

I

INTRODUCTION

In a recent discussion on Change and the National Health Service, Brotherston stressed the need for a critical examination of some of the traditions of general practice. 'It is essential that the pattern of practice should adapt to save the doctor's time for professional activity.' One of the implications of this is 'the possibility of cutting down the hours at present spent in chauffeuring . . . to . . . patients'.⁸

With this aim in mind the Department of Health and Social Security (then the Ministry of Health) decided to finance an experimental transport service for patients in selected general practices. The purpose was to bring some patients to the surgery to see the doctor instead of the doctor travelling to see them at home. The Institute for Social Studies in Medical Care (then the Medical Care Research Unit of the Institute of Community Studies) was asked to look at the effect of the service on the doctors' work and their relationships with their patients.

One trend in general-practice development which made such a scheme seem attractive was the increase in partnerships, group practice and health centres. When doctors work together in groups with secretarial and other ancillary help, the organization of a transport service becomes more feasible. At the same time some general practitioners were questioning their methods of work and thinking in terms of other ways of re-organizing their professional activities. Increasing awareness of the uneconomical use of time involved in home visits compared to the time spent on surgery attendances made a transport service seem more desirable.

A few doctors had already started car services of their own. In October 1965 Seddon and Smith provided transport in their Lancashire practice 'to bring patients to the surgery, instead of visiting them at home'. This was operated principally for their elderly patients.^{30, 32} Three months later, in an urban Surrey practice Floyd and his partners introduced a car service for their patients, to cope with an increased patient load due to the retirement of a senior partner.^{14, 15, 16} The reasons for introducing a transport service were different in each of these practices but the aim was the same—to increase the doctors' efficiency by reducing the amount of time spent travelling and visiting patients at home.

These doctors were enthusiastic about the results and reported that their time was saved. They stressed that patients could be examined more thoroughly and easily at the surgery than at home. They also reported that the service was helpful in changing patients' attitudes about attending surgery and it had a therapeutic effect on some elderly patients. Another advantage was that the doctors were more available for emergencies than before. Could such advantages be achieved more generally, what would it cost and what were the possible disadvantages? How would patients react to such a scheme? These were the concerns of this study.

The Study

The main part of the study was essentially an experiment in four general practices and covered a period of 18 months. Two six-month periods were compared: one before and one after the introduction of the transport service. They were separated by a

six-month 'settling-in' period when the new service was started in the four practices. Thus the two study periods covered the same months of the year.*

In attempting to study the effect of the transport service four problems were encountered. First, a general decline in visiting rates made it inappropriate to attribute any differences found in the experimental practices to the introduction of the service. This made it difficult to estimate the effect of the service on either the numbers of home visits or the saving in doctors' time. Secondly, there was the problem of its impact on the doctor-patient relationship. Home visiting has advantages and its reduction may affect patients' attitudes, the conditions they consult their doctor about and the doctors' awareness of home situations. Thirdly, the full effect of the service might only be seen in the long term and its use six months to a year after its introduction might not indicate its full potential. Fourthly, the wide differences between practices in patterns of work, organization, facilities and geographical distribution of patients made it difficult to generalize from one practice to another.²³ These four problems and the way they were dealt with in this study are discussed in more detail next.

Changes in visiting patterns. There have been many reports of a decline in home visiting rates in recent years.^{1, 2, 7, 18, 26, 33, 36, 37} The majority of the reports supported by adequate data suggested that the reductions in home visits are associated with change and reorganization within the practices. For example, Stevenson³⁶ attributes the changes in consulting patterns in his practice to recruitment of new medical, ancillary and administrative staff, to new premises and to the extension of surgery hours. Fry¹⁸ reported that better organization, increased co-operation from patients and increased delegation to other practice staff reduced his home visits.

A transport service may reduce home visits both directly and indirectly; directly by bringing to the surgery people who would otherwise be visited at home, indirectly by the related changes in organization and staffing. But the number of visits may also be affected by other trends. For example, crises may now occur less often at home due to 'the development of techniques which permit successful intervention in the course of illness'.³¹

In order to estimate how far the changes occurring in the experimental practices were due to the transport service and its associated changes four practices with no transport services were also studied. For convenience these practices are referred to as the control practices.

The impact of the service on the doctor-patient relationship. In this country visiting rates are high compared with those found in North America but here the traditional pattern of home visiting is valued by doctors and patients alike. Patients appreciate their doctor's readiness to visit—particularly mothers with young children⁹ and patients living in areas where public transport services are poor. Many doctors enjoy visiting and believe knowledge of the home environment may be essential in deciding what is the appropriate course of action for a patient. Patients might regard the service as either an improvement in practice organization or as a poor substitute to home visiting. In either case a change in attitude may occur which in turn could affect the doctor-patient relationship.

To try and assess the effect of the service on the doctor-patient relationship patients were interviewed about their contacts with their doctor and their views on home visiting, on the transport service as an alternative to some visits and on other aspects of general practice. Since the elderly have more contact with the doctor for chronic sickness these patients were given an extended interview aimed at highlighting other advantages and disadvantages of a transport service.

*A detailed timetable is given later, in table II, p. 6.

The time scale of the study. At the end of the 18 months of the main part of the study the new services had only been in use for a maximum of 12 months. It might be that the build up in use and the effect of the service was not fully realized in such a short period. Therefore some data were collected for another year after the main study ended. In addition at the start of the study another practice, which had been running its own transport service for two years, was included for comparison. This practice is referred to here as the experienced practice.

Differences between practices. In order to overcome some of the difficulty in generalizing findings in one general practice to other practices four quite varied practices were chosen for the experiment. They were selected on the basis of each having different characteristics which might affect the successful operation of a transport service. One practice was urban with three branch surgeries. One was a new health centre in an industrial valley and another a single-handed practice in the same area. The fourth was a widespread rural practice. All the practices which participated in the study are described next.

The practices in the study

The experienced practice and three of the experimental practices were selected by the Department of Health and Social Security. The fourth experimental practice was chosen by the Scottish Home and Health Department. The four practices asked to act as controls were not deliberately matched to the experimental practices. Selection had to be limited to practices which kept records and where the staff were prepared to help in the study. All the practices ran appointment systems.

*Experienced practice A** was in the Greater London urban area with the patients living mainly within a radius of about two miles. At the start of the study 9,200 patients were registered with the practice. Many of the elderly patients lived in one district. During the first year of the study the number of patients who joined the practice (including births) was roughly equal to the number who left or died: that is 9 per cent of the total number registered at the start of the study. The three partners worked from a large Victorian house. A health visitor was attached to the practice and so was a district nurse who went in every day. Other ancillary staff were a midwife, a bathing assistant, two receptionists and a practice secretary. The doctors consulted in the mornings and most evenings. Some of the afternoons were taken up with a regular visit to an old people's home, and with clinics for antenatal examinations, well-baby advice, treatment of varicose veins, and occasionally cytology. The practice had been running its own transport service using a car for over two years before the study started. The car was replaced by a minibus in April 1968, a month before the data collection started for the study. In June 1968 a radiotelephone was installed with receivers in the minibus and in one of the doctors' cars. The bus seated up to 15 people with a rear access door. There was a high step which, even with a box, was awkward for the less agile patient to negotiate. Additional staff appointed for the study were a driver for the minibus and an assistant to help with recording.

Experimental practice B was also in the Greater London urban area but the patients were a little more spread out than in practice A. They numbered 14,800 at the start of the study. During the first year 3 per cent of patients left or died—a proportion nearly equal to the proportion who joined (4 per cent). The four partners worked from three branch surgeries situated about a mile from each other. Over the time of the study there were also usually three part-time assistants or trainees attached to the practice. There was a practice nurse who worked at the central surgery which also housed two receptionists. The other two branch surgeries had one or two receptionists. Consulting

*Details of the practices are summarized in table I. Appendix 1 gives the age and sex structure of the practices and the numbers of patients who left and joined.

TABLE I
SUMMARY OF PRACTICE DETAILS AT THE START OF THE STUDY

<i>Practice details</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
Geography	Greater London, urban, radius of about two miles	Greater London, urban, radius four miles.	Monmouthshire, industrial valley with rural fringe, about ten mile radius.	In same valley as C, but less widespread.	Small, Ross-shire country town, rural, radius twenty miles.
Number of patients	9,178	14,779	14,661	2,846	10,547
Proportion of patients still registered one year later*	91%	96%†	96%	95%	95%
Number of doctors	Three	Four and up to three part-time assistants and trainees.	Six (Five for a brief period.)	One and a trainee for about half of the study.	Six
Ancillary staff (excluding staff appointed for study)	Attached health visitor, district nurse, midwife, bathing assistant, two receptionists, secretary.	Nurse, five receptionists.	Two nurses, four to five administrative assistants.	Part-time receptionist.	Five administrative assistants.
Practice premises	Victorian house, two consulting rooms.	Three branch surgeries—none purpose built.	New health centre with four consulting suites.	Converted out-building next to home. Two consulting rooms.	Purpose built but very cramped premises. Two consulting rooms.
Regular clinics	Antenatal, well-baby, varicose veins.	Antenatal, well-baby.	Antenatal, well-baby.	Antenatal.	None.

*This excludes all patients who left or died, and all who joined or were born during the year.

†This figure may be an overestimate. Possible sources of error are discussed in Appendix 2.

hours were again divided into morning and late afternoon sessions with well-baby and antenatal clinics in the afternoon. The minibus was introduced into the practice in November 1968 and had a radiotelephone receiver installed in January 1969, which was linked with the central surgery only. This equipment was removed about nine months later. The bus, seating up to 14 passengers, was entered by double doors at the back. It had an extended roof to enable passengers to stand upright, but very low seats. This was the only practice to appoint a woman to drive the minibus. An assistant was also appointed to keep records for the study and to take incoming telephone calls from patients requesting visits.*

Experimental practice C was run from a purpose built health centre in a Welsh industrial valley. The patients lived up to 12 miles up the valley and three or four miles down and the majority lived within a ten-mile radius. There were 14,700 patients registered when the study started. Here the number of patients recorded as joining during the first year was less (3 per cent) than the number who left (4 per cent). The six doctors were assisted by two practice nurses and four or five administrative assistants. Consulting sessions were in progress all day with well-baby and antenatal clinics during the afternoons. The minibus was introduced in November 1968 and seated 12 people. There were side and rear access doors; the step was high and the seats rather close together. A driver and two assistants were appointed for the study. Both assistants helped with other practice work and one was almost entirely responsible for the early organization of the service.

Study practice D was run single-handed, with surgery premises two miles away from practice C with which evening and weekend duties were shared. Practice D covered roughly the same area as practice C but was more concentrated, its patients living mainly in an area two miles up and four miles down the valley. A relatively high proportion (18 per cent) of the 2,800 patients were over 65 when the study started. During the first year of the study 4 per cent of the patients left or died and 3 per cent joined. The practitioner worked from a building beside his own home and consulted in the mornings and evenings, with the early part of one morning reserved for his antenatal patients. He had a part-time receptionist who also helped in the study-data collection, and, for about half of the study, he had a trainee working with him. The vehicle in this practice was a long wheelbase Landrover with seats for 10 to 12 people and several access doors. This was chosen for its suitability for mountain roads, farm lanes and snowy weather. On occasions it was used by the neighbouring experimental practice to collect patients from inaccessible homes. Part-time staff were appointed: an assistant to keep the records for the study and a driver for the Landrover.

Experimental practice E was situated in a small town in Ross-shire, Scotland, with most patients living within a radius of 20 miles but with some patients even further away. At the start 10,500 patients were registered. Four per cent left during the first year and 5 per cent joined. Six partners worked from cramped premises with the two consulting rooms in almost continuous use. The only other regular staff were five administrative assistants. The number and proportion of home visits were high and the area was zoned geographically by the practice to cope with the mileage involved in routine and repeat visits. Radiotelephone equipment was installed in November 1968 with receivers in all the doctors' cars. The minibus was not delivered to the practice until March 1969—three and a half months late. The bus was also equipped with radiotelephone. There were side doors for the front seats and rear access doors with seating for up to 15. A driver for the minibus was appointed and so was another administrative assistant to help with the study and other practice work. The practice staff shared the work of keeping the study records between them.

*This practice experienced several staff changes during the study and some of the data was felt to be of doubtful validity—see Appendix 2.

Control practice F was a Yorkshire urban practice with a rural fringe covering an area of about 15 square miles—roughly the same size of area as in practices A and B. Three partners worked from central surgery premises and employed a practice nurse. When the study started 8,800 patients were registered with the practice.

Control practice G was an urban central city practice in the west of England. Two partners worked from surgery premises in a Victorian house. There was no practice nurse at the time of the study, but a district nurse was attached to the practice. The 4,000 patients were spread over a mile to a mile and a half radius.

Control practice H was a single-handed practice in a west country town with a large retired population. There were 2,500 patients, 34 per cent over 65 years. The practice had a two to three mile radius. There was a nursing sister in the practice.

Control practice J was also an urban practice situated in Kent. There were two partners but only one recorded data for the study. This practitioner had 2,500 to 3,000 patients, and a practice similar in area to practices A and B.

Data collected before the transport service was introduced showed that the ratio of home visits to surgery attendances was rather less than one in five in four of the study practices (A, B, C and D, *see table XV*); but in practice E home visits made up over half of all consultations. This is not unusual for a Scottish practice.^{35, 41, 42, 43} Practice E

TABLE II
TIMETABLE AND SUMMARY OF DATA

<i>Period I. Pre-transport period: mid-May 1968 to mid-November 1969</i>	
20th May	Full recording of all requests for visits, visits and surgeries started in all practices.
August–November	Interviews with elderly patients.
October–November	Interviews with mothers of young children.
June	Radiotelephone installed in practice A. This practice had been using its <i>minibus</i> since April.
11th–18th November	The first doctors' <i>diary</i> week.
<i>Period II. Settling-in period: mid-November 1968 to mid-May 1969</i>	
Mid-November	Transport started in practices B, C and D and installation of radiotelephone in doctors' cars in practice E.
January	Radiotelephone installed in practice B.
March	Transport started in practice E.
<i>Period III. Post-transport period: mid-May 1969 to mid-November 1969</i>	
June–October	Interviews with elderly patients.
July–November	Interviews with mothers of young children.
July–December	Interviews with patients who had used the service.
10th–17th November	Second doctors' <i>diary</i> week.
16th November	Full recording ended.
<i>Mid-November 1969 to mid-November 1970</i>	
All practices, including the control practices, continued to keep a record of numbers of surgery consultations and home visits. The practices with transport services also kept some details about use of the services.	

therefore had the greatest potential source of patients to use the transport.

The data

Four methods of data collection were adopted in the experienced and experimental practices.* The first was to establish a library card register of all patients in each practice. This was done with the help of the executive councils, for two purposes: it was used during the study to aid recording and it was later used in the age-by-sex analysis of the practices.† Secondly, the practices recorded, throughout the first 18 months of the study, some details about all requests for the doctor to visit, all consultations and each patient using the transport service. The drivers also recorded details about the uses of the minibuses or Landrover. Similar data, but in less detail, were recorded during the following year. Thirdly, the doctors undertook to keep professional diaries for one week before the service started, and again a year later. The doctors recorded the amount of time spent on professional activities. Further details were kept about the time and distances involved in home visits. Fourthly, samples of patients from each practice were interviewed before and after the service started.

Throughout the two and a half years of the study the control practices recorded the number and place of their consultations and one of the control practices kept professional diaries for the two weeks studied in the experimental practices.

Finally, discussions with all the staff of the practices, their comments and my observations have contributed to the interpretation of some of the study's findings—particularly in the final section.

*See table II for a summary of the data.

†See also Appendix 2 for further details of the register, its use and its problems.

II

ORGANIZATION, USE AND COSTS

How does a patients' transport service work? How is it used and what does it cost? The answers to these questions provide the background to the following sections on the effect of the service on the doctors' work and on their patients' views.

Organization

The services varied in the length of time they ran each day. The doctors in practice A ran their service during the mornings only, including Saturday mornings. They had found during their earlier experience with a private car service that these times worked well. Practices B, C and E ran their service all day, Monday to Friday, and on Saturday mornings in B and C. In B there was a gap in the early afternoon when no surgery sessions were held and the minibus driver had time off. In the single-handed practice (D) the bus was available at the surgery on all weekday mornings. The driver was also on standby duty at home whenever the practitioner himself was on rota duty.*

Arranging transport. Transport might be arranged for a patient in three main ways. When a patient, or somebody on his behalf, contacted the surgery (usually by telephone) to ask for a home visit the patient might be offered transport to the surgery as an alternative. This was done at the discretion of the receptionist and the patient did not normally talk to a doctor. Transport might also be arranged with the doctor for the next consultation, at either a home visit or when the patient was at the surgery as either an ambulant patient or as a transport user. A few people escorted patients to the surgery in the minibus and then asked to see the doctor themselves. Occasionally patients telephoned the surgery to ask for transport directly and this might be done either on their own initiative or at their doctor's suggestion.

Table III shows that in all practices transport was most often arranged when the patient (or somebody on his behalf) contacted the surgery.† The proportion was lowest in practice E (a half) and highest in B and C (four-fifths). The second most frequent method was at a previous attendance using transport. Practice E had the highest proportion who arranged the service in this way, over two-fifths, and practices C and B the lowest, a little over a tenth. Transport was rarely recorded as arranged at a surgery consultation when the service had not been used for that attendance. It was also unusual for people to ask directly for transport or to ask to see the doctor when they arrived at the surgery after travelling on the bus with a patient.

Table III suggests that in all practices, except E, the majority of occasions on which transport was used were probably for first rather than repeat consultations. (For the purposes of the study a new consultation was defined as one initiated by the patient and a repeat as initiated by the doctor.) But the doctors in practice C, at any rate, often told patients to ring when they needed to be seen again and this may have increased the proportion of requests for 'new' visits.

Compared with the other practices, E had a high proportion of occasions on which transport was arranged at one surgery attendance for another repeat attendance, just

*In all of these practices the times mentioned are those that the driver was on duty, whether actually ferrying patients or not.

†Appendix 5 describes the statistical procedures adopted.

TABLE III
HOW TRANSPORT WAS ARRANGED
 Period III: mid-May 1969 to mid-November 1969

<i>Details of arrangements</i>	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
	%	%	%	%	%
When patient, relative or friend contacted surgery (includes those who asked to use the service) ..	66	82	84	60	52
When patient attended surgery using transport	29	13	12	24	46
When doctor visited patient ..	4	1	1	11	2
When patient attended surgery but did not use transport	—	3	—	5	—
When escort to another patient (i.e. not directly arranged)* ..	1	1	3	—	—
All surgery attendances where patients used transport (=100%)†	865	650	1,729	370	562

*These figures may be underestimates as the recording staff may not have always realised this had happened.
 †See Appendix 5 for an explanation of the layout of tables.

TABLE IV
AGE DIFFERENCES IN TRANSPORT ARRANGEMENTS
 Period III: mid-May 1969 to mid-November 1969

<i>Age groups</i>	<i>Proportion of transport attendances arranged when home visit was requested</i>				
	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
10 and under	97% (218)	96% (179)	94% (755)	94% (72)	62% (136)
11 - 64 years	73% (337)	85% (277)	79% (692)	58% (157)	54% (293)
65 and over	38% (310)	64% (189)	66% (279)	42% (141)	37% (133)

The figures in brackets are the total number of surgery attendances on which the percentages are based (=100%). The figures exclude patients who saw the doctor after escorting or accompanying another patient to the surgery in the minibus.

a little under a half. The proportions for repeat consultations in the other practices were smaller. In practice D a tenth of the transport attendances were arranged at a home visit but this rarely happened in the other practices. This may be indicative of an understandable reluctance of the practitioners to add any further to their recording load. Arranging transport when in a patient's home requires making a note and remembering to record the details on return to the surgery.

As one would expect there were variations in the way the service was arranged for patients of different ages (table IV). Transport attendances by young patients were more often arranged when requesting a new visit but attendances by the elderly were more often arranged for repeat consultations, a reflection of the usual differences in consulting patterns for these ages. This trend with age was less marked in practice E than in the other four practices.

Use of radiotelephone equipment. Three practices (A, B and E) had a radiotelephone to facilitate the organization of the service. The driver of the minibus could be contacted while he was out and asked to pick up patients who had telephoned the surgery after he had left. The radiotelephone was used most in practice A where it helped in the collection of one-tenth of all the patients carried and over three quarters of all radio contacts were functional in picking up patients. In practice B under half of the radio contacts were used to convey information about patients wanting the service and those that were aided in this way formed only a tiny proportion of all the patients carried.* Quantitative data on radio contacts in practice E were unreliable but the ancillary staff and the driver reported that they found it helpful. Because practice E did many distant visits the radio contact with the doctors' cars was reported as more helpful than the contact with the minibus driver.†

Organization at the surgery. Initially there were no major changes in existing consulting times when the service was introduced and each practice developed its own method of organizing its service around their established times. When transport patients were brought to the surgery they were generally given priority over patients already waiting and were seen straight away. Where waiting patients could see this happening, it was reported that the priority treatment occasionally caused resentment and careful explanation was necessary. Staff in some practices left gaps in the appointment system to absorb at least part of the time taken up by the transport patients. Some patients were given an appointment (particularly for repeat consultations) and collected specifically for that time. This led to difficulties in time keeping and in practice B efficient organization was hampered by the existence of three branch surgeries as patients might request to be taken to any of them.

Some suggestions were made by the receptionists for improvements in organization at the surgery. These included having a doctor available to deal primarily with transport patients and extending certain times of surgery sessions, when no appointments would be made, so that transport patients could be seen during these times. Several receptionists commented on the congestion on the switchboard during the early part of the day which led to some difficulty in explaining about the service to patients or in arranging it for them.

There seemed to be two main problems in organizing the service for the patients and the driver. One was arranging it so that patients were not left waiting too long either at home or at the surgery. The other was arranging work for the driver so that he was neither trying to do an impossible number of calls nor waiting around for long periods

*The radio-telephone equipment was later removed from this practice and installed in practice C. Here the radio became operational after the main recording for the study had ended but reports were enthusiastic about how helpful it was. The extent of its use is mentioned in a later section.

†No data were collected about radio contacts with the doctors' cars.

with nothing to do. The two were sometimes in conflict. The drivers commented that the difficulties and frustrations of their work included waiting to collect people and take them home again, and patients not being ready when called for or refusing to come to the surgery when the bus arrived. Many of these early problems were still unsolved a year and a half after the service started, although they were less extreme in nature. It may well be that these difficulties are an inherent part of the job as driver for a service of this kind.

Use of the minibuses. Records kept by the drivers showed that the minibuses were rarely filled to capacity (table V). In E on almost half of the occasions only one person was carried. For two other services, the number of people usually carried was one or two, on 69 per cent of the occasions in B, and 58 per cent for a service shared by C and D.* But in A three or four people were carried on almost half of the occasions. This better use of the vehicle was probably due to two things. A mornings-only service demanded better organization and the practice had greater experience.

TABLE V
NUMBERS OF PEOPLE CARRIED IN THE BUS

Number of people (patients and escorts) in the bus at each stop at the surgery	Experienced practice	Experimental practices		
	A	B	C and D together	E
	%	%	%	%
1 person	10	30	23	48
2 people	18	39	35	28
3 people	23	18	13	11
4 people	26	10	8	7
5 people	12	2	7	1
6 people	6	—	3	2
7 people	3	1	2	2
8 or more people	2	—	9	1
Total number of journeys to surgery (=100%)	283	264	595	309
<p>These data were collected over February, March, April and the first half of May 1970. By this time practices C and D were sharing a bus. The number of stops at a surgery did not equal the number of round trips in the minibus because in practice B there were three branch surgeries and in C and D one bus called at both surgeries. In each case the bus might make more than one surgery stop on a round trip. People were therefore sometimes counted more than once, once at one surgery stop, and again at the next.</p>				

The proportion of patients† carried, as a percentage of patients and escorts, was between 55 and 75 per cent. Over the year, from November 1968, the proportion in all practices fluctuated within this range. Practices A and E carried the highest proportion of patients and C the lowest over the year. This meant that at least a quarter of all the people carried were escorts to patients. Obviously the vehicle has to be large enough to take these people too but it seems that a minibus seating 12 or more people was too large. The driver in practice E commented on its unsuitability for narrow country tracks, where turning was sometimes impossible with so large a vehicle.

*Data collected in practice D before the bus was shared with practice C, that is before December 1969, showed that one or two people were usually carried at a time.

†The numbers of people recorded by the drivers as patients did not always tally with the numbers recorded as transported patients by the practices. See Appendix 2.

Development and use of the service

It was expected that the service would take a while to become established and that there would be a gradual build up in the proportions of patients using it. The development and use of the service is considered from two aspects for the year from November 1968.* The first deals with the proportions who were offered and who accepted transport to the surgery in place of a home visit. Then the actual numbers and proportions who used the service are discussed within the context of other consultations.

Offering and accepting transport. Since the majority of transport consultations were for new rather than repeat consultations the discussion here is about offering the service to those patients requesting new visits. If few patients are offered the service and others do not request it then the service will be little used. Table VI shows the proportion of all requests for visits where the patients were offered transport to the surgery as an alternative. Practices A, C and D generally offered transport to at least half of the patients requesting visits. The proportion in practice B started off at around one third of all requests but by the second half of the first year about a half were being offered transport. Practice E started by offering transport to about one in 16 of those requesting visits and the proportion then rose to about a tenth in the second six months of the service.

Just offering the service is not necessarily enough and patients need to be persuaded to take up the offer. The proportions of all patients requesting visits who were offered and who accepted transport (instead of a new visit) increased over the two six-month periods in four practices: in practice B from 19 per cent to 30 per cent; in C from 25 per cent to 35 per cent; in D from 40 per cent to 49 per cent and in E from 6 per cent to 8 per cent (table VI). The proportions who accepted transport in practice A remained fairly steady at 28 per cent. So the proportions using transport instead of a new visit varied from a tenth (in E) to a half (in D).

TABLE VI
OFFERING AND ACCEPTING TRANSPORT FOR NEW VISITS
Period II: mid-November 1968 to mid-May 1969.
Period III: mid-May 1969 to mid-November 1969

Transport details	Experienced		Experimental practices							
	A		B		C		D		E	
	II	III	II	III	II	III	II	III	II*	III
Offered and accepted	%	%	%	%	%	%	%	%	%	%
Offered but refused .. (doctor to visit)	29	27	19	30	25	35	40	49	6	8
Not offered	35	30	13	15	26	20	16	10	—	1
Patient asked for transport	33	37	65	49	45	42	37	37	94	91
Other arrangements ..	1	5	3	6	1	1	—	—	—	—
	2	1	—	—	3	2	7	4	—	—
Number of requests for new visits (= 100%) ..	2,248	1,762	2,806	2,185	6,250	4,183	587	419	2,062	3,069

*2½ months only.

Looking at the proportions of those who were offered transport and accepted it, this was highest in practice E where nearly all the patients who were offered transport

*This was the fourth year of operating a transport service in practice A, the first in practices B, C and D, and the first eight and a half months for practice E.

accepted it during the first seven to eight months of its operation. In practice D half of the patients offered transport in the first six months accepted it and this proportion rose to well over two thirds in the second six months. In B over half of those offered it accepted it in the first half of the year and this rose to two thirds in the second half. In C the proportions rose from a half to three fifths but in the experienced practice, A, under a half of those offered transport accepted it.

These data suggest that there was a gradual build up in the service in three of the practices (B, C and D) in terms of the proportions who were offered and who accepted the service for new consultations.

The numbers and proportions who used the service. The service developed quickly in terms of the numbers carried and when they are seen as proportions of all consultations they formed a fairly steady proportion within each practice throughout the year. In practices C and D 6 to 7 per cent of all consultations were surgery attendances for which transport was used, 5 per cent in practice A and 2 to 3 per cent in practices B and E (table VII). These figures showed no increase over time in the use of the service in practices A, B, C and D. When transport consultations were taken as a proportion of all visits plus the visits that had been 'converted' to surgery attendances by using the service, an increase in the use of the service showed up in all practices, including practice A (table VII).

Comparing the two part-time services (practices A and D) it was surprising that A, with three years experience, was running its service at a level considerably below that in practice D. However, the level of use in practice A was higher than the use of the full-time service in practice B. Of the full-time services (B, C and E) transport was used most in practice C. In E—despite the greater potential source of users in the practice—the level of use of the service was far below that in any other practice. These differences are discussed at the end of this section.

Who used the service, and for what?

The service was used more by the very young and the older patients. This was expected. Table VIII shows that in all the practices the transport consultation rates were markedly higher among the children and the elderly than among those in the middle age group. The same was true for home visits in four of the five practices. Practice E had the lowest transport consultation rate for children and one of the lowest rates for the other age groups. The earlier data on the level of use in this practice now make this finding an unsurprising one, even though the visiting rates were so high.

Women used the transport service more than men. Again this was expected as women consult more than men anyway.^{3,5} Taking all practices together the transport consultation rate over a six-month period for a female aged 11 years or over was 0.08, for a male 0.05.

Reasons for consultation. Having seen who used the transport the next question is what did they consult about? The answer to this is not the same as the answer to why these patients used the transport. The distinction is an important one. An arthritic elderly patient may use the service because he cannot walk easily but he may be consulting about a respiratory infection. The interviews with patients who had used the service threw some light on why they had done so. These are discussed in the section on the patients' reactions. Here the diagnoses recorded by the doctor at transport consultations are discussed.

Table IX shows that diseases and symptoms of the respiratory system and of the circulatory system were the commonest diagnoses made: together these diseases and symptoms made up a third or more. The table also shows some variations between the practices.

TABLE VII
THE PROPORTION OF TRANSPORT ATTENDANCES
 Period II: mid-November 1968 to mid-May 1969
 Period III: mid-May 1969 to mid-November 1969

<i>Consultations where transport was used to reach surgery as proportion of:</i>	<i>Experienced practice</i>		<i>Experimental practices</i>							
	<i>A</i>		<i>B</i>		<i>C</i>		<i>D</i>		<i>E</i>	
	<i>II</i>	<i>III</i>	<i>II</i>	<i>III</i>	<i>II</i>	<i>III</i>	<i>II</i>	<i>III</i>	<i>II†</i>	
All consultations	5% (18,068)	5% (16,659)	3% (20,991)	3% (19,407)	6% (29,431)	7% (26,737)	7% (6,719)	6% (6,304)	2% (10,620)	3% (18,363)
All home visits and all converted visits*	21% (4,461)	25% (3,457)	16% (3,661)	28% (2,340)	27% (6,982)	37% (4,736)	44% (1,061)	50% (731)	3% (6,698)	6% (9,905)

Figures in brackets are the numbers on which the percentages are based (= 100%).
 *That is all visits including those converted to surgery attendances by using transport.
 †2½ months only.

TABLE VIII
AGE VARIATIONS FOR DIFFERENT TYPES OF CONSULTATION
Period III: mid-May 1969 to mid-November 1969

	<i>Six monthly consultation rates per 1000 patients</i>				
	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
<i>Surgery attendances where transport was used</i>					
10 and under ..	146	84	284	180	74
11 - 64 years ..	51	27	69	79	39
65 years and over ..	263	88	162	283	103
All	94	44	120	129	53
<i>All surgery attendances*</i>					
10 years and under ..	1,143	1,371	1,606	2,280	678
11 - 64 years ..	1,643	1,205	1,752	1,956	913
65 years and over ..	1,338	1,039	1,095	2,353	763
All	1,523	1,190	1,646	2,070	381
<i>Home visits</i>					
10 years and under ..	145	138	262	65	759
11 - 64 years ..	119	77	130	71	534
65 years and over ..	1,348†	272	572	392	3,071
All	280	114	208	125	884
<i>Number of patients registered</i>					
10 years and under ..	1,498	2,153	2,654	400	1,845
11 - 64 years ..	6,558	10,499	10,027	1,973	7,423
65 years and over ..	1,179	2,224	1,766	498	1,300
All	9,235	14,876	14,447	2,871	10,568
*Includes clinic attendances and all attendances using transport.					
†This high rate is largely attributable to weekly visits to an old people's home.					

Generally the reasons given for transport consultations show similar distribution to those found by other researchers. Earlier, Floyd¹⁶ found a similar pattern of morbidity amongst his patients using transport. A third consulted about respiratory diseases and symptoms and a tenth about each of three groups—abdominal conditions, cardiovascular disease and infectious disease. Fry¹⁷ and Williams³⁸ found similar patterns of morbidity for all consultations (that is including home visits as well). The sample of consultations for patients using transport is affected by age, sex, time of year and place of consultation and comparable data from other studies are not easy to find. These variables are controlled to a limited extent by considering morbidity for the younger and older patients in greater detail.

The majority of the ten-year-olds and under using the transport service, consulted the doctor mainly for infective, parasitic and respiratory conditions in four of the practices; but in the fifth practice (E) only a fifth consulted him about these conditions (table X). The majority of the consultations in this rural practice were in a group

TABLE IX
REASONS FOR CONSULTATION BY PATIENTS USING THE TRANSPORT SERVICE
Period III: mid-May 1969 to mid-November 1969

<i>Diseases and symptoms recorded by doctor</i>	<i>International Classification of Diseases number*</i>	<i>Experienced</i>	<i>Experimental practices</i>				
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	
		%	%	%	%	%	
Infective and parasitic	000-136	11	8	11	7	3	
Neoplasms	140-239	1	2	—	4	2	
Endocrine, metabolic, nutritional.. ..	240-279	2	1	2	2	3	
Blood, blood forming organs	280-289	4	1	3	2	2	
Mental disorders	290-315, 790	4	3	3	7	2	
Nervous system and sense organs	320-389, 780-781	6	5	10	4	6	
Circulatory system	390-458, 782	10	16	9	15	17	
Respiratory system	460-519, 783	26	33	33	24	9	
Digestive system	520-577, 784, 785	7	3	5	6	3	
Genito-urinary system	580-629, 786	3	3	2	2	4	
Deliveries and complications of childbirth	630-678	1	1	—	1	—	
Skin and subcutaneous tissue	680-709, 788.2, 788.3	2	6	5	—	3	
Musculoskeletal system and connective tissue	710-738, 787	10	6	3	10	6	
Symptoms and ill-defined conditions ..	780-796	5	3	1	2	3	
Accidents, poisoning and violence	N800-N999	5	7	9	9	16	
Examinations, investigations, preventive measures, advice (personal, social, contraceptive), no condition specified	Y00-Y89	3	2	4	5	21	
All consultations (=100%)		864	649	1,600	364	563	

*Based on the recommendations of the eighth revision conference 1965. ²⁵

which included accidents, preventive medicine, examination and advice.* It may be that in practice E the transport service was used more for routine vaccinations and inoculations than the other practices because of the poor public transport facilities in the area. Fry found that 'infections of some form accounted for more than half of the

TABLE X
REASONS FOR CONSULTATIONS BY PATIENTS AGED TEN YEARS AND UNDER USING THE TRANSPORT SERVICE
Period III: mid-May 1969 to mid-November 1969

<i>Diseases and symptoms recorded by doctor</i>	<i>Experienced practice</i>	<i>Experimental practices</i>				
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	
	%	%	%	%	%	
Infective and parasitic	28	17	18	21	4	
Nervous system and sense organs	4	3	10	7	7	
Respiratory system	41	64	46	56	15	
Digestive system	9	2	4	5	3	
Other.. .. .	18	14	22	11	71	
All consultations (=100%)	218	179	757	72	136	

*It also included neoplasms, blood diseases and mental disorders. The proportions were small in each case.

total morbidity in childhood* and that the respiratory tract, the skin and the gastrointestinal tract were the main sites, in that order'.¹⁷ These findings appear to fit in well with those for practices A, B, C and D on this study.

Transport consultations by patients aged 65 and over were most often about circulatory and respiratory complaints (table XI). But generally the reasons for the consultation by people in this age group are more widespread than for younger patients. The findings were compared with Fry's data on morbidity for all consultations of his patients aged 60 years and over. The morbidity patterns for the elderly that emerge from the two sets of data are similar with an emphasis on the diseases associated with the degenerative process.

TABLE XI
REASONS FOR CONSULTATION BY PATIENTS AGED 65 YEARS AND OVER USING THE
TRANSPORT SERVICE
Period III: mid-May 1969 to mid-November 1969

<i>Diseases and symptoms recorded by doctor</i>	<i>Experienced practice</i>	<i>Experimental practices</i>				
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	
	%	%	%	%	%	
Infective and parasitic	3	4	3	1	—	
Endocrine, metabolic, nutritional ..	2	3	6	5	5	
Nervous system and sense organs ..	8	3	8	4	8	
Circulatory system	21	39	28	24	32	
Respiratory system	11	13	10	18	7	
Digestive system	4	1	5	3	2	
Genito-urinary system	2	2	1	2	—	
Skin and subcutaneous tissue ..	1	5	2	2	—	
Musculoskeletal and connective tissue	17	12	8	6	10	
Ill-defined conditions and senility ..	13	7	—	1	10	
Other—includes accidents, neo- plasms, blood diseases, mental disorders, preventive and social medicine	18	11	29	34	26	
All consultations (=100%) ..	310	194	282	141	135	

Within their age groups it looks as if the reasons for consultation by patients using transport do not differ greatly from the morbidity of other patients when considering all contacts with their general practitioners. However, this study does not examine the severity of the complaints about which patients consult when using transport. Transported patients may differ from other patients in that they are a more physically or socially disabled group and they may suffer from more chronic conditions. Although we were unable to collect data designed specifically to throw light on these conjectures the interviews with elderly patients suggest that the older patients who used the service may be more physically and socially disabled. Those patients aged 65 and over who had used the service did not go out as often as patients in the same age group who had not used the service, nor did they have as many visitors.†

*This included all consultations for children up to the age of 15 years.

†Thirty per cent of the patients aged 65 and over who had used the service said that they went out at least daily—65 per cent of those who had not used the service said they went out as often. Sixty-one per cent of the elderly patients who had used the service had had two or more visitors, 77 per cent of those with no experience of the service had had two or more visitors.

Costs

As guidance to others the costs involved in setting up and running a patients' transport service are outlined. Costs incurred directly for research purposes are omitted but some of the research commitments may have made some costs higher than they would have been otherwise.

The Department of Health and the Scottish Home and Health Department financed the services in full for the first year. During the second year half the running costs were reimbursed and, if the practices continued some recording for a third year, the Department of Health and Social Security offered the vehicles to the practices free of charge. The Scottish Home and Health Department continued to meet the full costs of the Scottish practice after the first year of the study. None of the costs were met by patients.

The largest portion of the capital outlay was for the vehicle itself (table XII). Some structural alterations were necessary in three of the practices. These were to

TABLE XII
Costs
Periods II and III: mid-November 1968 to mid-November 1969

	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A*</i>	<i>B</i>	<i>C</i>	<i>D*</i>	<i>E</i>
<i>Capital expenditure</i>	£	£	£	£	£
Vehicle	921	790	915	1,057	887
Radio-telephone equipment	430	352	—	—	450
Structural alterations	125	14	40	—	—
Furniture and equipment	20	85	161	68	125
Total	1,496	1,241	1,116	1,125	1,462
<i>Running costs for year mid-November 1968 to mid-November 1969</i>	£	£	£	£	£
Driver's wages and national insurance	483	1,166	880	574	1,250†
Tax and insurance	47	79	46	42	75
Petrol	100	118	238	109	} 346†
Repairs, maintenance, garaging	20	60	—	—	
Incidentals	16	113	125	29	86
Total‡	666	1,536	1,289	754	1,757†
Average cost per patient carried ..	£0.36	£1.25	£0.35	£0.90	£1.65
<p>*Normally service operated in the mornings only. †These costs were only available for the period from March 1969 to December 1969 and the cost for one year has been estimated from the available cost to make the figures comparable. ‡Excludes secretarial and clerical help as it was impossible to separate costs for the research from costs which would have occurred anyway.</p>					

accommodate staff, patients and equipment and these varied greatly from practice to practice. Some allowance in capital expenditure should be made for office furniture and equipment if existing staff cannot incorporate the organization of the transport service into their current duties. The average capital outlay was about £1,000 excluding costs for radio equipment, which although not an essential part of a transport service, might be considered desirable by some practices starting their own service. Running

costs included the drivers' wages and national insurance; petrol; road tax; and the vehicles' insurance, repairs, maintenance and garaging. These varied between £700 per annum for a part-time service and £1,600 for a full-time service. The cost per patient carried varied between £0.35 (in C) and £1.65 (in E). Some implications of these costs are discussed later.

Finally, further allowance needs to be made for additional secretarial help. Even if organization of the service can be done by the staff already working in the office they are likely to have to work longer hours.

Conclusions

The service was soon established in the practices and in terms of the numbers carried it developed quickly to a steadily maintained level. Transport attendances formed a slowly increasing proportion of all potential visits. This might have been due to seasonal variations. More probably it indicated a decline in the potential visits. This is discussed in the next section.

There were wide variations between the practices in the amount the service was used. Of all the practices D made relatively the most extensive use of the service even though it was normally operational in the mornings only. The small list size of the practice meant the actual numbers carried were few compared to the other practices. In the same area the doctors in practice C also used the service extensively and the most economically. When the study started this practice was running consulting sessions all day and this enabled transport patients to be seen at any time during the day. In both of these practices the success of the service was due mainly to two things: (1) enthusiasm about, or commitment to, the idea by the practice staff of giving the service a try which meant the doctors were prepared to spend longer hours in the consulting room; (2) the geographical layout of the practices—mainly up and down a valley.

The use of the service was less in practice B. The partners were divided in their views on the transport service and this attitude spilled over to the ancillary staff. Several changes of minibus drivers and transport secretaries also broke the continuity of presentation of the service to patients. The three branch surgeries hindered the efficient organization of the transport.

The limited use of the service in practice E seemed to be due to two main factors. First, both the patients and the doctors accepted, and liked, traditional home visiting. Secondly, there would have been no space for transported patients to wait had large numbers been brought to the surgery at any one time.* The geography of the practice was a likely third factor affecting the use of the service. This is discussed in more detail later.

Although practice A had been running a patients' transport service for longer than the other practices, it did not stand out as making a greater use of the service. This was probably because in this practice the service was run in the mornings only and further development would require running the service for longer each day. Two of the practitioners in the practice mentioned that they felt that this would have been helpful but did not justify the extra costs.

Doctors in all the practices expressed anxieties about the cost of setting up and running a patients' transport service. Although little can be done about reducing the running costs it seems that a saving might be made by having a smaller vehicle. The full seating capacity of the minibuses was rarely used. Do the costs involved justify the use of the service? What effect did the service have on the doctors' work loads? The next two sections discuss this in order to examine whether any time was saved by the doctors.

*At the end of April 1970 this practice started to use a fitted prefabricated building as a third consulting room. This was wired and plumbed up to the existing premises. The effect of this on the use of the transport is discussed in the final section.

III

EFFECT ON NUMBERS AND PLACE OF CONSULTATION

This section and the next look at the doctors' work before and after the introduction of the transport service and data from the control practices are included for comparison. The discussions concentrate on visiting patterns as the new service is most likely to affect this part of the doctors' work. The effect of the service on numbers and place of consultations are described first.

All consultations

It is important to see any changes in the work load of the practitioners in relation to their complete patterns of work. Table XIII shows the consultation rates for the experimental and control practices over the six-month period before the introduction of the service. The total consultation rate (for a six-month period) for the experimental practices varied from 1.31 consultations per patient (in B) to 2.14 per patient (in D); in the control practices the total consultation rates were between 1.62 and 2.40 per patient. The potential use of a transport service in a general practice depends upon the amount of visiting unless the service is used for another specialized purpose. Rates for home visits in the experimental practices were lowest, 0.17 per patient, in practice B but highest, as we have already seen, in E (1.13 per patient). In the control practices home visiting varied from 0.17 to 0.45 visits per patient.

TABLE XIII
CONSULTATION RATES BEFORE THE SERVICE STARTED
Period I: mid-May 1968 to mid-November 1968

	<i>Six monthly consultation rates per 1,000 patients</i>									
	<i>Experienced practice</i>	<i>Experimental practices</i>					<i>Control practices</i>			
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>J</i>
Home visits* ..	324	170	311	314	1,127	452	449	290	172	
Surgery attendances†	1,431	1,149	1,458	1,889	876	1,174	1,951	1,317	1,904	
All consultations ..	1,761	1,319	1,769	2,143	2,004	1,626	2,400	1,606	2,076	
Number of patients registered ..	9,178	14,779	14,661	2,846	10,547	8,800	4,000	2,500	2,750	
*Includes routine visits to institutions. †Includes attendances at clinic sessions.										

Three relevant points emerge from this comparison before the service started:

1. Three of the four experimental practices did not differ greatly from the control practices in the total consultation rates. In the fourth, B, the rates were lower than in the other practices.
2. Practice E had an exceptionally high visiting rate and therefore had the greatest

potential use for the service. Practice B had the least potential use in terms of the visiting rates.

- Practice A did not stand out as having a low visiting rate despite the fact that it had been running a service for some time.

Table XIV shows the changes in the consultation rates after the service started. Comparison of data collected over periods I and III* showed that in all practices visiting rates dropped. The drop was the greatest in the experimental practices with new transport services; the visiting rate went down by at least a fifth (in practice E) and by as much as three fifths (in practice D). In the experienced practice the reduction in the visiting rate was less than in the experimental practices. The largest drop in the control practices in the rate of home visits was a fifth—comparable with the smallest drop in the experimental practices. This meant that in the practices with new services the drop varied between 0·06 visits per patient (in B) and 0·19 visits (in D), for a six-month period, whereas in practice A the drop was 0·04 and in the control practices the maximum fall was 0·06 visits per patient.

TABLE XIV
CHANGES IN THE CONSULTATION RATES AFTER THE SERVICE STARTED
Comparing period III (mid-May 1969 to mid-November 1969) with period I
(mid-May 1968 to mid-November 1968)

	<i>Experienced practice</i>	<i>Experimental practices</i>				<i>Control practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>	<i>J</i>
Home visits	87%	66%	67%	40%	78%	90%	92%	79%	84%
Surgery attendances	106%	103%	113%	110%	97%	102%	108%	97%	108%
All consultations	102%	98%	105%	102%	87%	99%	105%	94%	106%
The bases for these percentages are the consultation rates shown in table XIII									

In all practices (both experimental and control) the consultation rates for surgery attendances remained almost level or went up—by as much as a tenth in the two South Wales practices (C and D). Differences in the total consultation rates between the two periods were generally small, falling by 13 per cent in practice E and changing by not more than 6 per cent in the other experimental and control practices.

Regardless of whether the actual numbers of all items of service increased or decreased the proportion of surgery attendances went up and home visits went down. The changes in these proportions were significant in every practice but the differences were greater for three of the experimental practices with new services (B, C and D, table XV).

In an attempt to understand these differences, surgery attendances, requests for home visits and home visits are examined in great detail.

Surgery attendances

It might be expected that, with efficient use of a transport service (for example for repeat visits) surgery attendances could be more equally spread over each day of the week. That is, by encouraging and organizing transport users to come later in the week the Monday load might be eased. Similarly the distribution of attendances over morning

*Period I: mid-May 1968 to mid-November 1968—the pre-transport period in practices B, C, D and E. Period III covered the same six months one year later—the post-transport period in practices B, C, D and E.

TABLE XV
 PLACE OF CONSULTATION BEFORE AND AFTER THE TRANSPORT STARTED
 Period I: mid-May 1968 to mid-November 1968 (before transport started)
 Period III: mid-May 1969 to mid-November 1969 (after transport started)

	<i>Experienced practice</i>						<i>Experimental practices</i>					
	<i>A</i>		<i>B</i>		<i>C</i>		<i>D</i>		<i>E</i>			
	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>		
Visits	18	16	13	9	18	11	15	6	56	51		
Surgery attendances	82	84	87	91	82	89	85	94	44	49		
All consultations (=100%)	16,120	16,659	19,500	19,407	25,936	26,737	6,271	6,304	21,136	18,363		
	<i>Control practices</i>											
	<i>F</i>		<i>G</i>		<i>H</i>		<i>J</i>					
	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>				
Visits	28	25	19	17	18	15	8	7				
Surgery attendances	72	75	81	83	82	85	92	93				
All consultations (=100%)	14,313	14,102	9,602	10,069	4,016	3,769	5,708	6,030				

and evening surgery sessions might change if more patients using transport were brought into quieter mid-afternoon sessions. In fact the proportion of surgery attendances for which transport was used was small and there was no evidence that it affected the distribution of attendances over times of the day or days of the week.*

Requests from patients for the doctor to visit

Before the service started these requests resulted in a visit by the doctor but after the service was introduced they could lead to a surgery attendance using transport. Early on, the doctors feared that the service would be abused by some patients. If this had happened it might be reflected in an increase in the rate of requests for home visits. In fact the number of requests per patient did not change much after the introduction of the service. In practice A the average number of requests per patient (over six months) went up from 0·18 to 0·19,† in C from 0·27 to 0·29 and in D the average went down from 0·17 to 0·14. These figures do not indicate widespread abuse of the service.

If patients were keen to use the service there might be an increase in the proportion who asked for visits earlier in the day. Another possibility was that patients might be resistant to the service and therefore request visits later in the day to avoid being asked to use it. If the latter were so it would be most apparent in the practices with services operating in the mornings only (A and D). A five per cent sample of all requests for visits showed no difference in the time the requests were made after the service started (except in E), and the majority of all requests were received by 10.30 am. In practice E 50 per cent of the requests were received before 10.30 in period I. This proportion rose to 59 per cent in period III. There were no changes in the distribution of requests over days of the week.

Home visits

Visiting patterns differed greatly between the practices. Over three quarters of all visits in practices B and C were new ones, initiated by the patient, against a half or under in A and D, but in E the majority of visits, over two thirds, were initiated by the doctor (table XVI). These figures reflect to some extent the attitudes of the doctors to visiting in the different practices.

After the new services were introduced there was a decline in the numbers of both new and repeat visits per patient in practices C, D and E. In the experienced practice, A, and in practice B there were fewer new visits per patient but the rate for repeat visits remained unchanged (table XVI). There were no significant changes in the ratio of new to repeat visits in practices A, C, D and E. The relatively fewer new visits in practice B‡ could not be accounted for by a lower rate of requests for new visits and might therefore be due to the transport service particularly as the majority of transport attendances in this practice were for first consultations.

In the control practices the numbers of both new and of repeat visits per patient also went down but the differences were smaller than in the experimental practices together (table XVI). The ratio of new to repeat visits remained unchanged in two practices (G and J) but the proportion of new visits increased in practices F and H.§

Discussion

In all the practices studied the number of visits decreased over time. As shown earlier, other researchers have found a similar trend, but this change was more marked

*These analyses were based on a five per cent sample of all attendances.

†Between period I (before transport) and period III (after transport).

‡The ratio of new to repeat visits was 6·3:1 before the service and 3·8:1 after,

¶The ratio before in F was 0·7:1 and 0·8:1 after; and in H 2·1:1 before and 2·8:1 after.

TABLE XVI
CONSULTATION RATES PER 1,000 PATIENTS FOR NEW AND REPEAT VISITS OVER SIX MONTHS BEFORE AND AFTER THE SERVICE STARTED
 Period I: mid-May 1968 to mid-November 1968 (before transport started)
 Period III: mid-May 1969 to mid-November 1969 (after transport started)

	<i>Experienced practice</i>			<i>Experimental practices</i>							
	<i>A</i>			<i>B</i>		<i>C</i>		<i>D</i>		<i>E</i>	
	<i>I</i>	<i>III</i>		<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>
New	131	119	..	144	89	279	181	152	69	306	264
Repeat	120	117	..	23	23	29	20	156	56	785	603
All (including casual visits)	324	281	..	170	113	316	208	314	125	1,128	886
Number of patients registered	9,178	9,235	..	14,779	15,019	14,453	14,429	2,846	2,871	10,547	10,572
				<i>Control practices</i>							
	<i>F</i>			<i>G</i>		<i>H</i>		<i>J</i>			
	<i>I</i>	<i>III</i>		<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>	<i>I</i>	<i>III</i>		
New	188	176	..	175	149	196	167	115	95		
Repeat	258	220	..	275	264	92	60	57	51		
All (including casual visits)	452	405	..	449	413	290	228	172	145		
Approximate number of patients registered	8,800	8,800	..	4,000	4,000	2,500	2,500	2,750	2,750	2,750	

in the four practices with new transport services (taking them together) than in the control practices together or in the practice with longer experience of a transport service.

Was there anything about these four practices which would lead one to expect this greater decrease in home visits if no transport service had been introduced? For example, had these practices unusually high proportions of visits for their area? Williams³⁸ found that the average proportion of all consultations which were home visits was 27 per cent in South Wales in general, but 21 per cent in the mining areas. This was for 1965–66. At the start of the present study both Monmouthshire practices (C and D) had a smaller proportion of visits compared to those studied by Williams. Over 1964 Baker⁴ found that in an East London suburban practice 20 per cent of all items of service were home visits—a proportion comparable with the findings for the two south London suburban practices (A and B) in the transport study. Studies of northern rural practices show a higher proportion of visits comparable with those in Practice E: 62 per cent in 1961 in central Scottish Highlands;⁴³ and 52 per cent in Northumberland in 1965⁶. So the four practices with new transport services appeared to have visiting rates generally comparable to those of other practices in similar areas. Although some of the visiting rates on this study were lower than the visiting rates quoted for other studies the data in the latter cases were collected several years earlier and this could account for the differences. Does this also mean that the visiting rates in these four practices are dropping more rapidly than elsewhere in this country? Without prolonged study of the practices there is no way of knowing, but the evidence strongly suggests that the transport service contributed substantially to the reduction in the visiting rates in these practices.* Since the numbers of visits decreased did the time spent on visits and related travelling also go down? This question is discussed next.

*The point is discussed further in the final section when data over two years of the service are presented.

IV

VISITING TIME AND RELATED TRAVEL

In terms of the doctors' time, visiting is an uneconomical way of seeing patients. This is clearly demonstrated by data from several practices, summarised in table XVII. These data suggest that, when the study was planned, a general practitioner probably spent something like 33 hours a week seeing patients in the consulting room and visiting patients at home (including travelling time). Home visits took up about 15 hours a week, approximately six hours of which were spent travelling to and from patients' homes. In other words 18 per cent of the practitioner's working time, or around 4 per cent of the total week, was spent travelling on home visits. He spent a little more time in the patients' homes (about 8 hours a week) than he did travelling to see them. But during an average week he saw on home visits between a third and a half of the number of patients he saw in the consulting room and, if travel was included, home visits took up almost the same time as seeing patients in the surgery. This seems an inefficient way of using professional resources.

TABLE XVII
TIME SPENT ON HOME VISITS AND SURGERY CONSULTATIONS
Data from four studies

	<i>Studies</i>							
	<i>Eimerl and Pearson¹³ 1966</i>		<i>Arbroath²² 1967</i>		<i>Lord and Cammoch¹¹ 1967</i>		<i>This study 1968*</i>	
<i>(a) Average time per doctor over a week spent:</i>	<i>Hrs.</i>	<i>%</i>	<i>Hrs.</i>	<i>%</i>	<i>Hrs.</i>	<i>%</i>	<i>Hrs.</i>	<i>%</i>
On visits: in homes	—		8.0	5	7.0	4	9.6	6
on related travel ..	—		6.5	4	4.9	3	7.5	4
Total on visits (including travel)	17.5	10	14.5	9	11.9	7	17.1	10
In surgery	18.9	11	17.7	10	no data		15.4	9
Total time consulting in surgery and on visits (including related travel) ..	36.4	21	32.1	19	no data		32.6	19
Total time at work (excludes 'on call')	43.9	26	38.4	23	no data		49.8	30
Total hours in a week (=100%)	168		168		168		168	
<i>(b) Proportion of all consultations for the week which were:</i>	<i>%</i>		<i>%</i>		<i>%</i>		<i>%</i>	
Home visits	24		22		26		38	
Surgery attendances	76		78		74		62	
Average number of consultations per doctor (=100%)	278		197		200		183	
*This includes data from practices B, C, D, E and F. It excludes A because this practice was running its own service when the study started.								

Did the service enable the doctors to use their time more effectively? To try and answer this the doctors were asked to keep detailed professional diaries for two separate weeks—one before and one, a year later, after the service started. The short periods over which the data were collected make their validity rather doubtful. But despite this limitation they support the major findings discussed in the previous sections. Initially two main questions were posed. After the service started did the proportion of all consulting time* spent visiting (including travel) decrease? And what changes were there in the proportion of all visiting times spent travelling?

Time spent consulting and on visits

After the introduction of the transport service the proportion of time spent consulting (that is in the surgery and visiting) remained the same in three of the practices (A, B and C) but in D and E the time spent consulting dropped (table XVIII). In the control practice F consulting time went up in the second diary week. How was consulting time divided between surgery and home visiting in the practices?

TABLE XVIII
DISTRIBUTION OF THE DOCTORS' PROFESSIONAL TIME BEFORE AND AFTER THE INTRODUCTION OF THE SERVICE
Week 1: 11–18 November 1968 (before transport started)
Week 2: 10–17 November 1969 (after transport started)

Proportion of time spent	Six-monthly consultation rates per 1,000 patients											
	Experienced practice		Experimental practices								Control practice	
	A		B		C		D		E		F	
	1	2	1	2	1	2	1	2	1	2	1	2
Consulting and on visits	%	%	%	%	%	%	%	%	%	%	%	%
Other practice work	17	18	20	21	17	17	20	17	21	18	18	20
Other professional work outside practice	3	3	4	5	4	5	4	5	4	4	5	5
Proportion of whole week 'on call'	12	10	12	6	8	5	3	6	1	—	9	4
Proportion of whole week free from professional duties	8	10	32	16	11	8	19	21	18	18	21	13
	60	59	32	52	58	65	54	51	56	60	47	58
Total number of man hours (=100%)*	504	504	336	504	1,008	840	336	336	1,008	1,008	504	504
No. of doctors†	3	3	2	3	6	5	2	2	6	6	3	3

*The total time was for the whole week including work in the evenings, at night and at the weekend. Time spent on professional activities was recorded to the nearest five minutes.
†Appendix 2 explains why the number of doctors varies between periods and between the tables.

Visiting time (as a proportion of all consulting time) remained the same in the experienced practice but went down in the other experimental practices and up in the control practice. This reduction in visiting time is what one would expect if the service

*That is in the consulting room, and visiting patients (including related travel).

was working efficiently (table XIX). In C and E the time saved on visits did not appear to be used for professional work. In E this was probably because in 1968 (before the transport) there were outbreaks of measles, mumps, diarrhoea and vomiting during the diary week which increased the total consulting time.

TABLE XIX
DISTRIBUTION OF CONSULTING TIME BETWEEN SURGERY CONSULTATIONS AND HOME VISITS
(INCLUDING TRAVEL) BEFORE AND AFTER THE INTRODUCTION OF THE SERVICE
Week 1: 11–18 November 1968 (before transport started)
Week 2: 10–17 November 1969 (after transport started)

Activity	Experienced practice		Experimental practices								Control practice	
	A		B		C		D		E		F	
	1	2	1	2	1	2	1	2	1	2	1	2
	%	%	%	%	%	%	%	%	%	%	%	%
Visiting (including travel)	39	41	53	40	37	31	42	23	70	64	51	58
Seeing patients in surgery	61	59	47	60	63	69	58	77	30	36	49	42
Total time in hours spent in consulting room and on visits (=100%)	88.1	91.1	68.8	106.0	176.8	142.8	66.9	58.2	215.0	184.2	93.0	100.6
Number of doctors	3	3	2	3	6	5	2	2	6	6	3	3

These differences between the two weeks in the time spent are consistent with changes in the consultations discussed earlier.

Time spent on travel related to home visits and in patients' homes

The effect the transport would have on the time spent in travel was more difficult to predict although it was hoped that it would be reduced. In fact in all practices the *actual* time spent travelling during the second week went down compared with the time spent a year earlier (table XX). The actual time spent in patients' homes also went down in all practices except in the experienced practice where it went up. Travelling as a proportion of visiting time went down in A, remained the same in B, C and E and went up in D. In the control practice actual time travelling and time in homes both went up but the proportion of visiting time spent in the patients' homes went down.

If the numbers of patients to be visited are small or spread out over the week then it may not be possible to organize visiting rounds economically for travelling time and mileage. This seems to have happened in practice D. The number of visits, the number of rounds and the mileage involved all affect the time spent on home visits and are discussed next.

Numbers of visits and mileage*

The numbers of patients visited over the diary weeks indicated a drop in the second week in all practices except the control.† Taking the experimental practices together

*All the data discussed under this heading are shown in table XXI.

†For practice B, table XXI shows the data for three doctors for week 2. If data for the same two doctors in weeks 1 and 2 are compared there was a drop in the numbers visited. Appendix 2 explains why different numbers of doctors participated.

there were drops in the average per doctor for the number of home visits over the week, the time spent travelling to see patients, and the number of miles travelled (this latter difference could have occurred by chance). The greater differences in all these

TABLE XX
DISTRIBUTION OF VISITING TIME BETWEEN TIME TRAVELLING AND TIME IN PATIENTS' HOMES
 Week 1: 11-18 November 1968 (before transport started)
 Week 2: 10-17 November 1969 (after transport started)

	<i>Experienced practice</i>		<i>Experimental practices</i>								<i>Control practice</i>	
	<i>A</i>		<i>B</i>		<i>C</i>		<i>D</i>		<i>E</i>		<i>F</i>	
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<i>Time spent travelling</i>												
Hours	15.7	14.9	15.6	10.2	28.8	18.9	11.5	7.6	67.8	52.9	19.1	25.0
Proportion of total visiting time ..	48%	40%	41%	43%	47%	48%	40%	56%	44%	44%	41%	44%
<i>Time spent in home</i>												
Hours	16.8	22.1	22.1	13.4	31.9	20.6	16.7	6.0	84.9	67.0	27.8	32.4
Proportion of total visiting time ..	52%	60%	59%	57%	53%	52%	60%	44%	56%	56%	59%	56%
Total number of hours spent on visits (=100%)	32.5	37.0	37.6	23.6	60.7	39.3	27.9	13.6	151.3	119.9	46.9	57.4
Number of doctors	3	3	2	2*	6	5	2	2	6	6	3	3

*Data only taken for same two doctors as previous year for comparability.

data occurred in practice E but earlier discussions indicate that these differences are unlikely to be due to the introduction of the transport service as relatively few patients were carried.

It seems* from the data that when fewer patients are visited, the average mileage per patient visited may increase, and the average time per patient spent travelling or in the home may also increase. With fewer patients to be visited the average number of patients seen per round may decrease. Taking all practices together the average time spent in a patient's home per visit went up after the service started. The data showed that the most geographically widespread practice (E) recorded the greatest mileage but did not show the highest average number of miles per visit during either of the diary weeks. This was because the large numbers of visits (particularly repeat visits) made it easier to plan so that more patients were seen on one round trip.

Conclusions about the effect of the service on the doctors' work

The data came from two sources and the findings about changes over time in the doctor's work load were consistently supported by changes in the way the doctors spent their professional time. Changes in the experienced practice (A) were less marked

*It is important to emphasize that these data must be treated cautiously. This is because details of time and mileage were not collected for each individual patient visited and no distributions were obtained. Therefore, significance tests for the difference between means per patient could not be carried out on all these data. Tests were done on the data for means per doctor per week.

TABLE XXI
 SOME CHANGES IN THE NUMBERS OF PATIENTS VISITED, MILEAGE AND TIME SPENT
 Week 1: 11-18 November 1968 (before transport started)
 Week 2: 10-17 November 1969 (after transport started)

	Experienced practice		Experimental practices						Control practice			
	A		B		C		D		E		F	
	I	2	I	2	I	2	I	2	I	2	I	2
	<i>Averages per doctor per week</i>											
Patients visited	52.3	47.0	58.5	43.7	41.2	25.8	37.5	13.0	116.8	73.3	60.7	66.7
Miles travelled	71.7	77.3	132.5	77.0	91.0	60.6	77.0	66.5	209.8	151.5	120.3	117.3
Time spent: travelling (hours)	5.2	4.9	7.8	5.2	4.8	3.8	5.6	3.8	11.3	8.8	6.4	8.3
Time spent: in homes (hours)	5.6	7.4	11.1	8.5	5.3	4.1	8.4	3.0	14.2	11.2	9.3	10.8
	<i>Averages per patients visited</i>											
Number of miles	1.4	1.7	2.3	1.8	2.2	2.4	2.1	5.1	1.9	2.1	2.0	1.9
Time spent: travelling (minutes)	5.98	6.35	7.93	7.13	7.00	8.80	8.92	17.46	6.22	7.22	6.29	7.50
Time spent: in homes (minutes)	6.41	9.42	11.35	11.65	7.75	9.57	13.37	13.88	7.79	9.12	9.15	9.73
Average number of patients seen per round	3.7	3.1	2.6	2.3	2.9	2.4	2.2	1.5	7.4	5.4	3.4	3.6
	<i>Bases for calculations</i>											
Total number of patients visited over the week	157	141	117	131	247	129	75	26	701	440	182	200
Total number of miles done over the week	215	232	265	231	546	303	114	133	1,259	909	361	352
Number of doctors providing data	3	3	2	3	6	5	2	2	6	6	3	3

but generally consistent with the findings for the experimental practices. Changes in the control practices although small were frequently in contrast to the findings from all the experimental practices. Also the proportion of all requests for the doctor to visit where transport was accepted as a substitute for the visit resembled the percentage reduction in new visits after the service started in practices B, C, D and E. Theoretically, in these four practices, all these people would have been visited if there had been no transport service.

It is probable that the transport service has contributed to the changing character of the work in four general practices by reducing the ratio of home visits to surgery consultations. The data also shows that this was generally accompanied by a reduction in the amount of time spent on visits. But in one practice (D) the proportion of time spent travelling went up even though the numbers visited were fewer. This may have been because with so few patients and with visits spread over the whole week, fewer patients may be seen on one round trip. This implied that for the single-handed practitioner it is possible that no time will be saved by the introduction of a transport service although there will be changes in the nature and place of his work. The findings also suggest that in a practice where the visits are many and widespread reducing a few of these visits may make little difference to the time and mileage spent on the remaining visits. On the other hand reducing the visiting list substantially might increase the average time and mileage per visit.

V

PATIENTS' REACTIONS

At a surgery consultation ' the doctor has ready access to the patient's record and to diagnostic equipment, as well as to other medical or non-medical colleagues whose advice or assistance he may want '.⁷ These are some advantages of using the transport service instead of having a home visit. Another is that using the service could mean an earlier consultation because the patient does not have to wait until surgery has finished before the doctor starts on his home visits. But visits have advantages for the patient too. He does not have to go out when unwell. He has a comfortable place to wait where he can occupy himself and the surroundings are familiar for discussion and for examinations, if necessary. Doctors may appreciate the patient's needs more appropriately and vividly when they see him at home. If patients regarded the availability of a transport service as an improvement in their medical care then the doctor-patient relationship might be strengthened and use of the service might be encouraged. Conversely if the transport service was regarded unfavourably the doctor-patient relationship might deteriorate and patients might become resistant to the service.

Some patients were therefore interviewed from each practice to monitor any changes in patients' views and experience that might be affected by the service and find out how they felt about its introduction. The findings are discussed under two main headings: first, attitudes towards the transport service; secondly, attitudes towards the doctor and towards some of the features of general practice. The samples are described first.

The samples

Since the service was used most by the elderly and by the very young patients a sample of patients aged 65 and over and the mothers of a sample of children aged 10 and under were interviewed in each practice before the service started.* They were seen between August and November 1968. Different but comparable samples were seen a year later between June and November 1969. During the second year a sample of patients who had used the service (during May and June 1969) were also interviewed between July and December. There were therefore five different samples of patients in each practice, with between 65 and 100 people in each one.†

Patients under 15 years of age were excluded from the sample of those who had used the service because of the possible confusion if mothers or children came up twice in two different samples.‡ Some elderly patients did come up in two 1969 samples and their responses were included in the analyses of each sample.

Looking at the main characteristics of the samples we found them to be comparable for the two years. The 'before' and 'after' samples of elderly patients within each practice had the same marital status, age and sex structure and when the samples of elderly patients were added together for all practices there were no differences in the social

*The mothers were interviewed about the sampled children's contacts with the doctor, and about their own attitudes in relation to their children's contacts with the doctor.

†See Appendix 3 for details of numbers sampled.

‡Since the ages of the samples of patients who had used the service ranged from 15 years upwards this sample is not comparable with any of the other samples, but for some comparative purposes it has been divided into the responses of those 'users' aged 65 years and over and those below 65 years.

class structures of the 'before' and 'after' samples.* The samples were comparable too in other socio-economic factors which might affect their contacts with the doctor such as: the type of household; type of dwelling; and the length of time the subject had been living in their home and the district. The two samples of children within each practice were also comparable for age, sex, social class, family type and number of siblings, and the length of time they had lived in their home and the district. The samples had comparable response rates before and after the transport started. Three quarters of the sample of elderly patients and nine tenths of both the samples of mothers and of the patients who had used the service were interviewed. There were no differences in the reasons why sampled patients were not interviewed. Details are given in Appendix 3.

These similarities between the 'before' and 'after' samples enabled the data to be grouped in different ways. For example the data may be combined across the practices but within the year to demonstrate changes over time; or they may be combined over the two years within each practice, to draw attention to differences between the practices.

Attitudes towards the transport service

Before discussing what people thought about the service some data are presented about the proportions who knew about it and those who had used it.

Knowledge and use of the service. Six to nine months after the service started two thirds or more of the elderly patients and over three quarters of the mothers knew about the service in all practices, except in practice E. In this practice only half of the people interviewed knew about the service.† The majority of those who knew about it had learned of it from their doctors and their staff, or from relatives, friends and neighbours. Fifty-three per cent of the elderly patients had heard about it from relatives, friends and neighbours; fewer of the mothers (28 per cent) had heard about it in this way. Only 26 per cent of the elderly had heard of the service from the doctor or his staff, whereas 41 per cent of the mothers had done so. It is likely that the mothers have more contact with the surgery than do the elderly, because of other members of the family for whom the mothers arrange consultations. Less than a fifth of both samples had heard of the service from leaflets, surgery notices or a report in the local paper of one area (13 per cent of the elderly and 18 per cent of the mothers).

Of course all of the 'transport users'‡ knew of the service and understandably many of them (56 per cent) had heard of the service from the doctor. Twenty-four per cent of the 'users' had heard about it from relatives or friends and 14 per cent from leaflets or notices.

When interviewed in 1969 some of the elderly patients and mothers had used the service although there were variations in use between the practices. In the practices with new services between 11 per cent and 6 per cent of the elderly patients had used the service, but the proportion was higher for the experienced practice (A—30 per cent). Between 12 and 34 per cent of the children sampled had used the service in practices B, C and D, but only a small proportion had used it in E (3 per cent). In A 46 per cent of the children had used it.¶ These data support findings presented earlier about the

*But there were social class differences within two of the practices. In practice A there were fewer patients in social class II after the service started; and in practice D there were more patients in social class V after the service started. Social class was defined according to the Registrar General's Classification of Occupations 1966.¹⁹

†In 1969 the proportion of elderly patients who knew of the service was 75 per cent in A, 68 per cent in B, 88 per cent in C, 86 per cent in D and 51 per cent in E; the proportion of mothers who knew of it was 87 per cent in A, 92 per cent in B, 99 per cent in C, 99 per cent in D and 52 per cent in E.

‡'Transport users' or 'users' refers only to the patients sampled because they had used the service.

¶Taking all practices together another 16 per cent of the mothers had used the service for themselves or another member of the family.

relative use of the service in each practice and they show that proportionally more of the children had used the service than the elderly. Earlier data showed, though, that the elderly used the service more for repeat consultations and the transport consultation rates were generally higher for the elderly in all practices except C.

At the time of the interview how often had the service been used by those with experience of it? Taking all practices together, 65 per cent of the sample of elderly patients who had used the service had done so more than once, and 47 per cent had used it three or more times. The children had used it less often—43 per cent had done so more than once and 25 per cent had used it three or more times. Not surprisingly, the sample of 'users' had greater experience of the service. Seventy per cent had used the service more than once, and 55 per cent had done so more than twice—so their views are those of patients with some experience of the service.

Attitudes towards the service are discussed first for those with no experience of it. These views are examined to see if there were any changes after the service started. Secondly, people's preference for using the transport or having a home visit are considered and the views of those who had used the service are compared with those who had not. Thirdly, the advantages and disadvantages found by those who had used the service are described.

Attitudes of those who had not used the service. In the first year's interviewing the patients in the experimental practices were asked for reactions to an idea that was entirely new to nearly everybody; but (as we have seen) a year later the idea was not new to most of them (with the exception of practice E).

The transport service was described to the patients who had not used the service and to the mothers with no experience of it for any members of her family. The description and the questions they were asked are given in full at the bottom of table XXII. The majority thought the service was a good idea and there were no differences between the practices, either before or after the start of the service, in the proportions who thought so—this was around 90 per cent of the people interviewed in all samples for the elderly and the mothers. More of the elderly patients thought the service was a good idea after it had started (90 per cent) than before (84 per cent) but this was the only difference between the 1968 and 1969 samples.

Table XXII also shows the reasons why patients thought the service was a good idea. Again there were no big changes after the service started so the 1968 and 1969 data have been combined. The first three reasons listed were all included in the description of the service by the interviewer and therefore they are not very meaningful. Two reasons patients mentioned spontaneously and frequently were that the transport service would help the elderly, disabled or infirm and those with a difficult journey. Understandably this last point was made more often by patients in the rural area, practice E, than in the other practices: by 57 per cent of the mothers there against 17 per cent in the other practices, and by 40 per cent of the elderly against 15 per cent in the other practices.

How did these elderly patients and mothers feel about being asked to use the service? Before the service started 72 per cent of both elderly and the mothers said they would like to use the service or would not mind using it (table XXIII). After it started the proportion dropped to 58 per cent of the elderly and 62 per cent of the mothers but in each sample more people said that how they would feel about using the service would depend upon the circumstances. Although after the service started 90 per cent of the elderly and the mothers thought the service was a good idea, fewer were definitely in favour of using it for themselves or their children (57 per cent of the elderly, 60 per cent of the mothers).

It seems that the elderly patients and the mothers were less enthusiastic about

using the service for themselves or their children than they were about the idea.

Preference for using the transport or having a visit. All the people interviewed were asked whether they would choose to use the service if given the choice. The numbers preferring to use the service are compared for those with and without experience of it.

A half or more of all sampled patients, whether they had used the service or not, said they would prefer to use it rather than have a home visit (table XXIV). Similar

TABLE XXII
REACTIONS OF PATIENTS, AND MOTHERS, WHO HAD NOT USED THE SERVICE THEMSELVES,
OR FOR THEIR CHILDREN, TO THE IDEA OF A TRANSPORT SERVICE
1968 (before transport started)
1969 (after transport started)

<i>Is the transport service a good idea and why?*</i>	<i>All practices 1968 and 1969</i>	
	<i>Patients aged 65 years and over</i>	<i>Mothers of children aged 10 and under</i>
	%	%
Thought the service was a good idea because:	87	87
It would save the doctors' time	25	30
Patients would be seen quicker	7	13
Better equipment and facilities at surgery	8	11
Good if patients too sick to go to surgery otherwise	6	9
Good for disabled or infirm	30	24
Good for those with a difficult journey	18	23
Other reasons	10	14
Felt to be a good idea but no reasons given	11	6
Did not think transport service a good idea	11	9
Don't know	2	4
Number of patients or mothers with no experience of service (=100%)†	590	480
<p>* <i>Question:</i> Some/your doctors run a special transport service. This is a car or minibus to bring some patients to the surgery when they are well enough to travel by car but would otherwise need to be visited at home. This means the patients can be seen more quickly where the doctor has all his equipment and it saves the doctor's time. (a) Do you think this is a good idea or not? (b) Why do you think that? † These percentages add up to more than 100 as some people mentioned more than one reason.</p>		

proportions stated this preference for the transport amongst the elderly patients who had not used the service* and the mothers—whether they had experience of the service or not. But more of the adult 'users', particularly those under 65 years, said they would choose to use the service—but they are likely to be biased because they had already agreed to use it.

The main reason given for preferring to use the transport service was that it saved the doctor's time. Forty per cent of the sample of 'users', 35 per cent of the elderly patients and 27 per cent of the mothers whether they had used the service or not gave this reason. A few people said their preference was because it saved the patient's time (6 per cent) and that there were better facilities at the surgery (also 6 per cent). Nine per cent of the elderly preferred the service because it gave them an outing or a break from the home and five per cent of the 'users' gave this reason.

*Since only 40 out of 320 of the 1969 sample of elderly patients had used the service and 12 of these patients were also sampled *because* they had used the service (and therefore have been considered in the 'users' analyses) data for the other 28 have not been used.

TABLE XXIII
REACTIONS OF PATIENTS AND MOTHERS, WHO HAD NOT USED THE SERVICE, TO THE IDEA OF USING IT FOR THEMSELVES OR THEIR CHILD
1968 (before transport started)
1969 (after transport started)

<i>Questions and responses</i>	<i>All practices</i>					
	<i>Patients aged 65 and over</i>		<i>Mothers of children aged 10 and under</i>			
	1968	1969	1968		1969	
	%	%	%	%	%	%
<i>Question: Supposing you were/ subject was getting better after an illness and instead of the doctor coming to see you/him at home he suggested that he would send a minibus to take you/him to the surgery to be seen by him there. How would you feel about that?</i>	63 } 9 }	57 } 1 }	47 } 25 }	60 } 2 }	72 } 62 }	27 11
For the idea						
Would not mind						
It would depend on circumstances	9	28	16	27		
Against the idea	19	14	12	11		
Number of patients or mothers with no experience of service (= 100%)	320	265	243	228		

Table XXIV also shows that a fifth of the 'users' and over a third of all others interviewed, whether they had used the service or not, would prefer to have a visit if given the choice. The main reason for not wanting to use the service was that one might not feel up to it or that one should not go out after an illness. Twenty-two per

TABLE XXIV
REACTIONS OF THOSE WITH AND WITHOUT EXPERIENCE OF THE SERVICE TO THE CHOICE BETWEEN USING THE SERVICE OR HAVING A HOME VISIT BY THE DOCTOR
1969 (after transport started)

<i>Responses (questions given below)</i>	<i>All practices</i>				
	<i>Mothers</i>		<i>Sample of adult 'users'</i>		<i>Patients aged 65 and over with no experience of service</i>
	<i>With no experience of service</i>	<i>With experience of service</i>	<i>Aged 15-64 years</i>	<i>Aged 65 years and over</i>	
	%	%	%	%	%
Would prefer transport	54	55	76	68	53
Would prefer home visit	42	39	20	23	41
No preference	4	6	4	9	6
Number of patients or mothers (=100%)	225	167	196	137	269
<p><i>Question (for those who had not used the service):</i> If you were/subject was getting better after an illness which would you prefer—to have the doctor visit you/him at home, or to see him at the surgery when you/he could go there in a minibus?</p> <p><i>Question (for those who had used the service):</i> Which do you prefer—to have the doctor visit you at home, or to see him at the surgery when you can go there in a car or minibus?</p>					

cent of all the mothers sampled, whether or not they had experience of the service would prefer not to use the service for this reason. Fewer of the sample of elderly patients with no experience (7 per cent) and of the sample of 'users' (9 per cent) felt like that. Six per cent of all the samples would prefer not to use the service because of the delay or inconvenience.

Some of the elderly also mentioned difficulties going out because of disability or handicap (6 per cent), that they felt more at ease at home and that it was more private at home (5 per cent). Some of the mothers said that there was no risk of infection from other patients if the doctor called at the house (5 per cent).

Advantages and disadvantages found by those who had used the service

Most of the 'users' and mothers reported advantages in using the service to see the doctor. Of the sample of 'users' nearly a third said that they could not get to the surgery otherwise because of some form of disablement (table XXV). There were differences between the practices: only a few 'users' gave this as an advantage in the Scottish rural practice, but over half did so in the London suburban practices. A third of all 'users' and mothers said that using the service saved their time—either because they were not waiting around at home for the doctor to call and they had more idea of when the bus would arrive, or because they said they were seen quickly when they did get to the surgery. In practice E 40 per cent of the 'users' said that they could not get to the surgery easily because of poor public transport. This was not mentioned as

frequently by the 'users' in any other practice; in practice A 15 per cent gave it as a reason and it was suggested as an advantage by a fifth of the mothers. Around 17 per cent of the 'users' and the mothers found the service helped them to see the doctor during a short-term illness when this was not too severe. Sixteen per cent of the mothers also said that the service helped when the sample child was too small to walk, or going to the surgery meant taking along other children who could not be left alone at home.

TABLE XXV
MAIN ADVANTAGES OF THE TRANSPORT SERVICE FOUND BY USERS OF THE SERVICE
1969 (after transport started)

Question: What advantages have you found in using the transport service to see your doctor?	Sample of adult users					Mothers*
	Practices					All practices
	A	B	C	D	E	
	%	%	%	%	%	%
Cannot get to surgery otherwise because of disablement or chronic sickness	49	53	26	17	6	—
Saves patients' time	18	27	37	29	37	37
Cannot get to surgery easily because of difficult journey	15	2	8	8	40	18
Could not or would not go to surgery otherwise because of short term sickness	10	6	17	29	13	18
Because child has to be carried and/or other children cannot be left alone	1	1	5	—	9	16
Saves doctors' time	6	7	1	6	16	3
Better equipment and facilities at surgery	—	—	1	2	—	—
It makes a break	4	—	3	2	4	—
Other†	22	12	29	20	20	20
None	5	4	5	8	—	12
Number of patients or mothers who had used the service (=100%)‡	72	68	76	48	68	168

*Mothers with experience of the service for sampled child or another child in family.
†Many of these referred to a saving of fares! The exact figures are not available.
‡These percentages add up to more than 100 as some people gave more than one advantage.

Few disadvantages were mentioned about the service. A tenth of the patients in two practices (A and C) said that using the service meant delay and waiting around for the bus to arrive. Fifteen per cent of the mothers thought that there was a risk of infection. Well over three quarters of the 'users' and over two thirds of the mothers who had used the service could not think of any disadvantage.

Attitudes towards the doctor and to other services he offers

Earlier in the report data from the doctors' records showed that the proportion of home visits had declined after the introduction of the transport service. Patients' reports of consultations in the four weeks prior to interview also showed that the proportion of home visits for both elderly patients and children had dropped in the second year (table XXVI).* For the elderly home visits dropped from 53 per cent to 31 per cent; for the children from 24 to 6 per cent. After the service started elderly patients reported using transport for 18 per cent of these surgery attendances and the

*The numbers of consultations which were reported during the previous four weeks were so small that the practices had to be combined and therefore no practice differences are discussed.

mothers did so for six per cent of the attendances by children. There were no changes in the proportions of the elderly and the children who had consulted at all in the four weeks before the interview.

TABLE XXVI
HOME VISITS AND SURGERY ATTENDANCES REPORTED OVER FOUR WEEKS PRIOR TO INTERVIEW
1968 (before transport started)
1969 (after transport started)

Type of consultation	All practices			
	Elderly patients aged 65 and over		Children aged 10 and under	
	1968	1969	1968	1969
Home visit	% 53	% 31	% 24	% 6
Surgery attendance	47	69	76	94
Number of consultations (=100%)	107	111	64	68

These changes in consulting patterns and patients' awareness and use of the transport service might influence the way patients felt about their doctor and their views on various features of general practice. For example as the majority of them appeared

TABLE XXVII
QUALITIES PATIENTS AND MOTHERS APPRECIATED ABOUT THEIR DOCTOR
1968 (before transport started)
1969 (after transport started)

Question: Would you think for a moment about the things which you like or appreciate about subject's/your doctor(s). Can you tell me what they are?	All practices			
	Elderly patients aged 65 and over		Mothers of children aged 10 and under	
	1968	1969	1968	1969
<i>Personal qualities</i>	%	%	%	%
Specific personality characteristics e.g., sympathetic, attentive, etc.	51	62	48	46
Explains things	1	2	4	3
Blunt, frank, straightforward	7	6	3	6
<i>Qualities relating to medical care</i>				
Thorough, conscientious	18	14	16	23
Visits promptly, regularly	12	7	16	9
Refers as soon as necessary	4	6		
Good with children	—*	—*	29	27
Skilled at diagnosis and treatment	3	5	3	4
Well equipped, good organization and service	—	1	1	2
Other specific attributes	5	4	11	10
Vague, unspecific praise	16	18	6	8
Nothing appreciated, does not like doctor	6	9	5	7
Number of patients or mothers (=100%)†	302	303	263	392

*Not applicable for this sample.
†These percentages add up to more than 100 as some people gave more than one characteristic.

to approve of the service this might enhance their respect for their doctor and the services he offered.

All the patients were asked what they liked or appreciated about their doctor or doctors and the question is given in full, together with the patients' responses in table XXVII. Before the service started 51 per cent of the elderly and 48 per cent of the mothers of both samples said they liked their doctor as a person and talked about his personal qualities, such as sympathy or attentiveness, rather than qualities more directly related to medical care. After the service started the proportion of elderly patients who mentioned these specific personality qualities rose to 62 per cent. Fewer of the mothers mentioned that the doctor visited promptly or regularly after the service started but more said he was thorough and conscientious.

This increase in the proportion of mothers who thought their child's doctor was conscientious might have been due to an increase in the proportion of medical examinations held. This seemed likely since one of the possible advantages of the service was that examinations were facilitated at the surgery and there was an increase in the proportion of surgery attendances. But there were no changes in the proportion of examinations reported. The elderly patients and the mothers said the doctor examined them, or their children, at two thirds of home and surgery consultations together.

Although there were indications that patients' liking and respect for their doctors may have increased after the service started there was no convincing evidence that any changes had occurred in the way patients felt about other features of general practice* with one exception. This was on their attitudes towards attending the surgery.

Changes in attitude towards attending surgery. One effect the transport service might have had was to encourage patients to attend the surgery more readily. In an attempt to assess attitudes towards surgery consultations versus home visits patients were asked where they would like to have a medical examination if given a choice,† and what they would do in a series of situations. The responses by the elderly patients are discussed first.

Fewer of the elderly patients stated a preference for having a medical examination at home (38 per cent before, 27 per cent after) and more of them said they would not mind where the examination was (44 per cent before, 58 per cent after). After the service started slightly more of the elderly patients said that they would go to the surgery to see the doctor for nine of the 12 conditions asked about, but the difference was unlikely to have occurred by chance for only one of these conditions—a boil on the neck (table XXVIII). There was no significant change between the two years in the proportion of elderly patients who said that they would consult their doctor about a boil on their neck; but the proportion who would do so at the surgery rose from 42 to 52 per cent after the service started.

Amongst the mothers there were rather more changes over time. In answer to where they would prefer a medical examination for their children three quarters of them, for both years, said they would not mind where. But for the second year more of them said they would choose to have a medical examination at the surgery (19 per cent instead of 13 per cent the year before).

The mothers were asked what they would do or had done in a series of illness

*Some of the features examined for changes in attitude were views about the appointment system, accessibility of the doctor, and whether one doctor in particular was regarded as the patient's own doctor. We also looked for changes in the number of different doctors seen over a period of time.

† The question was: If the doctor needed to make an examination for which you needed to be undressed would you prefer to have it at your own home or in your doctor's surgery?

TABLE XXVIII
 ELDERLY PATIENTS RESPONSES TO WHAT THEY WOULD DO FOR TWELVE SYMPTOMS*
 1968 (before transport started)
 1969 (after transport started)

What elderly patients would do	A boil on your neck		Abdominal pain coming on and off for more than 24 hours		A headache lasting for more than a day and not relieved by aspirin or other headache tablets		A rash which came on overnight		A badly sprained ankle you thought might be broken		Chest pains		Loss of voice for a week		A heavy cold with sore throat, temperature and running nose		A nosebleed that you couldn't stop easily		WOMEN ONLY A lump in your breast		Constipation lasting five days		Dizzy spells	
	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969
Go to surgery (with or without transport)	42	52	34	39	44	42	46	48	19	27	42	41	49	51	12	14	23	25	73	74	38	36	43	47
Ask doctor to visit	11	8	52	48	12	10	22	16	72	61	38	37	12	8	32	27	58	54	23	20	7	2	26	21
Do nothing or treat it one's self	44	36	10	9	40	45	28	30	4	5	16	18	37	39	56	57	14	14	3	4	52	61	27	28
Ring doctor for advice	2	1	4	3	2	2	3	4	1	4	3	2	2	2	—	—	2	3	—	1	—	—	3	2
Other	1	3	—	1	2	1	2	2	4	5	1	2	—	—	—	2	3	4	1	1	—	1	1	2
Number of patients (= 100%)	310	299	311	305	319	305	309	295	320	300	315	311	325	307	314	295	315	296	195	187	317	317	322	312

*The question for the elderly patients was—

I have a list of conditions or symptoms which I will read to you. I would like you to try and imagine what you would do for each. Would you go to see the doctor at the surgery, ask him to call here, or what would you do—or wouldn't you do anything? If you had (read list) what would you do?

TABLE XXIX
MOTHERS RESPONSES TO WHAT THEY WOULD DO FOR ELEVEN SYMPTOMS*
 1968 (before transport started)
 1969 (after transport started)

<i>What mothers would do</i>	<i>All Practices</i>																						
	<i>Had an abdominal pain coming on and off for more than 24 hours</i>		<i>Had a rash coming on overnight</i>		<i>Been listless for a week</i>		<i>Had any infectious disease (specify)</i>		<i>Had a heavy cold with sore throat, temperature and running nose</i>		<i>Had a heavy nosebleed that wouldn't stop easily and quickly</i>		<i>Been knocked out for a few minutes</i>		<i>Had high temperature for no apparent reason</i>		<i>Had running ear</i>		<i>Been overweight</i>		<i>Been underweight</i>		
	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969	
Go to surgery (with or without transport)	28	40	25	31	63	64	9	18	16	37	18	24	23	22	10	17	73	76	49	50	65	65	65
Ask doctor to visit	48	36	31	27	13	14	81	63	32	25	36	24	32	25	41	33	9	10	—	—	1	1	1
Do nothing or treat it one's self	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ring doctor for advice	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Number of mothers (= 100%)	243	365	238	368	261	368	262	376	247	372	237	313	235	342	242	350	262	367	261	373	264	369	369

*The questions for the mothers of children aged ten and under—
 I have a list of conditions or symptoms which I will read to you. For each would you tell me if subject has had this at all in the last twelve months, that is since this time last year?
 Has subject (*read list*) in last twelve months?
 If YES. What did you do? Take him/her to the surgery, ask the doctor to call here, or what—or didn't you do anything?
 If NO. What would you do if subject had this? Take him/her to the surgery, ask the doctor to call, or what, or wouldn't you do anything?

situations involving their children.* Six of the 11 conditions revealed changes in attitude. These were: persistent abdominal pain, an infectious illness, a heavy cold, a persistent nosebleed, a high temperature and being knocked out. For four of these (all except a heavy cold and being knocked out) the same proportions had or would consult their doctor, or ask his advice about the condition before and after the service started. But for each the proportion who had or would consult at a home visit went down and those who had or would do so at a surgery consultation went up (table XXIX). For a heavy cold more of the mothers said that they had or would consult, but most of these said they had or would do so at a surgery consultation rather than at a home visit: fewer mothers had or would do nothing or treat it themselves. For an infectious disease more of the mothers who were interviewed the second year said that they had or would ring the doctor for advice. For being knocked out the same proportion had or would consult, but fewer had or would ask for a home visit, and more mothers had or would ring the doctor for advice. The patients in practice E again placed an emphasis on home visits by the doctor more often than the other practices. This practice did not contribute significantly to any shifts away from home visiting.

Conclusions

The majority of patients were in favour of the idea of the service although some who had not used it were less enthusiastic about using it themselves. Very few were definitely against trying it.

The service was accepted as a help to the doctor by those who had used it and few saw disadvantages in such an alternative to home visits. There were suggestions in the data that actually using the service allayed some of the early fears and reservations held by the adults, but that the mothers retained their doubts about using it. However, the patients who used it were self-selected because they accepted the offer and therefore were probably more in favour of it anyway.

There was some evidence that patients were changing in their attitudes towards home visits. After the service started fewer of them said they would ask the doctor to visit and more would choose to go to the surgery instead. The introduction of the service may have contributed to this change. Apart from this, as far as one can tell, the doctor-patient relationship remained the same after the service started but changes might take longer than one year to become manifest.

*Mothers were asked if their children had had the symptom and they were then asked what they did or would do in that situation. There were no differences between the 1968 and 1969 samples in the proportions of mothers who said that their children had had each symptom. The mothers who were asked a question hypothetically (that is, their children had not had a symptom) were more likely to say that they would consult the doctor either at the surgery, at a home visit or over the telephone and this tendency did not change over time. For example 95 per cent of the mothers whose children had not had an abdominal pain said that they would consult the doctor, whereas 64 per cent of those who had had a pain had consulted the doctor.

VI

PHYSICAL AND SOCIAL DISABILITY IN ELDERLY PATIENTS

There is some evidence of a need for better preventive, or interventive, care for old people.²⁰ A study by Williamson and his colleagues³⁹ in Edinburgh showed that the amount of unmet need for care from general practitioners is high. This was judged by the amount of unknown disability found by a medical team in a sample of old people examined. Williamson and his colleagues concluded that much of the disabling disease could be prevented if it were known about in time. A contributory factor may be that many old people accept their disabilities as an inevitability of old age and do not consult a doctor until the symptoms are advanced or a crisis occurs.⁴⁰ Such acceptance can lead to a vicious circle of reduced activity and a further accentuation of symptoms.

The prevalence of physical and social disability among the elderly patients in the study practices was considered for two reasons. First, the transport service in normal use might affect the amount of unreported morbidity or other disability in the elderly either by encouraging patients to visit the surgery and to talk to their doctor more readily; or by inhibiting them so that they talk less because of unfamiliar surroundings. Secondly, the service might be extended specifically to bring elderly patients to the surgery for a form of medical check; but this would only be worthwhile if there was a considerable proportion of conditions and symptoms which were treatable but had not been brought to the attention of the general practitioner.

Possible effects are looked at under four headings. First, various symptoms in the elderly are discussed with particular emphasis on the symptoms which had not been brought to the doctor's attention. Secondly, the extent to which the elderly in the sample were limited or handicapped in performing everyday activities is described. Thirdly, the amount of social contact the elderly had with other people, both inside and outside their home, is examined. Fourthly, there is a discussion of the use of some social services by the elderly.

There were no changes between the 1968 and the 1969 samples in the proportions of the elderly who had consulted their doctor in the previous year, nor in how often they had done so. A fifth of the elderly said they had not consulted their doctor at all for at least two years. There were no changes over time in the proportion of patients reporting various symptoms* at the interview, nor in the number which had not been discussed with the doctor. Neither were there changes over time in the elderly patients' reports of social contacts nor how often they said they went out. So if the service in normal use can affect the amount of physical or social disability or the number of symptoms not brought to the doctor's attention then this did not show up over the time of the study.

There remains the question of whether it might be reasonable to extend the transport service to bring elderly patients to the surgery for a medical check.

Symptoms not discussed with the doctor

Four fifths of the patients aged 65 and over had at least one of the eight symptoms

*These are listed in table XXX.

listed in table XXX, and half of the sample had at least one symptom about which they said they had never consulted their doctor.*

TABLE XXX
CONDITIONS REPORTED BY PATIENTS OF 65 YEARS AND OVER
1968 and 1969 together

<i>Patients ever having:</i>	<i>All practices</i>
	%
Difficulty hearing	34
Difficulty seeing/reading	22
Breathlessness	35
Trouble with feet	31
Stiffness or other difficulty walking about	36
Getting too fat	12
Getting too thin	5
Dizziness	29
None of these	18
Number of patients (=100%)	656

When the patients were asked whether they had ever talked to a doctor about these conditions two thirds of those who suffered from stiffness or other difficulty walking about said they had done so, over half of those with dizziness, half of those with difficulty in hearing, seeing or reading, or breathlessness, and a third of those who had trouble with their feet.† These figures mean that of all the elderly patients nearly a fifth had trouble with their feet which had not been discussed with their doctor; a fifth had undiscussed difficulties in hearing or breathing; and a tenth had unreported stiffness or difficulty walking about, dizziness, or difficulty seeing or reading.

Elderly patients were also asked how much each symptom bothered them. The proportions who said they were 'bothered a lot' varied, for the six most common conditions, from about two fifths of those with stiffness or difficulty walking about, difficulty seeing or reading and trouble with feet to one fifth of those reporting dizziness. It was around a quarter of those with breathlessness and difficulty hearing. Table XXXI shows how recently the patients who were 'bothered a lot' by the different conditions had consulted their doctor about the symptom. Patients who were 'bothered a lot' by the symptoms were more likely to have consulted their doctor about the conditions (76 per cent) than those who did not find the symptom so troublesome (44 per cent). Even so nine tenths of those 'bothered a lot' by difficulty in hearing had not consulted their doctor about it in the last year and nearly a third of them had never done so. The symptoms they were most likely to consult about were breathlessness and dizziness. Over two thirds of those who said these conditions 'bothered them a lot' had discussed them with their doctor in the last year, one in eight had never done so.

*The questions about these symptoms were: I'd like to ask you about a few things *some* people have trouble with as they get older. For each would you tell me if you ever have trouble with this problem. Do you ever have — (each symptom asked in turn). If *yes* (a) Does it bother you a lot, a little or hardly at all? (b) Have you ever talked to a doctor about it? If *yes* to (b): How recently?

†Clark¹⁰ found that 77 per cent of people aged 65 and over reported foot troubles at an interview specifically designed to detect such trouble, and later examination of the same people by a chiropodist found foot troubles in 95 per cent of this age group. Dunnell¹² found that 34 per cent of people aged 65 and over answered 'yes' to a question about whether they had 'corns, bunions or any other trouble with your feet'.

But for some conditions it is important that doctors should be consulted as soon as possible, before they became too severe, and it has already been shown that half the patients had at least one of the symptoms asked about which they had not discussed with their doctor. Yet 71 per cent of these had consulted their doctor about something else in the previous year. To see a doctor about one condition does not necessarily mean that he will ask or find out about other problems. This indicates the need for a medical check if doctors are to become aware of the multiple conditions suffered by many of their patients in old age.

TABLE XXXI
WHETHER AND WHEN THE PATIENTS WHO WERE 'BOTHERED A LOT' BY VARIOUS SYMPTOMS
HAD CONSULTED THEIR DOCTOR ABOUT THEM
1968 and 1969 together.

<i>When consulted:</i>	<i>All practices</i>					
	<i>Difficulty hearing</i>	<i>Difficulty seeing or reading</i>	<i>Breathlessness</i>	<i>Trouble with feet</i>	<i>Stiffness or other difficulty walking about</i>	<i>Dizziness</i>
	%	%	%	%	%	%
Within last year	9	27	70	35	49	68
More than one year ago	61	46	17	23	36	20
Not at all	30	27	13	42	15	12
Number of elderly patients 'bothered a lot' by symptom (=100%) ..	56	55	63	78	95	34

Difficulties in everyday activities

Nearly a third of all elderly patients reported some difficulties in every day activities:* between a tenth and a fifth reported difficulty bathing, going up and down stairs and cutting toenails. Fifteen per cent had difficulty going out of doors on their own so many of these might not be able to get to the surgery unless they were taken there. Twenty-six per cent of these patients seen in 1969 who had difficulty going out had used the transport service. If an attempt was made to bring all elderly patients to the surgery for a check this might extend the range of activities for a few old people who would otherwise be confined to their homes. But a sixth of all the elderly patients interviewed said they would have some difficulty using the minibus and most of these patients said it was because of the difficulty climbing steps. A vehicle that was easier to get in and out of would be needed to enable many of these patients to use the transport service either for an ordinary visit or a check up.

Social contacts

Earlier (in the section on the transport service and who had used it) it was found that the elderly in a sample of patients who had used the service had fewer social contacts than those in a straight sample of all elderly patients, so the service may be of particular help to those who tend to be socially isolated.

How many elderly people were there who lived alone or had few contacts with other people? Twenty-three per cent of the elderly patients lived alone and another 37 per cent with just their husband or wife. These patients were more likely to have been

*The question was—Do you have difficulty in : Going out of doors on your own? Going up and down stairs on your own? Getting about house on own? Getting in and out of bed? Bathing yourself? Dressing yourself? Cutting toenails? Washing your hair?

out during the preceding week than those who lived with other people. Ninety-one per cent of the elderly who lived alone or with a spouse had been out more than once, 82 per cent of those living with other people had been out as often. The same proportions of patients, whether they lived alone or with others said that they had none of the symptoms or difficulties asked about. Neither were there any large age differences.* It seems that when there are fewer people in a household to help, the elderly person has to be more active in order to manage the home.

The majority, four fifths, of the patients, whether they lived alone, with a spouse or with others, had had a visitor or caller at the house in the previous week.† Those living alone were no more likely to have had a visitor than those living with their spouse or other people. Altogether five per cent of the total sample lived alone and had no visitors or callers but over half of this small proportion had been out at least seven times in the week before they were interviewed.

Patients who live alone and have few visitors are at risk because, if they are ill or depressed and do not go out, their absence may not be noticed immediately. But an occasional, if regular, medical check cannot contribute much to the solution of this problem. It might however help to ensure that elderly people get appropriate help from the social services.

Use of social services

Other researchers have shown that elderly people often do not know about social services which could help them.^{28, 29} On the present study 36 per cent of the elderly patients did not know about the chiropody services for old people although the local authorities ran such services in all the practice areas. A quarter of the elderly had received some advice or treatment from a chiropodist in the previous year. Almost all the elderly people (95 per cent) had heard of the 'Meals-on-Wheels' service but very few (2 per cent) had any meals through the service in the last 12 months. Rather more, a tenth, said they had attended a club for older people regularly over the last 12 months but a third did not know that there were such clubs in their area.‡ A little more than a tenth, 12 per cent, had some help in the home¶ but only half of this help was through the home help service. The proportion using these four services did not change during the time of the study and neither did the proportions of occasions on which they were arranged through the general practitioner. The doctors played a part in arranging 17 per cent of these services.

The general practitioner played a relatively much larger part in arranging for people to be visited by a district nurse or health visitor. A tenth of the elderly patients had this type of help and the doctor had arranged it for three quarters of them. But the proportion of people receiving this form of care changed between the two years. Before the service started it was 13 per cent, a year later it had dropped to eight per cent. This is a slight indication that the doctors might have become rather less aware of their patients' needs possibly because they were less likely to have visited their homes.

Patients were asked about any other help they would need or like in the next 12

*Apart from patients aged 80 or over who were less likely to live alone or with just a spouse.

†The questions were: During the last seven days, that is since this time last week: (a) How many people have been to visit you who have stayed for half an hour or more? How many different occasions? (b) How many people have called in for less than half an hour, or just called at the door? How many different occasions?

‡Patients in practice E were omitted from these proportions because there were no social clubs especially for older people in the area.

¶The question was: Do you (or your wife) have anyone coming in to help with the housework who does it as a job, or have you had anyone in the last twelve months?

months.* A third said they would like some, and this proportion increased from 30 per cent before the transport service started to 37 per cent afterwards. Thirty per cent of these wanted help with routine housework, 11 per cent chiropody and 26 per cent other types of help mainly heavier housework, decorating and gardening. Just under a third of them were uncertain about the kind of help they wanted.

The relatively high proportion expressing a desire for help reinforces the findings from other studies of unmet needs in relation to home helps²¹ and chiropody.¹⁰ A routine check might be helpful in bringing some unmet needs to the attention of the doctor but there seems to be a danger that a decline in home visiting, either because of a transport service or for some other reason, may make doctors less aware of some types of need.

Conclusions

The data contained in this section suggest that the elderly might benefit from a regular examination. Fewer troublesome symptoms might be left undiscussed with the doctor, and patients' needs for other services, such as chiropody, might come to the practitioner's attention. However bringing patients to the surgery instead of seeing them at home might mean that other needs would be overlooked—for example where help in the home was necessary.

*The question was: Help of this kind is often difficult to obtain. If it were possible for you to receive any (additional) help what would you need or like in the next twelve months?

VII

IMPLICATIONS AND FUTURE DEVELOPMENT

What are the implications of this study for others who may be thinking of starting a transport service? To try and answer this the problems of setting up a service are described first, followed by a discussion about the advantages and disadvantages. Some of the disadvantages led to reorganization of the services in the study practices at the end of the first year. These changes and the use of the services over two years are described. Finally, there are some suggestions about the development of different types of transport services.

Setting up a service

The study revealed a number of points to consider when setting up a transport service. Solutions to some of the problems were suggested by the findings but no straightforward answers emerged for other difficulties. Obviously individual practices will have specific problems of their own to consider.

The vehicle. It was clear from the data and from the drivers' comments that a minibus seating 12 to 15 people was too large for most practices in this study. The Landrover used in the single-handed practice was a more appropriate size and had additional advantages in hilly or rough country and in bad weather. All the drivers commented on the difficulty many elderly patients had climbing in and out of the minibuses. If a service is to be used to carry a high proportion of elderly patients a different kind of vehicle could be considered—perhaps along the lines of a modified London taxi which has a comparatively low step, a wide door and upright seats. Other equipment which might be used in association with different types of vehicles are a swivel passenger seat, hand rails and a ramp or lift for wheelchairs.

The driver. Inevitably the drivers have to spend time waiting both at the surgery and at patients' homes. This happened in all the study practices. Patients sometimes decided not to come when called for or were out when the bus arrived. The driver was also an obvious recipient for the inevitable complaints from some patients. He therefore needs to be somebody who can tolerate these difficulties with equanimity. Since patients may ask the driver to stop at a chemist to deliver prescriptions or collect medicines it may be useful to decide at the beginning whether or not this is to be part of the transport service.

Presenting the service. When one general practice makes an innovation other practices in the vicinity may be concerned about the possible effect on them. At the start of this study some neighbouring practices were anxious about the service in case it attracted additional patients. Their fears seemed to be allayed when the service started. As far as we can tell it made no substantial difference to the number of patients registered with the study practices.

The service was not widely advertised outside the surgery premises but six to nine months after the service started the majority of the patients interviewed said that they had heard of the service—usually from the doctor or from relatives and friends. So it seems that there was no problem about letting patients know of it. Some difficulties were encountered in suggesting that patients might use the service when they had asked for a home visit. In the practices in the study most of the incoming telephone calls were answered by staff who had little medical or nursing experience, although some

had been doing medical reception work for many years. Some of the ancillary staff expressed concern about not being sure how hard they should try to persuade patients to use the service, how it should be done and to whom.

The majority of the patients interviewed were enthusiastic about the idea of the service and receptive to suggestions that they might try it. A few had reservations about using it themselves.

Accommodation. Inevitably when a transport service is introduced more people come to the surgery. Space is needed for patients to wait to see the doctor and to wait for the bus to take them home. Adequate surgery facilities for the additional consultations are needed.

The advantages of a transport service

The most important advantage was that the numbers of visits went down markedly in the practices with new services. In these practices the proportion of time spent visiting also went down while in the experienced practice visiting time remained fairly steady and in the control practices it went up.

Other advantages were reported by some of the doctors. Several of them said that by spending more time in the surgery they were more available for emergencies. Others said patients could be more thoroughly investigated at the surgery with the help of ancillary staff, better lighting and more equipment. The physical mobility of some elderly patients was increased—according to some doctors—although this did not show up in interviews with the elderly. Several doctors felt that patients were gradually being encouraged to come to the surgery and this was supported by the interview data. Seeing more patients at the surgery meant that their records were always available and recording was easier and therefore probably improved. The minibus was also useful for taking patients to hospital both for admission (which was easier earlier in the day) and to casualty departments, for carrying equipment between branch surgeries and taking specimens to the laboratories. Not all the doctors mentioned all these advantages and four said that the service had no advantages at all.

The main advantages found by patients who had used the service were: that it was helpful for those who were disabled or infirm, that it saved the patient's time and that it was useful in the case of short-term, but not too severe, sickness. Several patients in practice E also said that it was a help for those with a long or awkward journey to the surgery.

The disadvantages of a transport service

There were disadvantages some of which had more serious implications than others. The greatest single drawback was the cost of running the service. All the doctors were concerned about this and some questioned the feasibility of the service if and when they had to meet the additional cost themselves. The greater the distances involved the greater the average cost per patient carried.

Other disadvantages revealed by the survey were that insufficient consulting space or an unwillingness to extend consulting hours limited the use of the service. These factors probably contributed to the little use of the service in the rural practice. It was also found that in practices with exceptionally high or low visiting rates the advantages of the service were considerably less in terms of the saving of time spent on visits.

Early on some doctors were concerned about the danger of infection in the bus and at the surgery but they admitted that this did not amount to much. Some also feared the possibility of bringing patients to the surgery who really were not fit to come, but this also applies to normal surgery attendances, except that then the doctor is not usually involved in the decision to attend. A few doctors regretted the loss of knowledge

of the home environment and felt the doctor-patient relationship might deteriorate because of this.

In larger practices the switchboard became congested in the morning as it took some time explaining about the service and arranging it for a patient. Other patients when they did get through were then irritable and complained. The reception staff, too, often had to deal with more patients at a time. There were problems of where transport patients could wait and in every practice they could cause disruption of surgery appointments. This happened less in the experienced practice A. Surgery sessions were inevitably lengthened when the service was used extensively and some doctors found the longer sessions too demanding. The practice staff reported that transport patients often had to wait some time to see the doctor and then wait again to be taken home.

The majority of the patients who had used the service could not think of any disadvantages. Some of the mothers thought there was a risk of infection and a few of the patients did not like waiting around for the bus to arrive.

Apart from the costs most of the disadvantages mentioned seemed to be capable of improvement by some reorganization. For example by setting aside specific surgery times for transport patients surgery sessions were disrupted less. Congestion on the switchboard might be eased by more incoming telephone lines or by delegation of different types of requests to different administrative staff. The costs of the service caused some reorganization to take place at the end of the first year and there were other changes too.

Changes in organization

In December 1969 practice B started to use their service part-time: all day on Monday and afternoons only Tuesday to Friday inclusive. This was to reduce the running costs of the service. Also from December the two South Wales practices (C and D) shared one service. This too, was to cut the costs for the single-handed practitioner. The combined service was organized from practice C and from the end of February 1970 these practices were also able to use radiotelephone equipment and a folding wheel chair. At the end of April practice E started to consult in an additional room. This was a prefabricated temporary building equipped as a consulting room and wired and plumbed to the existing premises. This was to ease the pressure on the existing premises and to enable more patients to be seen at the surgery. Did these changes have any effect on the amount the service was used? To answer this the data collected after the main recording ended were compared with data presented earlier in the report.

Patterns of use over two years*

Amount of use and effect on work. During the second year the new services did not develop beyond the level of use reached the first year and there were no consistent changes in the patterns of work over the two years. Unexpectedly the existence of an additional consulting room in practice E did not increase the use of the service in this practice. The use in the experienced practice increased slightly during the two years under consideration. It seems that after the initial impact the services did not continue to reduce home visits to any marked extent.

Changes in use. There were indications that the service was used increasingly for repeat consultations. One possible explanation for this was that the doctors were becoming more aware of different possibilities of the service and therefore suggested it more. If this were so one would expect an increase in the proportion of occasions on which transport was arranged at a home visit. But this did not happen. Another possibility was that the patients themselves may have been more confident of their right to use the service and asked for it more readily for repeat surgery consultations. This

*All the data on which this discussion is based are given in Appendix 4.

would apply in particular to patients who used the service regularly for repeat consultations.

Mileage and costs per patient carried. Over the second year the average mileage per patient carried decreased in all the practices. This was most marked for practices B and D where the average cost per patient carried also dropped considerably. In B this was probably because more patients were carried over a shorter period of time which encouraged more efficient organization. In practice D the change was undoubtedly due to the shared service. Although the costs in E also went down its service still remained the most expensive service per patient carried. These findings suggest a gradual improvement in the efficient organization of the services.

Use of radiotelephone equipment and wheelchair. During the second year all the practices (except B) made some use of radio-telephone equipment to facilitate the collection of patients. This equipment was used most extensively for practice D—on 65 per cent of the occasions on which patients were collected—because of the delay between receiving patients' requests at practice D and passing these on to the staff at practice C (from where transport was organized). The equipment was used on 31 per cent of the occasions in practice C but in A and E the radio was used much less often—on 12 per cent of the occasions in A and seven per cent in E. Obviously the amount radiotelephone equipment will be used varies greatly with the type of practice.

A folding wheelchair in practice D was used infrequently—for four per cent of all the patients using the service. Although the wheelchair was available for patients from practice C there were no indications that it had ever been used for them. None of the other practices had wheelchairs. The decision to provide a wheelchair will depend upon the proportion of elderly or disabled patients likely to use the service.

The future development of transport services in general practice

During the third year of the new services two of them had been discontinued—those in practices B and E. All were stopped because of the high costs. But despite these disappointments many of the doctors felt that there was a future for transport services in general practice—although not necessarily as organized in this study. The findings from this study highlight areas which need thought before introducing a service. Only further study of different types of service would enable assessment of how well they work and this study has indicated that a cost-benefit analysis should be a part of any future research.

Suggestions about the ways in which transport services could be used fall into three broad groups: first, services used by a number of partners or practices; secondly, services developed for more specialized purposes; and thirdly, the use of transport services by combinations of medical and paramedical staff.

Services shared between practices. The way the service was used in the study practices was not economically viable for the single-handed practitioner. Nor was it economical for ferrying a few patients a day, one or two at a time. But the findings indicate that a service could be used economically in some larger practices or with neighbouring practices sharing one service. In some areas sharing a service on the same days might be impractical. An alternative might be to share a vehicle and driver but for them to be attached to different practices on different days. In this case the service would probably be used more for repeat consultations, arranged in advance, and less for new calls. Some clinic sessions might then be organized around the day the service was operating in that practice.

Another way of organizing a shared service to advantage might be to operate it for longer each day and make it available for out-of-hours emergency calls and weekend duties for all the sharing practices.

Specialized use of services. Various, more specialized, uses of a transport service have already been tried by a number of general practitioners. One introduced a bus service into his widely scattered practice on the Yorkshire moors to pick up patients from previous branch surgeries and bring them to a central surgery.³⁴ A local garage proprietor operated the bus service, which at other times carried children to school, at a cost roughly equal to the rent of the branch surgeries it replaced. Others, thinking of introducing such a scheme, would also need to find a vehicle that could be used in otherwise idle time if the cost was not to be prohibitive. It might then solve some of the problems of general practice in sparsely populated areas. Metcalfe and Twinham²⁷ have used their own 'taxi service' to bring elderly patients to the surgery and recently the costs of this service were reduced by using volunteer helpers.

A patients' transport service might be of additional benefit to doctors and patients alike if it were used for consultations which the doctors do not do at present but for which there may be a need. For example it might be used to bring elderly patients to the surgery for check-ups. Data from this study and from others indicate that this specialized use of the service might be worth developing further on an experimental basis.

Services shared with paramedical staff. One achieved objective of the Metcalfe and Twinham²⁷ service was to make better use of their part-time health visitor. As the health services become more integrated with doctors, nurses and other paramedical people working together from health centres, a transport service might be shared by the different members of a health team. People could be brought in to see nurses, chiropodists and dentists.

As the barriers between hospital and community care are breached the integration of general practice transport services with the existing ambulance services becomes feasible. Cumberland County Council 'have in a small way been helping certain rural group practices by arranging for the transport in to the surgery of a limited number of patients'.²⁴ The service mainly uses 'the hospital car service run by the British Red Cross Service on behalf of the ambulance service and, to some extent dual purpose vehicles of the ambulance service'.

Services such as this may make a small contribution towards effective integration and co-operation between the various branches of medical care.

APPENDIX 1
Details of the practices

TABLE A
AGE AND SEX STRUCTURE OF THE PRACTICES AND THE PROPORTIONS JOINING AND LEAVING
DURING THE FIRST YEAR OF THE STUDY

	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
<i>Age structure: May 1968</i>	%	%	%	%	%
10 years and under	15	14	17	13	16
11 - 44 years	42	41	42	35	42
45 - 64 years	30	30	29	34	29
65 years and over	13	15	12	18	13
All patients (=100%)* ..	9,171	14,664	14,646	2,845	10,527
<i>Sex structure: May 1968</i>	%	%	%	%	%
Males	47	46	49	49	48
Females	53	54	51	51	52
All patients (=100%)* ..	9,178	14,764	14,660	2,846	10,547
<i>Total number of patients registered:</i>					
At start, May 1968	9,178	14,779	14,661	2,846	10,547
A year later, May 1969 ..	9,235	15,019	14,453	2,871	10,572
Number of patients who <i>left</i> † between May 1968 and May 1969 as a proportion of the total number registered at the start	9%	3%	4%	4%	4%
Number of patients who <i>joined</i> ‡ between May 1968 and May 1969 as a proportion of the total number registered at the start	9%	4%	3%	5%	5%
*Bases vary slightly from one part of the table to another because the age or sex was unknown for a few patients. These have been excluded when calculating the percentages.					
†Including deaths.					
‡Including births.					

TABLE B
AGE OF THE SAMPLES
 1968 (before transport started)
 1969 (after transport started)

<i>Sample</i>	<i>Experienced practice</i>	<i>Experimental practices</i>				<i>All practices</i>	
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>		
	<i>1968 and 1969</i>					<i>1968</i>	<i>1969</i>
<i>Elderly patients</i>	%	%	%	%	%	%	%
65 - 69 years	41	42	37	46	35	39	41
70 - 74 years	22	23	27	27	28	25	27
75 - 79 years	17	20	25	17	24	20	21
80 years and over	20	15	11	10	13	16	11
Number of patients (=100%) ..	119	105	153	153	127	337	320
<i>Children</i>	%	%	%	%	%	%	%
1 - 2 years	18	21	22	23	20	21	21
3 - 4 years	39	21	23	20	16	23	24
5 - 6 years	14	17	18	20	15	17	17
7 - 10 years	29	41	37	37	49	39	38
Number of children (=100%) ..	130	122	147	142	139	270	411
	<i>1969</i>					<i>1969</i>	
<i>Transport users</i>	%	%	%	%	%	%	
15 - 44 years	28	26	48	31	26	31	
45 - 64 years	23	18	23	35	36	27	
65 - 74 years	23	23	14	21	23	21	
75 years and over	26	33	15	13	15	21	
Number of patients (=100%) ..	73	70	81	52	73	349	

TABLE C
SEX OF THE SAMPLES
 1968 (before transport started) 1969 (after transport started)

<i>Sample</i>	<i>Experienced practice</i>	<i>Experimental practices</i>					<i>All practices</i>	
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>			
	<i>1968 and 1969</i>					<i>1968</i>	<i>1969</i>	
<i>Elderly patients</i>	%	%	%	%	%	%	%	
Male	40	41	39	48	36	49	41	
Female	60	59	61	52	64	59	59	
Number of patients (=100%) ..	119	105	153	153	127	337	320	
<i>Children</i>	%	%	%	%	%	%	%	
Male	42	53	47	50	54	51	49	
Female	58	47	53	50	46	49	51	
Number of patients (=100%) ..	130	122	147	142	140	270	411	
		<i>1969</i>					<i>1969</i>	
<i>Transport users</i>	%	%	%	%	%	%		
Male	34	34	46	35	41	38		
Female	66	66	54	65	59	62		
Number of patients (=100%) ..	73	70	81	52	73	349		

TABLE D
SOCIAL CLASS OF THE SAMPLES
 1969 (before transport started) 1969 (after transport started)

Sample	Experienced practice		Experimental practices								All practices	
	A		B		C		D		E		1968	1969
	1968	1969	1968	1969	1968	1969	1968	1969	1968	1969		
<i>Elderly patients</i>	%	%	%	%	%	%	%	%	%	%	%	%
Social class I and II	21	10	14	14	10	11	13	9	18	38	15	17
III non-manual	11	21	24	31	8	3	6	5	12	9	11	12
III manual	39	43	40	31	26	28	38	38	30	22	34	32
IV	21	22	16	18	53	54	37	28	38	25	35	31
V	5	3	6	4	3	4	3	19	—	3	3	8
Armed forces	3	—	—	2	—	—	3	—	2	—	2	—
Number of patients (=100%)..	56	58	50	49	76	74	78	72	60	62	320	315
	<i>1968 and 1969</i>											
<i>Children</i>	%		%		%		%		%		%	%
Social class I and II	13		22		7		11		23		17	14
III non-manual	11		25		5		4		5		7	11
III manual	54		44		55		57		44		52	50
IV	15		7		18		19		19		16	16
V	7		2		15		9		9		8	9
Armed forces	—		—		—		—		—		—	—
Number of patients (=100%)..	121		118		140		137		137		262	393
	<i>1969</i>											
<i>Transport users</i>	%		%		%		%		%		%	
Social class I and II	10		19		5		8		22		13	
III non-manual	13		13		5		6		7		9	
III manual	52		40		36		45		27		39	
IV	20		21		37		25		27		26	
V	5		7		17		16		17		12	
Armed forces	—		—		—		—		—		1	
Number of patients (=100%)..	67		68		78		49		70		334	

TABLE E
RESPONSE RATE AND REASONS FOR NON-RESPONSE
1968 (before transport started)
1969 (after transport started)

	<i>All practices</i>				
	<i>Patients aged 65 and over</i>		<i>Mothers of children aged 10 and under</i>		<i>Transport users</i>
	<i>1968</i>	<i>1969</i>	<i>1968</i>	<i>1969</i>	<i>1969</i>
<i>Number interviewed</i>	337	320	270	411	349
<i>Number not interviewed because:</i>					
Wrong age } ..	7	7	—	—	2
Not patient of practice } ..	2	2	2	6	3
Moved or not traced } ..	40	44	25	52	27
Dead } ..	11	35	1	—	15
Had not used transport } ..	—	—	—	—	17
Refused	80	85	18	30	16
Other (mostly because too ill)	22	21	2	3	16
Total number sampled ..	499	514	318	502	445
Response rate*	77%	75%	93%	93%	92%

*The response rate is calculated by taking the number interviewed as a percentage of the number sampled minus those who were erroneously included in the sample (bracketed on table).

APPENDIX 2

Methods and problems of data collection

Register of patients

This was set up with the help of the local executive councils using one small library card for each patient. Each card contained the patient's name, sex, date of birth and National Health Service number. For the duration of the data collection the cards were filed alphabetically and used for recording purposes. The secretaries were asked to keep the registers up to date by recording the date and reason for patients who left the practice and making out cards for new patients with the date of registration. When the data collection ended the information on these cards was put on to punch cards and used for the age-by-sex analyses of the practices.

Towards the end of the data collection it became apparent that not all the practices had been keeping the register up to date. But fortunately most of them had other records of patients leaving or joining the practice and they were able to use these to bring the register up to date. However, in practice B, some records were not retained and several staff changes meant that it was not always clear what had been recorded and what had been omitted. For this reason the numbers leaving and joining the practice may have been under-recorded.

The survey number

The survey number was an eight digit number made up of the patient's date of birth (two digits each for day and month and the last two digits for the year) and the last two digits of the National Health Service number. Patients born before 1868 were given XX in place of the year of birth. Private patients were identified by XX in place of the last two digits of the NHS number. This system of numbering had the advantage of containing the patient's age and of being obtainable from the patient's medical record. It thus avoided the necessity of giving each patient a completely new number.

Staff

In most practices the same staff were employed throughout the study; if there were changes the people who took over responsibility for the records had already been with the practice for a while and therefore knew something about keeping the records for the research. But in practice B there were several staff changes. Five different secretaries were responsible at different times for the record sheets and at least two drivers left. In January, 1969, the recording became so unreliable that some of the records had to be ignored for a period of five to six weeks. Fortunately the data collection in this practice was not impaired by staff changes over the two periods used for comparison.

The practice records

Record sheets for the study were designed with the view to replacing existing diaries and methods of recording but without disrupting those methods. For example before the study it was usual to have a diary in which to record requests for the doctor to visit and this could be replaced with the record sheet designed for the purposes of both the study and the practice. Similarly record sheets were designed to be used as lists of surgery attendances and for visiting lists. The practices varied in the extent to which they used these sheets for their own recording. Where they did not the information had to be copied onto the study record sheets which increased the chance of errors. Practice B made no use of the record sheets and all the data had to be copied from source onto these sheets. Practice D made the most use of the study record sheets and all the patients' names went straight onto them.

The records were intended to include all items of service carried out by locums and rota duty doctors at night and at weekends, but to exclude all items of service by the study practitioners for other doctors in the area. Sometimes it seemed that night and weekend work was not recorded fully but errors of omission were difficult to check. The records also excluded

temporary residents as these were not included in the patients' register. However, if temporary residents had used the transport service this was recorded but the numbers were very small—one per cent or less of all transport attendances.

Visits. It was felt that new visits were recorded accurately when the requests came into the surgery during the weekdays as then the ancillary staff had to record this in order to tell the doctor. Inevitably recording was less efficient in the evenings and at weekends. Recording of repeat visits depended upon the practitioners remembering to tell the ancillary staff that they had done them. Some doctors were more conscientious about this than others.

Drivers' records. The drivers recorded the number of people carried: they were divided into patients and escorts. But the number of patients recorded by the driver did not tally with the number of surgery attendances where transport was used, as recorded on the surgery sheets. In four practices the surgery sheets showed fewer patients using transport than the driver's record (by as much as 25 per cent in B, 17 per cent in A, five per cent in C and six per cent in E).* In practice D the two records tallied exactly. These discrepancies could have been because the driver recorded people as patients when they were in fact escorts; or he recorded patients who were not actually carried; or the practice did not indicate the patients as using transport on the surgery records. In practice E the total number of radio contacts recorded by the driver was less than the number recorded as acted on. Therefore these data were not used.

Diary week

There were problems with the professional diaries kept by the doctors in two of the six practices which kept diaries. In practice B, for both weeks, there were two or three part-time assistants or trainees. These doctors did few visits and had a disproportionate amount of personal time or time for study. Their data were omitted as it was felt it would distort the findings. Only two doctors recorded data adequately enough to be used both times; a third was on holiday over the first diary week but his data were used for some comparisons for the second week. The fourth doctor did not provide usable data. In practice D for both diary weeks the practitioner had a trainee with him. Data for both the practitioner and the trainee have been included for both weeks. Therefore neither diary week is representative of the work of the practice as it is normally run single-handed.

*There was no real improvement over time.

APPENDIX 3

The samples of patients

Sampling

Sampling for the elderly patients and the children was done from the alphabetic arrangement of the patients' register.* Samples of equal size in each practice were chosen in preference to proportional samples because of the wide variations in sizes of the practice populations. If practice D had a large enough sample the others would have been bigger than necessary, and proportional samples would have meant too small a number from practice D.

The executive councils were able to provide estimates of the number of patients aged 65 and over in the different practices and from this a sampling fraction for each practice was calculated to obtain 100 elderly patients in each. The cards were then counted by hand and data recorded from each *n*th card if the patient was over 65 years, and the card marked. Sampling for the children aged ten years and under was done in the same way except that the total number in each practice had to be estimated from national figures. This partly accounts for the variations in numbers in the total samples. Another reason for the variations was that 75 children were sampled the first year but the second year this was increased to a hundred. Addresses were obtained from the outside of the patients' medical record folders with the help of practice staff.

The following year the sampling fraction was adjusted to allow for those who had been interviewed the year before. When the second samples were taken the name on the *n*th card was not recorded if that patient had been interviewed the year before and the cards were counted until the next *n*th card was reached. Where siblings were sampled in the same year (so that a mother should strictly speaking have been interviewed about two different children) one child was rejected at random. This happened three times. Four mothers came up again the second year for a different child and these were interviewed again.

Sampling of the 'transport users' was done from the surgery records kept by the practices for the study. Each item of service was put onto a punch card and these were sorted into surgery attendances where transport was used between mid-May and the end of June 1969.† The cards were further sorted to obtain a pack of people and sampling for each practice was done from these. This meant that patients who had used the service on several occasions in these months had the same chance of being included in the sample as those who had used it only once. The limited summer period over which these patients were sampled meant that the 'users' were unlikely to be a truly representative sample of users of the service.

When the interviewers called they found that some of the patients said they had not used the service. Of 100 patients sampled in each practice one per cent in A, three per cent in B, six per cent in C, one per cent in D and six per cent in E said they had not used the service. For these patients no explanation could be found for this but probably the wrong name was recorded on the sheets—particularly in Wales and Scotland.

Age, sex, social class and the response rates for the samples

These details are given in the following appendix.

*See Appendix 2 for further details of patients' register.

†These months were chosen because they came at the start of the post-transport study period. Sampling any later in the period would have left too little time for interviewing. The numbers sampled for interview in practice D are small because of this time limitation and in fact included everybody over 15 years who used the service during the time.

APPENDIX 4

Patterns of use over two years: the data

Amount of use and effect on work

In all practices (except D) the number of patients using the service increased over time. But because there were changes in the total numbers of consultations the proportion of transport attendances increased over the two years in practice A only. In practices B, C and E the proportions remained steady.

TABLE F
TRANSPORT ATTENDANCES AS A PROPORTION OF ALL CONSULTATIONS

	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
First six months of new services	5% (18,068)	3% (20,991)	6% (29,431)	7% (6,719)	2% (10,620)*
Second six months of new services	5% (16,659)	3% (19,407)	7% (26,737)	6% (6,304)	3% (18,363)
Third six months of new services	7% (18,214)	3% (26,781)	6% (33,908)	4% (6,667)	3% (25,444)
Fourth six months of new services	8% (15,563)	3% (22,555)	6% (30,195)	4% (6,296)	3% (20,986)

The figures in brackets are the number on which the percentages are based. *2½ months only.

In practice B the figures mask an improvement in the way the service was organized. This is because the figures for the first year are for a full-time service, but during the second year the service was part-time. The following table shows that the average number of patients carried per half day increased considerably in practices A and B.*

TABLE G
AVERAGE NUMBER OF PATIENTS CARRIED PER HALF-DAY

	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
First year of new services ..	6.2	2.3	6.5	2.7	2.1*
Second year of new services ..	8.8	4.7	5.7		2.7

The bases for the averages were calculated by multiplying the number of half days the service operated in a week by the number of weeks. The bases varied between 10 × 36 and 11 × 52 half days in a year.
*First 8½ months.

There were no consistent changes over the two years in the effect of the service on the

*This was based on half days to make the data comparable for part-time and full-time services and to allow for Saturday morning services in some practices. Unfortunately the data were collected in such a way that a t-test could not be done.

numbers of home visits. As a proportion of all consultations home visits decreased in two practices (C and E), increased in two practices (B and D) but remained the same in the experienced practice. Similar fluctuations occurred in the control practices.

TABLE H
HOME VISITS AS A PROPORTION OF ALL CONSULTATIONS

	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
First year of new services (mid-November 1968 to 1969)	18% (34,727)	12% (40,398)	14% (56,168)	7% (13,023)	58%* (44,053)
Second year of new services (mid-November 1969 to 1970)	17% (33,777)	15% (49,336)	13% (64,103)	8% (12,963)	54% (46,430)
		<i>Control practices</i>			
		<i>F</i>	<i>G</i>	<i>H</i>	<i>J</i>
First year (mid-November 1968 to 1969)		28% (29,791)	19% (20,687)	17% (7,234)	8% (12,264)
Second year (mid-November 1969 to 1970)		28% (32,178)	17% (22,260)	20% (7,315)	8% (12,240)
The figures in brackets are the numbers on which the percentages are based. *First 8½ months.					

Changes in use

Over time proportionally fewer transport attendances were arranged when the patient requested a new visit from the doctor. Data from the experienced practice strongly support this trend as the proportions are lower for this practice than in three of the practices with new services.

TABLE I
TRANSPORT ATTENDANCES ARRANGED WHEN THE PATIENT REQUESTED A NEW VISIT AS A PROPORTION OF ALL TRANSPORT ATTENDANCES

	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
First six months of new services	73% (960)	84% (576)	83% (1,906)	68% (468)	63%* (194)
Second six months of new services	66% (865)	82% (650)	84% (1,729)	60% (370)	52% (562)
Third six months of new services	55% (1,354)	62% (786)	79% (2,023)	78%** (295)	54% (556)
Fourth six months of new services	41% (1,269)	59% (598)	69% (1,776)	64% (224)	49% (599)
The figures in brackets are the numbers on which the percentages are based. *2½ months only. **When practices C and D first started to share a bus practice C recorded these data for practice D. There were some errors in communicating the data and this may have distorted the picture. After four to six weeks practice D recorded data for their own patients and errors no longer occurred. The trend is not significant for practices D or E.					

The mileage and costs per patient carried

TABLE J
THE AVERAGE MILEAGE PER PATIENT CARRIED

	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
First year of new services ..	3.7 (1,826)	7.6 (1,229)	3.8 (3,643)	6.4 (840)	19.8 (760)
Second year of new services ..	2.7 (2,623)	3.5 (1,384)	3.5 (4,414)		18.2 (1,294)

TABLE K
THE AVERAGE COST PER PATIENT CARRIED

	<i>Experienced practice</i>	<i>Experimental practices</i>			
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
First year of new services ..	£0.36 (1,826)	£1.25 (1,229)	£0.35 (3,643)	£0.90 (840)	£1.65 (760)
Second year of new services ..	£0.36 (2,623)	£0.59 (1,384)	£0.43 (4,414)		£1.25 (1,294)

The data in tables J and K were not in a form which enabled t-tests to be done. The figures in brackets are the numbers of patients carried.

APPENDIX 5

Layout of tables and statistical significance

Layout of tables

When percentages in a column are based on the same base number and are comprehensive (therefore adding up to 100 per cent—or more than 100 per cent in the case of multi-coded classifications) there is a single % sign at the head of the column. The number on which the percentages are based is given at the foot of the column and labelled on the left-hand side of the table with an indication that it is the base (=100%). When the percentages in a column are not based on the same number or when the categories are not comprehensive (that is some items do not fall into any of the categories listed) then a % appears after each number. In this case the bases for the percentages are given in brackets next to the percentages. When inadequate information was obtained about a number of items these are excluded in calculating percentages and excluded from the base. Only small proportions were generally omitted for this reason.

Statistical significance

Chi-square and chi-square trend tests, t-tests and tests of the difference between two proportions have been applied constantly when looking at the data. They have influenced decisions about what differences to present and how much verbal 'weight' to attach to them. In general, attention has not been drawn to any difference which statistical tests suggest might have occurred by chance five or more times in 100.

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