
North Leigh
Crawley
Minster Lovell
Witney
South Leigh
Curbridge
Ducklington
Stanton Harcourt
Aston
Standlake
BAMPTON
Map 2
0
1
2
3
miles