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THE ROLE OF THE GENERAL PRACTICE PHARMACIST  
IN COMMUNITY HEALTH CARE

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## SUMMARY

The Role of the General Practice Pharmacist in Community Health Care

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The general practice pharmacist's advisory role in association with the supply of medicines for which advice has been sought has been investigated. The need for and the use of self medication has been discussed.

Preliminary studies were undertaken to investigate the extent of the general practice pharmacist's active involvement in self medication as an adviser to the customer rather than the limited role of a passive supplier of medication. These studies lead to a national survey of pharmacies in order to quantitatively assess the extent of the pharmacist's advisory role. Different types of pharmacy were distinguished in order (a) to establish the representative nature of the sample, and (b) to identify any differences between them.

The quality of the general practice pharmacist's advice was assessed by a survey of customers/clients who had received advice. The symptoms presented and type of advice given were collated with the client's own assessment of the pharmacist's advice.

Both surveys have helped to quantitatively evaluate and affirm the extent of the pharmacist's advisory role and its acceptability by the general public. The pharmacist's skills and education needs for this aspect of his professional work are discussed and suggestions for future investigation are made in order to develop further the general practice pharmacist's contribution to the community.

KEYWORDS: Counter-prescribing, self-medication, general-practice-pharmacy,

THE ROLE OF THE GENERAL PRACTICE PHARMACIST IN COMMUNITY HEALTH CARE

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CHAPTER 1

INTRODUCTION

## INTRODUCTION

The practice of pharmacy has for many decades been involved with the supply of medicines to the general public for self medication and the treatment of minor ailments. The days are gone when pharmacists were involved with compounding medicines and spending hours of their time making batch after batch of pills, suppositories, powders and emulsions. The pharmaceutical industry has taken over the compounding of medicines and, as well as producing sophisticated and potent medication for the treatment of serious illness, it has also produced well formulated and effective home remedies. The pharmacist is greatly involved not only with the dispensing and supply of the wide range of sophisticated and potent medicines available but also in an advisory role both to the prescriber and to the patient. In the traditional retail practice of pharmacy the pharmacist is also involved with the supply of medicines for the treatment of minor ailments and self medication, and in this field the pharmacist's advice is also sought. It is this advisory role of the general practice pharmacist that this investigation attempts to assess.

### Pharmacists and the Distribution of Medicines

As recently as 1974<sup>(1)</sup> it was suggested that there was an absence of research into the nature of and the amount of work a pharmacist could or should undertake, and that the pharmacist's role is underexploited. Suggestions to develop the pharmacist's role include the provision of community health screening, advice on self medication and general health education. This was more recently confirmed in the Pharmaceutical Society's Working Party Report on the practice of pharmacy.<sup>(2)</sup>

In the Office of Health Economics 1964 report "The Pharmacist in Society"<sup>(3)</sup> it was stated that the pharmacist, having inherited the mantle of their tradesmen predecessors of the late nineteenth century, must give up handling non-pharmaceutical goods personally, so that he can devote sufficient time to pharmaceutical matters, otherwise his place in the area of health care may not be recognised. The report suggested that the pharmacist has an important part to play in distributing and advising on non-prescribed medicines.

Five years later "Medicines in the 1990's"<sup>(4)</sup> was the title of another study by the Office of Health Economics in which a three tier network for the retail distribution of medicines was predicted:

- (1) Pharmacies mainly for the dispensing of prescriptions, located in or near health centres.
- (2) Pharmacies mainly for the sale of non-prescription medicines but with some dispensing.
- (3) Non-pharmacies for the sale of free list medicines.

This pattern of distribution has begun to become apparent at the beginning of the 1980's. From February 1st 1980 general sale list medicines are available from non-pharmaceutical outlets while other medicines, except prescription only medicines, are available for sale only from pharmacies. The Medicines Act of 1968 made provision for a general sale list (GSL) and prescription only medicines list (POM) to be compiled, so that all medicines not on either of these lists are pharmacy only. It can be argued that, because of the lack of an active compilation of a pharmacy only medicines list, the range of medicines available only to pharmacists has become far too restricted. It was suggested in the study of 1969<sup>(4)</sup>

that more potent medicines may become available for supply from pharmacies only for use in self medication. Although the predictions made in this study have clearly begun to become apparent, it seems that the pharmaceutical profession has failed to exercise much influence over decisions which affect the practice of pharmacy.

### The Need for Self Medication

Is self medication desirable and should it be encouraged or curtailed? In a report of the Royal Commission on Medical Education in 1968<sup>(5)</sup> the following sentiment was expressed: "when adequate arrangements for health education and prophylaxis have been established, the typical patient of the future can be expected to take more responsibility for the management of trivial and self limiting complaints provided he is given the necessary encouragement and guidance by the medical profession!" It was stated in an American study in 1970<sup>(6)</sup> that self treatment for minor ailments was very important otherwise doctors would become swamped and the quality of medical care reduced. The capability of people for treating some of their illnesses was confirmed in a Federal Drugs Administration pamphlet entitled "The Use and Misuse of Drugs", where it was also stated that it was good for people to be self sufficient if they have full information about the product they plan to use for treatment.

At a conference held by the Royal Society of Medicine in 1974<sup>(7)</sup> the Panel on Self Care suggested that certain drugs should be more freely available provided there was a clear indication of the point at which self treatment must stop and medical advice sought, and it also recommended that controlled trials on self medication be constructed.

In 1974<sup>(8)</sup> one prominent pharmacist saw self medication as a necessary evil and his aim as a pharmacist in practice was to "protect the public from themselves" and "the wiles of the drug industry". In a report<sup>(9)</sup> contrasting the views of this pharmacist with those of a philosopher it was shown that there was agreement between them on the widespread and erroneous view that there was a medicine for all ills although well labelled packs of effective medicines freely available for family use were of potential value. The philosopher, however, suggested that all effective medicines could be designed and packaged for self use, but it appeared that there was less concern for widening the accessibility of medical care than with breaking the monopoly of treatment by the medical profession. These are perhaps extreme views with, on one hand, a pharmacist reluctantly supplying non medically prescribed medicines, and on the other, a politically motivated philosopher wishing to break what he considers to be a monopoly, but they indicate an interesting attitude on the usefulness and desirability of self medication. The medical profession widely accept that self medication is a practical reality and has a role to play in the health care of the nation.

#### Surveys on Self Medication

A number of surveys have been conducted during the past twenty years on the incidence of self medication. In 1960,<sup>(10)</sup> in a study carried out on a post war housing estate, it was shown that 25% of the people interviewed had taken a prescribed medicine in a four week period while 66% had taken a non-prescribed medicine. 40% of the adults, and 20% of the children, had taken some form of aspirin or pain-killer purchased without a prescription, and 25% of children had been given a non-prescribed laxative. Throat and cough medicines and sweets

had frequently been given to children. The number of children being given nonprescribed laxatives seems alarmingly high and appears to indicate a lack of education of the parents and highlights an area where advice from the pharmacist could be of value.

In 1965<sup>(11)</sup> a medical student questioned two hundred and seven patients at a London Teaching Hospital and found that 80% of patients used self medication. 68% of these were treating acute symptoms and 27% were treating chronic symptoms. This larger proportion of people who were self medicating was rather to be expected in this study since as in-patients they were a less healthy group than the people on the housing estate in the previous study.

More than two thousand people were interviewed in a National Opinion Poll commissioned by a pharmaceutical company in 1966<sup>(12)</sup> and it was shown that 71% of people with complaints were treated, one third by doctors and two thirds by themselves, which confirmed the incidence of self medication within the community shown in the study six years earlier.

A general medical practitioner in 1976,<sup>(13)</sup> wrote a commentary on self treatment in which he suggested that the total demand for medical advice could be reduced by encouraging instructed and intelligent self treatment by patients. The treatment should be on a symptomatic basis and instruction could be given in the press, on television and in pamphlets issued with the drugs. It was suggested that Oxytetracycline should be made available with suitable instructions for use because, even though it may be unscientific to use a broad spectrum antibiotic without bacteriological investigation, general medical practitioners had been using tetracyclines in that way for years. However, one thing sadly lacking from this report is the role and contribution that the pharmacist already has and might extend, in the context of self treatment.

"Most people resort to occasional self medication. We all need to be able to relieve headaches, ease sore throats, counteract hangovers, disinfect boils or soothe insect bites without seeing a doctor."<sup>(14)</sup> The Which Report on Self Medication in 1967 confirmed that despite free medical services available under the National Health Service the public are still prepared to treat their own minor ailments.

In a study of the role of self medication in 1968 by the Office of Health Economics "Without Prescription"<sup>(15)</sup> it was shown that approximately one third of the money spent on medicines in the United Kingdom at that time was for medicines bought without prescription. It was stated in the report that self treatment should become complementary to rather than competitive with professional medical care, and that the pharmacist can play a substantial role actively recommending well formulated and effective home remedies while also advising customers when it is important or essential to seek medical advice.

A medical practitioner in his introduction to a survey of people in the London area in 1968<sup>(16)</sup> stated, "The naive student of medicine might imagine that, with the health services freely available, people would take their symptoms direct to the National Health Service. But it will be shown that from the results of a survey carried out among the people living around Guy's Hospital in Bermondsey and Southwark that we doctors overrate ourselves. In fact people use the chemist far more than we might care to imagine. The reasons, it will become plain, are because it is easier to make a self diagnosis of a symptom and try to treat it from the goods on sale on the counter than to submit to the waiting time, the crisp interrogation and perhaps the physical examination by the doctor, with all its attendant risks of incarceration in hospital for an underdeterminant time for investigations -



venae punctures, X-rays, and all manner of other unpleasant prospects." In the survey, of two thousand five hundred people, it was shown that approximately half of those people suffering from complaints were taking some form of medication, two thirds using lay remedies and one third taking prescribed medicines. It is stated in the report that it is most important to obtain, at the earliest moment, the co-operation of general practice pharmacists. A very large amount of self diagnosis and self prescription has taken place and will continue to take place in pharmacies although a great deal more could be done. In a later publication, Health and Sickness, The Choice of Treatment<sup>(17)</sup>, the same author, with others, confirmed the relationship of the use of two non-prescribed medicines to one prescribed medicine.

It has been shown in a number of surveys<sup>(16)(12)(19)</sup> that only 25% of illness is finally dealt with by a doctor. Those patients who consulted their doctors about their illness formed the basis of a one thousand patient survey in 1973<sup>(20)</sup>. 52% of patients practised self treatment. The survey, however, went much further to determine the incidence of self medication. The advice given to patients about their medical treatment was analysed. Five pharmacists had been questioned by the author and had agreed that about 10% of their customers came for advice. The analysis showed that the soundness and acceptability of advice given by pharmacists ranked higher than any other group. About 5% of all advice sought was harmful and originated most often from magazines books and television and least often from pharmacists.

These surveys confirm the well established practice of self medication and indicate that there is approximately twice as much self medication as prescribed medication. The forecast number of prescriptions in 1980<sup>(21)</sup> is three hundred and thirty one million which would indicate

that there would be six hundred and sixty two million sales of medicines for self treatment in the same period. Following the end of the transition period on February 1st 1980 for the implementation of the Medicines Act restriction to some medicines formerly available for general sale, pharmacies have increased their sales of some pharmacy only medicines. Although some of these surveys have identified the role of the pharmacist in self medication, they have not been conducted to specifically investigate that role.

#### SURVEYS OF THE PHARMACIST'S ROLE

It was the intention of this investigation to analyse in detail the advisory role of general practice pharmacists particularly in respect of self medication and the treatment of minor ailments. There has been very little previous research in this field.

In 1967 twenty retail pharmacies were investigated in eight towns in England<sup>(22)</sup> and records were made relating to all customers requesting medical advice. Over a two day period there were six hundred and sixteen requests for advice in the twenty pharmacies, i.e. 15.4 per pharmacy per day. Just under 6% of these cases was referred by the pharmacist to doctors to seek medical advice. It is interesting to compare these consultation rates at the pharmacies with those expected by the average general medical practitioner<sup>(23)</sup> (Table 1).

#### CONSULTATION RATES OVER TWO DAYS

<u>Symptom</u>	<u>Medical Practitioner</u>	<u>Pharmacist</u>
Upper Respiratory Tract	4 new cases	12 Advice Requests
Gastro Intestinal Upset	2 new cases	3 Advice Requests
Skin Disorder	4 new cases	7 Advice Requests

TABLE 1

More women than men were found to seek advice from the pharmacist and the general conclusion from the survey was that the service given by the pharmacist to the public is valuable and one which saves the general medical practitioner a considerable amount of work.

It was shown more recently, 1976<sup>(24)</sup>, in a study conducted to analyse the communication between pharmacist and customer when information about drug treatment is being sought or given, that two customers an hour sought the advice of the pharmacist about non prescribed medicines. No claims as to the representative nature of the sample were made since only five small independently owned pharmacies were used to record details of requests for advice, but the analysis does show an interesting trend. The investigator had made the recordings by being present in the pharmacy when the advice was sought.

In another investigation about the Advisory Role of the Pharmacist<sup>(25)</sup> observations were made in ten pharmacies divided between town, suburban and rural locations over four days. It was shown that ten queries for pharmacy per day were recorded, 62% being answered by the pharmacist and 38% answered by assistants.

It was concluded in a study in 1975<sup>(26)</sup> that the advice and recommendations given in pharmacies were usually good but better quality help was obtained from the pharmacist rather than an assistant.

In a report from the Office of Population Censuses and Surveys for the purpose of compiling the General Household Survey in 1977<sup>(27)</sup> it was indicated that under 2% of people with short term ill health problems sought the advice of a pharmacist in a two week period before the survey. No numerical value was given but assuming a population of five thousand people per pharmacy this would represent between four

and five patients per pharmacy a day. It is difficult to understand the significance of this finding but the low incidence of advice requests may be explained by the fact that it was a survey of people with short term ill health problems rather than the population as a whole. Nevertheless, the survey prompted a correspondent to the Pharmaceutical Journal<sup>(28)</sup> to express surprise at the results because he had observed, on a Saturday, in his own pharmacy requests for advice from eleven people.

The observations made in these surveys were carried out in between one and twenty pharmacies and none claimed to present a representative picture of the advice requests made in general practice pharmacies. They do provide an interesting base on which to mount a more detailed investigation, firstly by using a large enough sample of pharmacies to make the results truly representative and secondly to record all requests for advice from general reassurance to more detailed questioning and help with the decision whether symptoms suggest that it is necessary or more appropriate to consult a doctor.

Observations made in other countries<sup>(29)</sup> support the findings of these surveys in showing that the pharmacist is a frequently used source of information about over-the-counter medicines and the treatment of minor ailments. In an American study in 1975<sup>(30)</sup> it was shown that 27% of consumers had discussed over-the-counter products with the pharmacist; while in a survey of requests made by retail pharmacy clients in Australia<sup>(31)</sup> it was shown that 15.6% of clients surveyed had requested advice on a wide range of symptoms, most of them relating to the respiratory system, and a proprietary medicine had been sold on 52% of occasions that advice was requested.

It is relevant here to briefly discuss the development of pharmacy and pharmacy practice in Britain in order to understand and critically investigate the direction in which the future of pharmacy practice best lies.

#### THE HISTORICAL EVOLUTION OF PHARMACY PRACTICE

Two thousand years ago the practice of medicine was based on the practices of Greek classical authors and there was no real separation between a physician and a gatherer of herbs and preparer of remedies.

A fresh impetus into medicinal learning came from Europe after the Norman Conquest. Physicians came under the influence of Arabic medicines so that specialised merchants became involved in the importing and distribution of Eastern plants and herbs.

The apothecary was a merchant who had become involved in the distribution and preparation of medicinal products, and in the fourteenth century they, together with the physician and surgeon, were given the duty of looking after the bodily health and diet of the King and his household.

In 1617 James I granted a charter to the apothecaries because it was thought that there were too many unskilful and ignorant men making unwholesome, hurtful, deceitful, corrupt and dangerous medicines. The Society of Apothecaries was formed so that the practice of the apothecary could be better controlled by apprenticeship and examination.

The apothecaries dispensed for the physician, but in the seventeenth century there were not enough physicians to satisfy the medical needs of the population, so that people often sought the apothecary when they wanted medical attention. The apothecary gradually became

established as the adviser, prescriber and supplier of medicines while the physician remained rather too exclusive for a large proportion of the population.

The physicians attempted to curb the prescribing practice of the apothecary. The College of Physicians opened their own dispensaries in London hoping that this would reduce the activities of the apothecaries but it had little effect. However, in 1703 the College of Physicians successfully prosecuted an apothecary for practising medicine by prescribing in contravention of the Medicine Act of 1542. The House of Lords subsequently reversed the decision of the lower court ruling that it was in the public interest to allow apothecaries to advise as well as compound and sell medicines, as long as they did not charge for the advice.

The Apothecaries Act of 1815 confirmed the role of the apothecary and allowed them to charge for advice. The apothecaries had, in 1794, formed the General Pharmaceutical Association of Great Britain and had attempted to restrict the dispensing and sale of all medicines to apothecaries because they had become so much involved with the practice of medicine that persons known as chemists and druggists had begun to take over the role of compounding and selling medicines. The 1815 Act, however, protected the business of the chemist and druggist in the buying, preparing, compounding, dispensing and vending of drugs, medicines and medicinal compounds.

Chemists and druggists held no qualification and undertook no training and there was no check on the work they did. They were vulnerable to the consequences of allegations of practising as apothecaries. In 1841 the Society of Apothecaries prosecuted a

druggist for acting as an apothecary by counter prescribing. The prosecution failed in the lower court where it was held that the druggist was covered by the protective clause of the 1815 Act. On appeal by the Society of Apothecaries the decision was reversed because it was ruled that while the 1815 Act operated to safeguard the trade or business of a chemist or druggist, it was not an authorisation to prescribe. This kind of prescribing had been going on for years by chemists and druggists but they were not organised like the apothecaries who, over one hundred years previously, had won the right to prescribe because they had formed themselves into a Society which controlled standards of practice.

Many chemists and druggists realised that to attain recognition by the community they must undertake systematic education. Jacob Bell organised a meeting of chemists and druggists in London on 15th April 1841 to adopt the resolution:

"That for the purpose of protecting the permanent interests and increasing the respectability of chemists and druggists an Association be now formed under the title of The Pharmaceutical Society of Great Britain."

Regulations were framed for the examination of members, success in which admitted them to the qualification of pharmaceutical chemist. This organisation of chemists and druggists was seen as a threat by the apothecaries and the Editor of The Lancet, from September to November 1841, continually attacked chemists and druggists by pointing out the dangers of unqualified and unskilled prescribing.

The first chemist and druggist candidates were tested in 1842 and the Pharmaceutical Society was granted a Royal Charter in 1843. The

Society was subsequently given the responsibility for the training, examination, registration and discipline of chemists and druggists as well as for the enforcement of legislation controlling the sale of poisons.

Most apothecaries continued to practice pharmacy as well as their evolving role as general medical practitioners. Some continued to only practice pharmacy. The 1911 National Insurance Act recognised the role of chemists and druggists as dispensers by giving them the responsibility for the supply of most of the prescription medicines for those treated under the Act. This role was extended in 1948 to virtually the whole of the population by the National Health Service Act of 1946.

'Pharmacist' is now the title most commonly used by members of the Pharmaceutical Society, and registration as a pharmacist is only by way of a University or College degree in pharmacy followed by one year pre-registration training.

Pharmacists have been granted the generally exclusive right to sell medicinal poisons for human use and have been recognised as the dispensers of medicines, but since the Charter of 1843 they have always seemed to have faced problems in maintaining and enhancing their role. Retail pharmacy has only been able to survive by subsidising professional activities with the profit from other non-pharmaceutical activities. Since the therapeutic revolution which has gradually gained momentum since the 1920's the pharmaceutical industry has largely taken over the role of compounding, preparing and presenting medicines so that the physical aspects of dispensing today usually involve little more than re-packaging pre-prepared formulations and could eventually involve the distribution of pre-prepared unit packs. However, the therapeutic revolution has brought onto the market many potent medicines,



often sophisticated formulations, for the treatment of serious illness, so that the pharmacist today must concern himself with such things as patient compliance, bio availability, drug interaction and side effects. The multiplicity of preparations available now has led to problems for the medical profession and public and a drug adviser to both is clearly becoming essential. Pharmacy is attempting to fulfil that role and the community pharmacist today is becoming more clinically involved with patient treatments. All medicines were required to be licensed by the recent Medicines Act of 1968. The counter prescribing role of the pharmacist has been recognised in the Medicines Act in that exemption from a product licence has been granted for a medicine which has been prepared by the pharmacist for an individual patient who is present in the pharmacy.

From some observations, studies and surveys of the role of the pharmacist in practice, their analysis and discussion have developed the concepts which lead to this investigation of pharmacy practice.

#### THE ROLE OF PHARMACY PRACTICE

It was stressed in a presentation to the British Pharmaceutical Conference in 1964<sup>(32)</sup> that the pharmacist must be willing and able to guide the public in the wise use of medicines, but this advisory role could not be discharged if the pharmacist becomes too preoccupied with dispensing. It was also emphasised that the pharmacist has no training in diagnosis and should limit himself to offering advice for the temporary relief of symptoms of minor ailments so that the service he provides is complementary to that given by medical practitioners. It is felt that these sentiments could well be accepted by the profession although they evade the issue of the predicament that pharmacists in practice can find themselves in when having to decide

whether a certain set of symptoms constitute minor ailments or something more serious. That kind of decision may put the pharmacist into the category of a diagnostician.

The author of a study on the economic future of the pharmacist in 1964<sup>(33)</sup> presented a future of a steadily downward spiral for pharmacy unless members of the profession looked thirty years ahead instead of thirty years behind. The same author, three years later<sup>(34)</sup> stated that pharmacists were entering a "fools paradise" if they imagined that they could get legislative protection for their own interests unless these were clearly seen to be in the public interest. It was pointed out that pharmacists must show how the public and medical profession would benefit from their activities. This situation can be compared with that of the apothecaries who in 1703 were threatened with court action by the physicians over their right to prescribe. That right was upheld on appeal because it had been shown to be in the public interest.

In an American report on Medicine, Money and Manpower in 1967<sup>(35)</sup> it was stated that the pharmacist's future depended on his willingness and initiative in assuming large challenges and responsibilities, and it was suggested that the pharmacist should become a more active member of the health care team. The emergence of a three tier pattern in retail pharmacy was predicted in an American study in 1968<sup>(36)</sup>, and although it could not be the same as that predicted for the United Kingdom in 'Medicine in the 1990s,'<sup>(4)</sup> because of the existence of the National Health Service, there are similarities. The three types of retail pharmacy predicted in America were:

- (1) Professional
- (2) Business - usually in a large chainstore or neighbourhood store with a low prescription volume.

- (3) Business/Professional, either,
- (a) a neighbourhood store with a high prescription volume
  - or (b) a supermarket drugstore with a pharmacist restricted in one part of the store.

In a study in Australia in 1970<sup>(37)</sup> into the control of the distribution of over-the-counter preparations it was stated that customers who asked for unspecific medicines or who listed symptoms should be referred to the pharmacist because it is his responsibility to give advice. This emphasis on the pharmacist being the person responsible for giving advice was reiterated in the two studies discussed earlier.<sup>(25)(26)</sup>

In the United Kingdom in 1970<sup>(38)</sup> a leading politician who was concerned about the provision of pharmaceutical services suggested that some simple dispensing services might be provided by non-pharmacists. However, the responsibility of the pharmacist was emphasised by the then Secretary of State for Social Services when discussing the role of the pharmacist a year later<sup>(39)</sup> when it was stated that pharmacists were among the front line troops of the health team.

During the 1970's there has been the expectation that pharmacy will broaden its horizons and stretch its limitations so that more activities connected with medicinal products should be brought within its responsibilities. The movement of pharmacy to meet the current needs of health care involving drugs and drug information to patients and prescribers was emphasised in a report of the study commission on pharmacy in America in 1972.<sup>(40)</sup> The study called for a heavier emphasis in pharmaceutical education on the behavioural and social sciences and the establishment of a small body of clinical scientists.

The under exploitation of the pharmacist's role has been discussed<sup>(1)</sup> and it is true that pharmacists believe that they are often under-used in terms of the training they receive.<sup>(41)</sup> To them the practice of pharmacy as a profession seems to be a paradox because the pharmacist must act professionally on the one hand and as a business man on the other. These dual aspects of the pharmacist's role have resulted in pharmacy being termed a marginal profession.<sup>(42)</sup> Pharmacists, whether members of a marginal profession or not, seem to be slowly moving ahead and striving to become recognised as members of the team providing primary health care. Primary health care has been defined<sup>(43)</sup> as first contact care and the importance of this function is clearly established in everyday pharmacy practice. The role of the pharmacist in primary health care was studied in America in 1975<sup>(44)</sup> and it was affirmed that the pharmacist's background gave him the potential to become an effective member of the primary health care team. A sub-committee on Public Health and the Environment in America<sup>(45)</sup> discussed the pharmacist's lack of involvement in primary health care and it was concluded that pharmacists were the most improperly used national health asset. American pharmacists have been<sup>(46)</sup> asked about how they see their role and 80.6% of those pharmacists participating thought that the level of services provided by them was not adequate for the safety and convenience of their patients and they cited lack of economic incentives as being one reason. It is felt that the same reason for the lack of increase in the level of services in pharmacy applies in the United Kingdom. In 1978 a two card system for monitoring patient medication in general practice pharmacy was presented to the British Pharmaceutical Conference.<sup>(47)</sup> It was suggested that economic savings could be made resulting from the reduction in iatrogenic illness. However, as pharmacy practice is

remunerated at the moment in the United Kingdom, pharmacists would not be paid for operating such a system unless they financed the setting up and operation of the system themselves and established its relevance in patient care.

The general consensus of opinion is that pharmacists should become more patient orientated.<sup>(48)(49)(50)</sup> The patients' opinion of their neighbourhood pharmacist has been investigated<sup>(51)</sup> and phrases such as: "pleasant personal service", "courteous and attentive" and "accessibility and convenience" were recorded. A model for professional practice in Australia<sup>(52)</sup> suggested that the community pharmacist should practise patient counselling and maintain patient drug profiles. Further observations of the pharmacist's role in Australia have produced suggestions that the pharmacist should develop his advisory role and charge for his services,<sup>(53)</sup> and that the pharmacist should be able to use his discretion much more and should be able to supply a greater range of medication without prescription.<sup>(54)</sup> The development of the role of the pharmacist must obviously depend on the willingness and ability of the pharmacist to expand his role. The aspirations of six hundred and seventy pharmacists were surveyed in 1978<sup>(55)</sup> and it was shown that pharmacists would like to spend less time dispensing prescriptions and more time consulting with patients and communicating with physicians and other professionals on matters primarily relating to health. The pharmacists taking part in the survey indicated that they would like to spend less time handling the sales of non-pharmaceutical items. A working party on the future of general practice pharmacy<sup>(2)</sup> has recommended that consideration be given to the introduction of a limited counter prescribing service, within the National Health Service, by the pharmacist for patients registered with the pharmacist. It was suggested at the annual general meeting of the Pharmaceutical Society in

1979<sup>(56)</sup> that there was much that pharmacists could be doing, including the keeping of patient medication records and the monitoring of adverse drug reactions. However, concern was expressed that pharmacists should be seen to be attempting to take on the role of doctors by taking blood pressure readings.

The willingness of many pharmacists to extend their role is clear, but the areas into which that expansion should be directed is not. Historically the evolution and extension of the pharmacist's role has been chequered. In general practice his dual role as professional and business man may have been responsible for this slow advance. It could be argued that the pharmacist's workload prevents further expansion of their role, but in a study to understand the communication habits of pharmacists, especially with patients, in 1975<sup>(57)</sup> it was found that staffing levels were inversely related to the percentage of time that pharmacists spend communicating with patients, and the prescription volume had a moderately positive effect on the level of communication. In a survey of fourteen pharmacist managed pharmacies in Denver<sup>(58)</sup> the hypothesis that attitude to patients deteriorated as activity increased was proved false. It would appear, therefore, that active well staffed pharmacies would provide the right atmosphere for pharmacists to expand their function in primary health care.

Pharmacists may be willing to expand their role but their ability to do so must be examined. In 1964<sup>(32)</sup> it was stated that the education and examination of pharmacists does not equip them to proclaim any prerogative to prescribe medicines. There is an argument for extending the education of pharmacists to include behavioural and social science.<sup>(40)</sup> Many would suggest courses in therapeutics and pathology to be of at least equal importance. In the U.S.A. it has been suggested that there

is a case for two professional degree programmes in pharmacy<sup>(59)</sup> to produce,

(1) client orientated pharmacists involved with distribution and consultation on the proper use of prescription and over-the-counter preparations

(2) physician orientated pharmacists to act as advisers and counsellors to those who prescribe medicines.

The education and training of pharmacists affects the ability of pharmacists to change or expand their role in practice. The willingness of pharmacists to extend their role must be accompanied by an acceptance of an extension in their education to provide the necessary ability for the performance of that extended role.

In view of so many conflicting and diverse views and attitudes to the evolving role of the pharmacist it was considered essential to attempt to quantify the advisory role of the general practice pharmacist as it exists at the present time. Only from such a quantifiable basis can further meaningful investigations be made.

CHAPTER 2

PRELIMINARY INVESTIGATIONS



## PRELIMINARY INVESTIGATIONS

### Hypothesis

The hypothesis to be investigated was that, "The general practice pharmacist offers a significant amount of advice on self medication and the treatment of minor ailments in his service to the community."

General practice pharmacists today undertake a dual role. The majority of them are under contract with the National Health Service to dispense prescriptions issued by doctors and dentists contracted to the Health Service and although this is a full time contract it only represents up to two thirds of the total business in the average pharmacy. Approximately 20% of pharmacies in Great Britain are owned by large multiples where the proportion of National Health Service dispensing is usually a significantly smaller part of total business.

The dispensing of prescriptions for patients not in the Health Service, or from doctors and dentists not contracted to the Health Service, or from veterinary surgeons, together with the sale of medicines for human and animal use, toiletries, cosmetics and an assortment of other merchandise constitutes the remaining business undertaken by general practice pharmacists.

### Scope of the Investigation

It is the aim of this investigation to determine the advisory role of general practice pharmacists particularly in relation to self medication and the treatment of minor ailments.

There are several ways of establishing the amount of advice given in the pharmacy.

- (1) A researcher could be present in the pharmacy as an

observer so that when a patient/customer actively sought or was given advice details could be recorded. For one person to investigate in this way would mean, because of the limitations of time, that only a few pharmacies could be investigated and it would, therefore, be impossible to produce results that are representative of pharmacy as a whole. The recordings by such an observation could be affected by the bias of the observer, and the presence of an unknown person recording details of what a pharmacist was doing would increase that pharmacist's awareness of his advisory role and perhaps produce results which do not reflect the normal situation.

(2) To overcome the practical limitation of time available to one researcher tape recorders could be used in a number of pharmacies. It will be shown later that a large number of pharmacies need to be investigated in order to observe a representative sample of pharmacies so that the cost of such an operation would be a limiting factor.

The pharmacist would be required to switch on the recorder each time advice was sought or given but it is often not easy to establish that advice is about to be sought. The recording of conversations would again affect the pharmacist's awareness.

(3) A questionnaire could be handed to patients/customers from a number of pharmacies asking for details of when they ask for advice. A patient questionnaire is only useful when trying to assess the effects of advice given and initially it is the amount of advice given that is required to be recorded.

(4) A questionnaire to the pharmacist could be designed to record every sale of a medicine because it is felt that advice

is most likely asked for when the patient enters the pharmacy with the intention of purchasing a medicine. A record of each sale, whether advice was sought or not, could be made by the pharmacist or his staff and the recordings could be made in a large number of pharmacies. It is true that the awareness of the pharmacist is aroused because of the recordings, but mechanical recordings on a chart are less personal than the presence of an observer or the recording of a conversation.

The recording of such details was tried out as a pilot exercise in the author's own pharmacy. Over six one day periods between July and October 1975 records of medicine sales were made. The recording sheet was divided into two columns in order to distinguish between ordinary non-advised medicine sales (i.e. when no advice was requested when the sale took place) and advised medicine sales. The observed records are shown in Table 2.

RECORD OF MEDICINE SALES

	<u>NON-ADVISED SALES</u>	<u>ADVISED SALES</u>
DAY 1	37	7
DAY 2	28	8
DAY 3	18	4
DAY 4	21	6
DAY 5	21	5
DAY 6	21	5
	<hr/>	<hr/>
TOTAL	146	35
	<hr/>	<hr/>

TABLE 2

About 20% of the total sales were advised sales.

The type of medicine sold was recorded so that it was possible to distinguish the therapeutic groups for which medicines are purchased, see Table 3.

### TYPE OF MEDICINE PURCHASED

	%
Coughs and Colds	44
Analgesics	28
Alimentary Tract	15
Skins and rashes	5
Vitamins and tonics	2
Others	6

TABLE 3

Recording each medicine sale would be laborious for pharmacists in practice who might be persuaded to take part in such an investigation, and therefore a questionnaire or recording sheet had to be designed to be sufficiently detailed to record all the information requested but as simple as possible to use and make the necessary recordings.

#### Design of Questionnaire for Pilot Study

A number of factors could affect the amount of advice sought in a particular pharmacy. The questionnaire designed and the covering letter sent with it are reproduced in Appendix I. Section I of the questionnaire was included to determine the type, location and ownership of the pharmacy as well as the prescription throughput because all these factors could affect the amount of advice sought. Section II illustrates the recording sheet used for the collection of details of medicine sales. The types of medicines were sectioned into rows and each row was sectioned to facilitate the recording of either a non-advised sale or an advised sale. It was realised that advised sales may take a number of forms. The preliminary investigation in the author's own pharmacy had only recorded the sale of medicines over the counter and had taken no account of the individual making up of medicines or of those occasions when the patient was advised to seek medical advice. The advised sales section was therefore further divided

to distinguish between the types of advice sought, thus:

- (i) proprietary medicine sale
- (ii) counter presented sale - meaning the making up of a medicine by the pharmacist
- (iii) refer to seek medical advice

It was hoped that this recording would be easy and quick for the pharmacist and his medicine counter staff since it involved recording one mark in each section at each sale, and that the sub-divisions would give a clearer indication of the extent of the pharmacist's advisory role.

Section III was added to record the prescription throughput on the day of the survey in case the volume of prescriptions had any bearing on the amount of advice sought. A covering letter was sent out with the questionnaire and recording sheet explaining to the pharmacist the object of the survey and asking them to make the recordings on a particular day. Twenty six colleagues attending a branch meeting of the Pharmaceutical Society were persuaded to take a questionnaire to form the pilot study.

#### Results of the Pilot Study

Ten of the twenty six questionnaires and recording sheets distributed were returned completed, that is a 38.5% response. Nine pharmacies classified themselves as traditional, that is an equal balance between dispensing and over the counter sales, and the remaining one as dispensing only, that is dispensing more than 80% of the business.

Eight pharmacies were suburban and two were town centre.

Five pharmacies had a prescription throughput of 24,000 to 48,000

items per annum, two of 12,000 to 24,000 items per annum and two over 48,000 items per annum (one pharmacy did not respond).

Five pharmacies were owned by a single proprietor, four by small multiples, that is less than ten shops, and one by a large multiple.

It is shown in Table 4 that five hundred and seventy two medicine sales were made of which one hundred and one (17.6%) were advised sales.

#### MEDICINE SALES IN PILOT STUDY

	<u>Non-Advised Sales</u>	<u>Advised Sales</u>	<u>Total Sales</u>
Ten Pharmacies	471	101	572
Average Pharmacy	47.1	10.1	57.2

TABLE 4

Numerically the average pharmacy made forty seven non-advised and ten advised medicine sales per day, although the range of non-advised sales were from nine to one hundred and six and the range of advised sales was from five to twenty.

#### Discussion of Results

To draw definite conclusions from the results obtained would be statistically inappropriate with such a small number of subjectively chosen pharmacies, however several interesting observations were made and are discussed.

- (1) On average five of the ten advised sales per pharmacy were for a medicine made up by the pharmacist, four were for a proprietary medicine and one was a referral to seek medical advice.

(2) The dispensing only pharmacy, which had a prescription throughput of over 48,000 items per annum recorded almost average non advised medicine sales (45) but recorded seventeen advised medicine sales, 70% more than the average, which would seem to indicate that a high prescription turnover, rather than reducing the amount of advice sought because of the availability of the pharmacist, actually increases the incidence of advice sought. The number of items dispensed by this pharmacy on the day of the survey was recorded and there were two hundred and thirty one against the average number of one hundred and nineteen items. This observation is emphasised by the single proprietor pharmacy who dispensed two hundred and ten items and recorded twice as many advised sales than the average.

(3) There were two town centre pharmacies, one a large multiple which recorded more than twice the average non advised sales, and one a small multiple which recorded about average non-advised sales with the advised sales being about average in both.

(4) Four of the five single proprietor pharmacies recorded below average non-advised sales but recorded average or above average advised sales thus indicating a higher proportion of advised sales to total medicine sales. A larger proportion of these advised sales in single proprietor pharmacies were recorded to be medicines made up by the pharmacist.

(5) With such a small sample it was difficult to assess any significant difference in recordings made on different days. However, it was noted that recordings made in one pharmacy open for only half a day showed very low total medicine sales, while two pharmacies recording on a Monday and one recording on a

Saturday showed low advised sales. It was, therefore, considered that to make the recordings more equable any further survey should request the recordings to be made between Tuesday and Friday on a day which is not the half day.

Experience from the pilot study was invaluable in the redesigning and improvement of the questionnaire and recording sheet before they were ready for distribution to a national sample of pharmacies.



CHAPTER 3

NATIONAL SURVEY OF PHARMACIES

## NATIONAL SURVEY OF PHARMACIES

Several previous surveys to investigate the general practice pharmacist's advisory role have invariably made recordings in no more than twenty pharmacies with little attempt to include different types of pharmacy situated in different types of location. For this investigation to be of value the sample of pharmacies taking part had to be representative of the pharmacies which provide the pharmaceutical services. Experience from preliminary investigations showed that the pharmacists' responses to advice requests ranged from reassurance to detailed investigation of symptoms. Recordings necessarily attempted to include the responses to all types of requests.

### QUESTIONNAIRE DESIGN

Much attention was paid to the design of the questionnaire and recording sheet in an effort to ensure the maximum response and recording of advice requests. The recording sheet, see Appendix II, was slightly modified from the one used in the pilot study, which although it had proved adequate, could be slightly simplified and clarified. Fewer classes of medicine were listed by combining 'stomach problems' and 'bowel problems' under the one heading of 'alimentary tract', and including the 'allergies' class in with the 'skin rashes' class. The basic design of the recording sheet remained the same with two columns for A) recording normal or non-advised sales and B) recording advised sales. The advised sales column was similarly sectioned to record the type of advice given. The term counter prescribing has, in recent years, come to mean the recommendation by a pharmacist, using his professional judgement, of the best available medicine to treat a particular symptom described by a customer rather

than just the making up of a medicine. In retrospect it would appear that to use this term in section (ii) of the advice column might have been slightly misleading, however the term was clearly defined and restricted to the making up of a medicine in the dispensary in the notes for guidance sent with the questionnaire (Appendix II).

To simplify the recordings to be made each section contained blocks of numbers so that on the first sale a cancellation line would be put through number 1, on the second sale a line would be put through number 2 and so on. No attempt had been made in the pilot to record advice requests on general health guidance such as matters of hygiene and diet, where a sale of a medicine is often unlikely. This omission was rectified by including a new section at the bottom of the recording sheet.

The questionnaire, see Appendix II, was divided into two sections. Section II was designed to establish the type, location and ownership of the pharmacies taking part in the survey. The pilot study questionnaire had included a request for prescription throughput figures. It was considered that this figure could have no possible bearing on the interpretation of the results and was therefore omitted. The only prescription workload figure which might affect the amount of advice requests was the number of prescriptions dispensed when the survey was made, and this figure was requested in Section III of the questionnaire. This third section was included so that advice offered by or requested from the pharmacist with dispensed medicines could be recorded.

In order to reassure responders and prevent the response rate from being diminished the questionnaire was not numbered and no provision was made for including the name and address of the pharmacy.

Total anonymity of the details given was emphasised. It is recognised that the main disadvantage of anonymity is the prevention of any follow up of either the non-responders or of all the responders.

#### METHODOLOGY

It was necessary to distribute the questionnaire and recording sheet to a representative sample of pharmacies. Asking colleagues to assist as in the pilot study, or just sending the questionnaires to a list of local pharmacies could not guarantee the selection of a representative sample. It was considered that the data requested was fairly detailed, so that, to ensure an adequate response, a sufficiently large number of questionnaires would have to be distributed. It was decided, therefore, to select a five per cent sample of the pharmacies listed in the current Pharmaceutical Society Register of Premises for England using random number tables. The shops listed under each county in England were numbered and the five per cent sample taken from each. Eight thousand three hundred and thirty four pharmacies were listed in England which resulted in four hundred and seventeen pharmacies, evenly distributed throughout the country, being selected. There was no sure way at this stage of testing the representative nature of the pharmacies selected. It was found, however, that just over ten per cent of the pharmacies selected belonged to the largest multiple pharmacy group in the country which is a close approximation to the actual proportion. The representative nature of the sample selected, it was hoped, would be more accurately reflected in the information received back. These pharmacies were sent a copy of the questionnaire, recording sheet and notes for guidance together with a covering letter explaining the object and potential value of the investigation and emphasising the total anonymity of the completed questionnaires. The sample day's recordings were requested to be made on one full working day during April 1977.

## SURVEY RESULTS

The recordings were collated and analysed in sequence. Where appropriate, explanatory comments and evaluations are made with each analysis.

One hundred and six questionnaires were returned (see Table 5).

### SURVEY OF PHARMACIES IN ENGLAND APRIL 1977

QUESTIONNAIRES DISTRIBUTED	417 (5% sample)
QUESTIONNAIRES COMPLETED	93 (1.1% sample)
QUESTIONNAIRES NOT COMPLETED	13 (9 closed, 2 could not complete, 2 not fully completed)

TABLE 5

Thirteen questionnaires were returned which could not be used because nine pharmacies had closed, two indicated that they could not be completed, one because of the recent death of the pharmacist and one because "there was not time", and two, although the questionnaire details were included, where the pharmacists felt they did not have the time to complete the recordings of medicine sales. The remaining ninety three completed questionnaires represented a 1.1% sample of all the pharmacies in England and a satisfactory response rate of 22.3%. This response rate, however, confirmed the importance of selecting a large number of pharmacies for the circulation of the questionnaire and recording sheet. It was then necessary to check whether those pharmacies responding were adequately representative of the pharmacies in England.

Section II of the questionnaire was analysed to establish the type, location and ownership of the responding pharmacies. The classification of pharmacies responding is illustrated in Figure 1.

### Type of Pharmacy

"Dispensing only pharmacies" had been defined on the questionnaire as those businesses with eighty per cent or more dispensing, while "mainly O.T.C. pharmacies" were defined as those businesses with twenty per cent or less dispensing. It was felt that because these numbers of pharmacies were small it would be statistically inappropriate to draw any distinction between these types of pharmacies when analysing the results.

### Location of Pharmacy

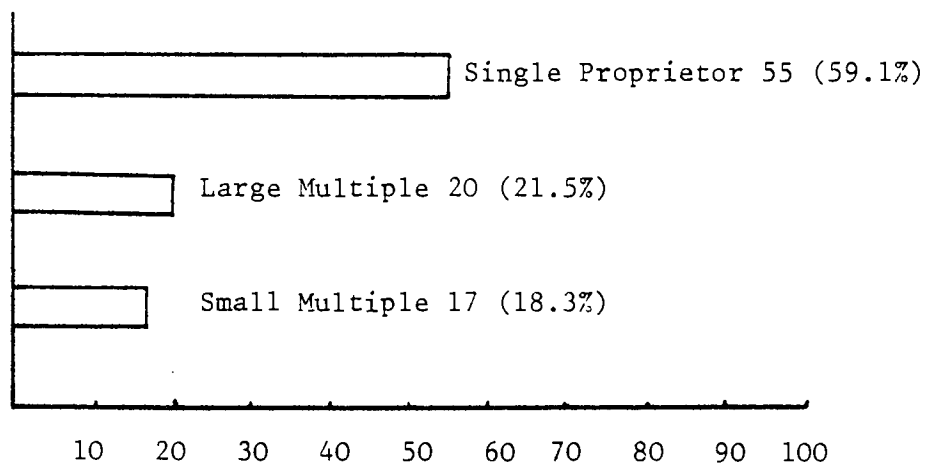
A "town centre pharmacy" was defined as one in a large shopping area and a "suburban pharmacy" as one serving a local community in contrast with a rural pharmacy.

### Ownership of Pharmacy

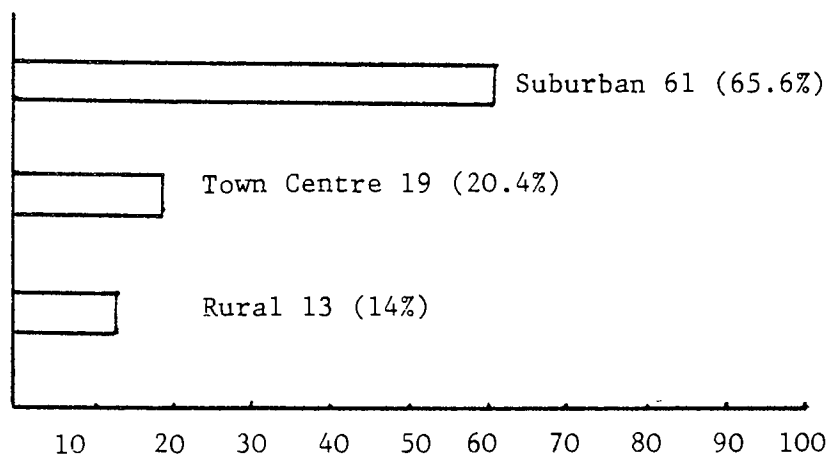
The identification of the type of ownership of a pharmacy was considered important and would enable the representative nature of the sample to be confined. "Small multiple" was defined to include the ownership of groups of pharmacies having up to ten shops, and "large multiples" as those with more than ten shops. In 1972 the Pharmaceutical Society conducted a survey of pharmacies in respect of ownership<sup>(60)</sup>. Using the same definitions for small and large multiples as in the survey, that survey showed that 59.4% of pharmacies were owned by single proprietors, 22% by small multiples and 18.6% by large multiples. The comparison of the results obtained from the Pharmaceutical Society survey with those from this survey is illustrated in Figure 2.

The percentage figures for single proprietor pharmacies compare closely while the figures for small and large multiples appear to be

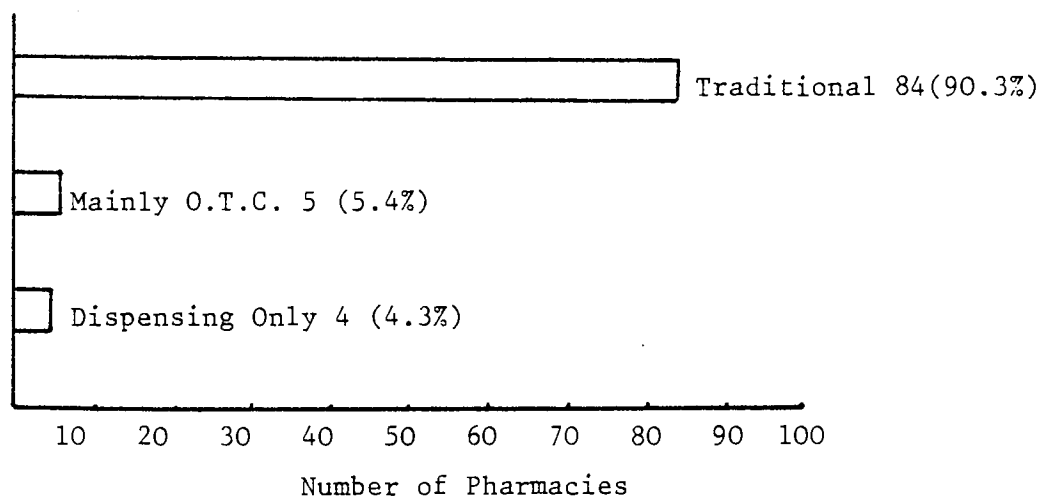
OWNERSHIP OF PHARMACY



LOCATION OF PHARMACY

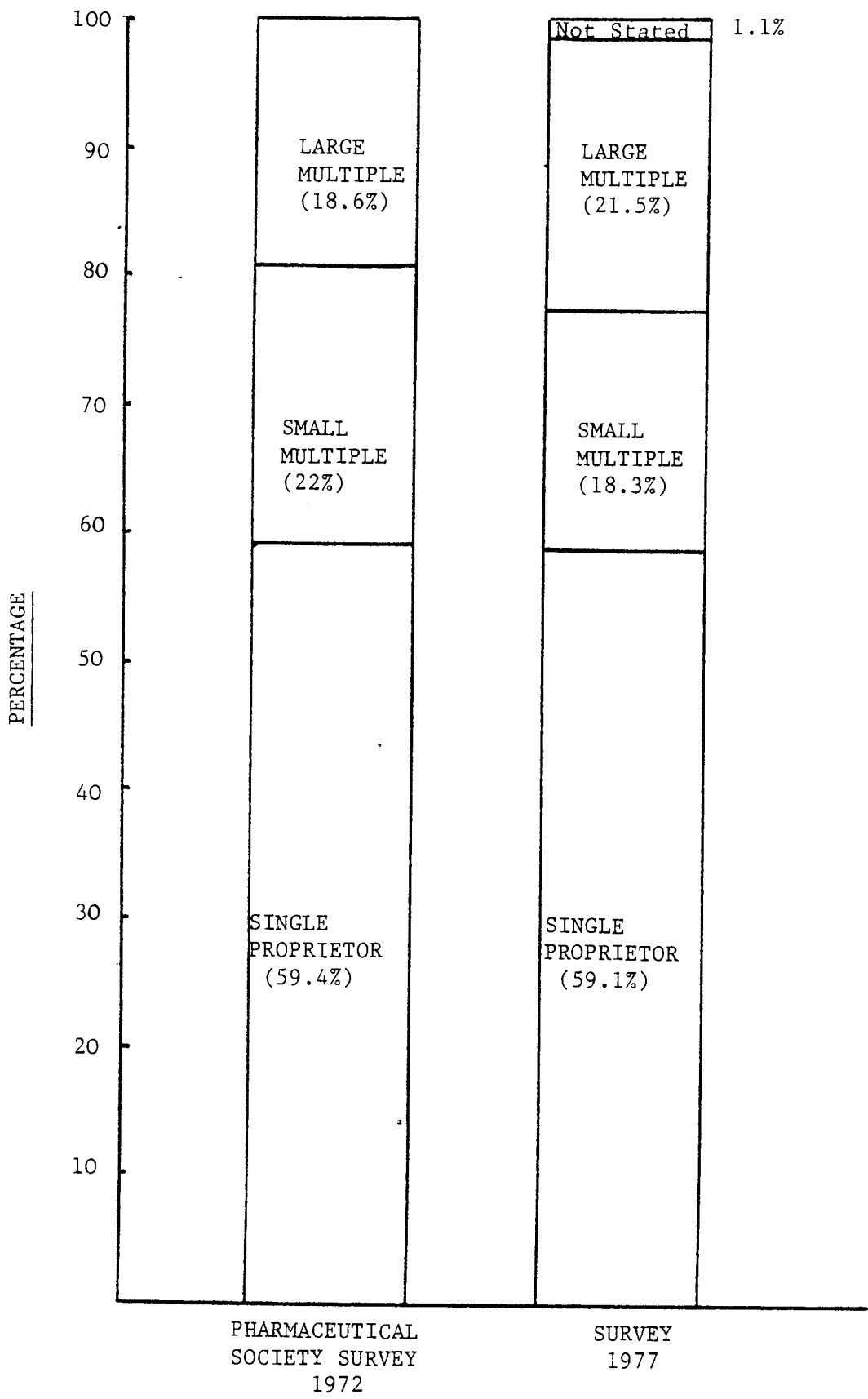


TYPE OF PHARMACY



CLASSIFICATION OF PHARMACIES RESPONDING

FIGURE 1



COMPARISON OF OWNERSHIP SURVEYS

FIGURE 2



reversed. There had been a five year gap between the two surveys and it was felt that, because of the definitions used for these groups, the acquisition of only one more pharmacy by some of the small multiple groups or the take over of a small multiple group by a large multiple group would increase the size of the large multiple category. It was, therefore, considered that the responding pharmacies in this survey were reliably representative of the pharmacies listed in the Register of Premises.

ANALYSIS OF MEDICINE SALES

The results show (Table 6) that seven thousand four hundred and fifty two medicine sales were made on one day by the pharmacies taking part in the survey, i.e. an average of eighty medicine sales per pharmacy per day.

MEDICINE SALES FOR ALL PHARMACIES IN ONE DAY  
APRIL 1977

	TOTAL	AVERAGE PER PHARMACY	% OF ADVISED SALES
NON-ADVISED SALES	5144	55.3	
<hr/>			
Proprietary medicine advised sales	978	10.5	42.4%
Counter prescribed medicine advised sale	742	8	32.3%
Refer to seek medical advice	285	3	12%
General health advice	303	3.3	13.3%
TOTAL ADVISED SALES	2308	24.8	100%

TABLE 6

Almost twenty five (31%) of the eighty medicine sales were advised sales and fifty five were non-advised sales. Previous surveys and observations (22)(24)(25)(28) had indicated between ten and sixteen advice requests per pharmacy per day. This apparent increase can be due to one of two reasons:

(1) Previous studies had only involved a relatively small number of pharmacies i.e.

1968 Survey - twenty pharmacies

1976 Survey - five pharmacies

1978 Survey - ten pharmacies

1979 observation - one pharmacy

In only one survey in 1978, was an attempt made to include different types of pharmacy when town centre, suburban and rural pharmacies were selected. The representative value of these results could not therefore be guaranteed.

(2) Attempts have been made in this survey to record all advice requests, and the recording sheet was designed for easy use by the pharmacist and his staff and did not depend on a researcher being present in the shop attempting to observe all requests for advice.

The investigation has succeeded in establishing the basic quantitative details of the advisory role of the general practice pharmacist in respect of self medication and the treatment of minor ailments. The advice sales were analysed further, Table 6, to show that 75% of the advice requests involved the sale of a medicine and 25% were for general health matters or referrals to seek medical advice. The actual sale of a medicine was not necessarily made with 25% of the

advice requests and therefore no immediate financial advantage to the pharmacy could have resulted. General practice pharmacists do operate a dual professional and business role and the question of where the pharmacist's priorities lie cannot be evaded. It is believed that this observation does indicate that pharmacists act in a professional and responsible manner when asked for advice and are not solely concerned with financial gain.

Almost six out of ten of the advised sales involving the sale of a medicine were for a proprietary medicine and four out of ten were for a medicine made up in the dispensary. Considering these statistics in an economic light, the profit, both numerically and proportionally, should be greater from medicines made up in the dispensary than from proprietary medicines, so that it should usually be more financially rewarding to make up medicines in the dispensary. However, two factors affect the ratio of proprietary and made-up medicines:

(1) Workload - preparing medicines in the dispensary is time consuming relative to selling a proprietary medicine so that busier pharmacies may have less scope for supplying made up medicines.

(2) Availability - the range of proprietary medicines available for the treatment of many ailments is extensive. As well as being easier, it may be more professionally sound to advise a proprietary medicine.

Both of these factors will be considered further.

#### Therapeutic groups

The medicine sales were divided into their various therapeutic groups (Table 7).

BREAKDOWN OF ALL MEDICINE SALES

	TOTAL NON-ADVISED & ADVISED SALES	NON-ADVISED SALES	ADVISED SALES
Cough, colds etc.	1993	1333 (66.9%)	660 (33.1%)
Analgesics	1313	1037 (79.2%)	276 (20.8%)
Alimentary tract	1115	736 (66%)	379 (34%)
Skins and rashes	618	351 (56.8%)	267 (43.2%)
Vitamins, tonics	544	503 (74%)	141 (26%)
First aid	648	549 (84.7%)	99 (15.3%)
Others	918	735 (80%)	183 (20%)

(The above totals do not  
include 303 "Advice Sales  
on General Health Advice).

TABLE 7

"Upper respiratory tract" medicines (coughs, colds etc.) formed the largest group of medicines sold and one third of these were advice sales. The second largest group, "analgesics", showed that only 20.8% of these sales were advised while the "skins and rashes" group, numerically the second smallest group showed that 43.2% of these sales were advised, proportionally more than twice the "analgesic" group. These latter two figures possibly reflect the different advertising emphasis by manufacturers of proprietary medicines. Many analgesics are heavily advertised and are well established household names, therefore it would be expected that fewer people would seek advice when purchasing these products for self medication. Conversely, the treatment of skin complaints is not an area in which proprietary medicine manufacturers advertise so heavily, therefore it would be expected that more people would seek advice for skin complaints.

The "First Aid" group showed the smallest proportion (15.3%) of advised sales. It is suspected that the non-advised sales figure for this group included the sale of bandages and dressing etc. thus depressing this proportion. However, the advised sales figure of ninety nine (approximately one per pharmacy per day) represents those customers who actively seek first aid from the pharmacist.

31% of all recorded sales were advised sales, but the general health advice requests did not necessarily involve a sale of medicine so that these should be ignored when comparing the proportions of each group of medicine sales. Thus, 28% of those sales actually involving the sale of a medicine were advised sales, and the variation from this average by each medicine group is illustrated in Figure 3.

If the figures are analysed for the average pharmacy in one day patients would be advised as follows:

Coughs and Colds	7 sales
Analgesics	3 sales
Alimentary tract	4 sales
Skins and rashes	3 sales
Vitamin and tonics	1.5 sales
First Aid	1 sale
Others	2 sales
Total	21.5 sales

The addition of 3.3 average "sales" on general health advice gives the average total per pharmacy of 24.8 advised sales per day.

#### Advised Sales

The advised sales were examined in more detail (Table 8).

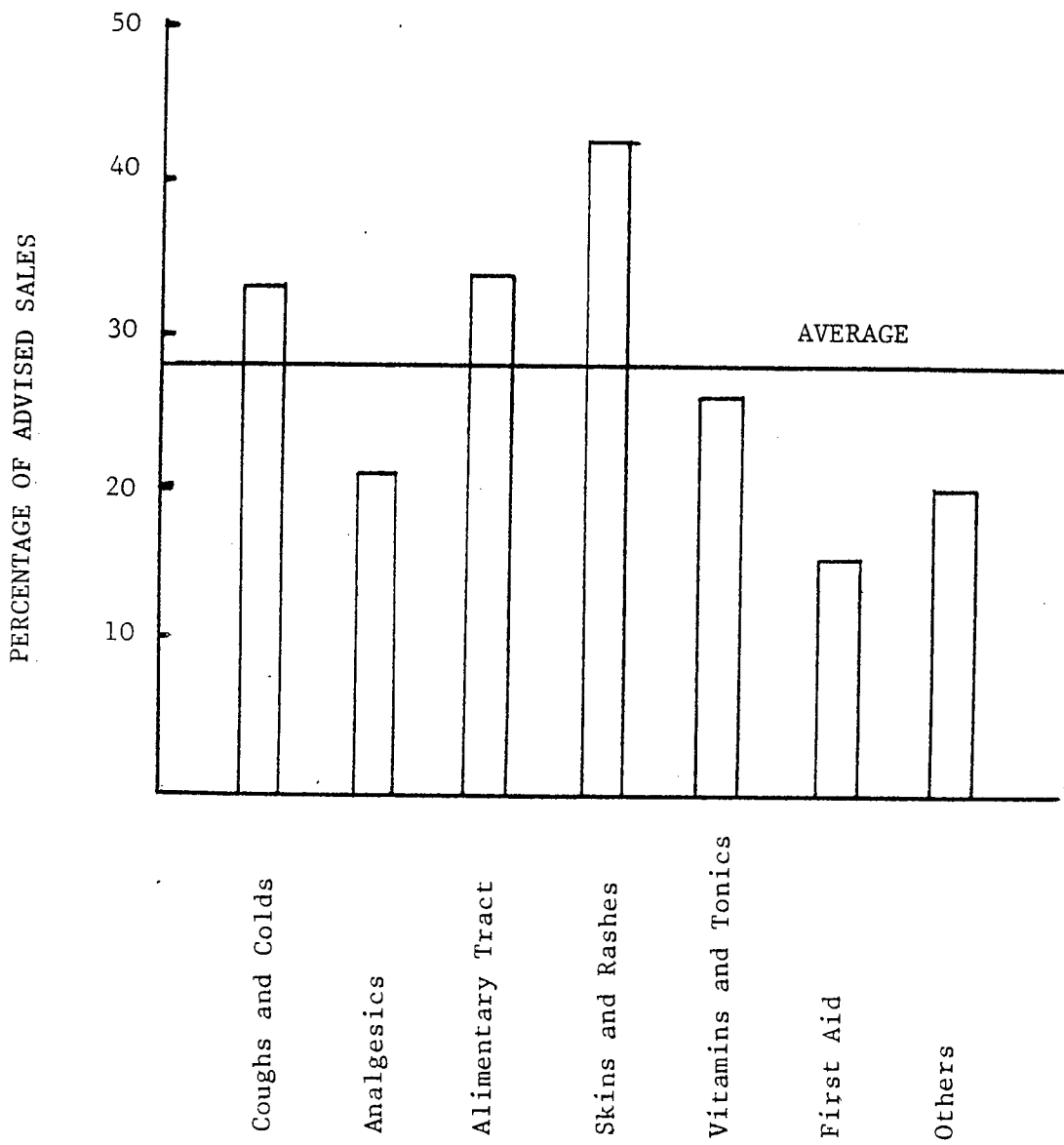
BREAKDOWN OF ADVISED SALES

	Total	Proprietary Medicine	Counter Prescribed Medicine	Refer to Seek Medical Advice
Cough, colds Etc.	660	364 (55.1%)	229 (34.7%)	67 (10.2%)
Analgesics	276	161 (59%)	71 (26%)	44 (15%)
Alimentary tract	379	109 (28.8%)	211 (55.7%)	59 (15.5%)
Skins and rashes	267	131 (49%)	78 (29.3%)	58 (21.7%)
Vitamins, tonics	141	85 (60.2%)	45 (32%)	11 (7.8%)
First aid	99	50 (50.5%)	26 (26.3%)	23 (23.2%)
Others	183	78 (42.6%)	82 (42.8%)	23 (12.6%)

TABLE 8

The "upper respiratory tract" medicines were the largest group accounting for one third of the advised sales, followed by the "alimentary tract" group with 19% of the advised sales.

The type of advice given showed that proprietary medicines were advised mainly for "vitamins and tonics"(60.2%), "analgesics" (59%) and "cough and cold" remedies (55.1%). In the "alimentary tract" group only 28.8% of the advised sales were for proprietary medicines whereas 55.7% of the advised sales were for a medicine made up by the pharmacist. This would seem to establish a sound basis for the argument that the wider availability of proprietary medicines for the treatment of certain classes of ailments significantly influences the form of advice given by the pharmacist. There are relatively few proprietary medicines available to treat conditions affecting the alimentary tract, compared to the other therapeutic groups, which offer any pharmacological advantage over the range of widely used official preparations (British National Formulary, British Pharmaceutical Codex).



PROPORTION OF ADVISED SALES FOR EACH MEDICINE GROUP

FIGURE 3

The figures, therefore, not only reflect differences in availability but also emphasise the response by pharmacists in their choice of medicines in the exercise of their professional responsibility.

Only 7.8% of the "vitamin and tonics" group involved referrals to seek medical advice, which is little more than half the average referral rate (Table 2). This may be associated with the advice given by the Advisory Committee on Borderline Substances to general medical practitioners not to prescribe vitamin supplements unless there is illness associated with vitamin deficiency. The pharmacist, aware of these guidelines, is probably less likely to refer a patient in this category. However, the pharmacist can certainly use his knowledge and experience in explaining to patients the advisability and suitability of taking preparations within this group.

The largest percentage of advised referrals to seek medical advice was shown by the numerically smallest group, "first aid" (23.2%) while the "skins and rashes" (21.7%) followed closely. Two explanations may be considered for the comparatively high proportion shown by these groups:

- (1) General practice pharmacists do not usually, at present, have the privacy of a consulting booth or room in which to undertake first aid treatment adequately, or there may be an unwillingness to do more than is morally minimal because of concern for possible legal liability. A suitable consulting booth or room would, of course, afford adequate privacy for any type of consultation.

- (2) The restricted availability of many appropriate preparations, such as topical antibiotics and mild topical steroids, limits



the scope of first aid and after care treatment and more effective treatment of skin complaints. The wider availability of more effective preparations has been suggested<sup>(7)(13)(54)</sup> and these figures emphasise that the restricted availability of a great many preparations has considerably limited the advice a pharmacist may give.

The variation from the average in the number of advised sale supplies for each medicine group is illustrated in Figure 4.

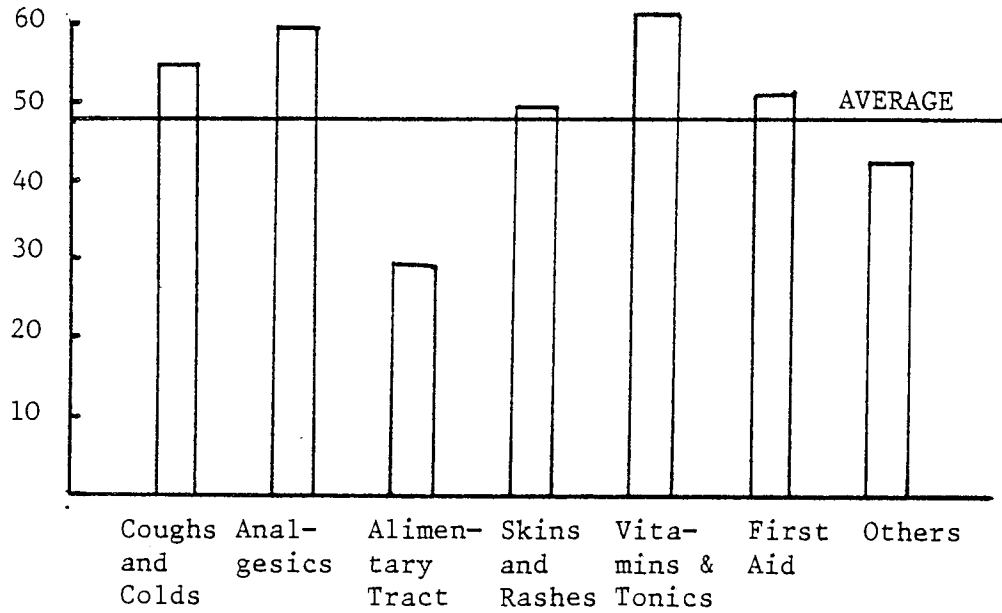
#### PHARMACY OWNERSHIP

The results of the questionnaire were then analysed according to the type of pharmacy ownership (Table 9).

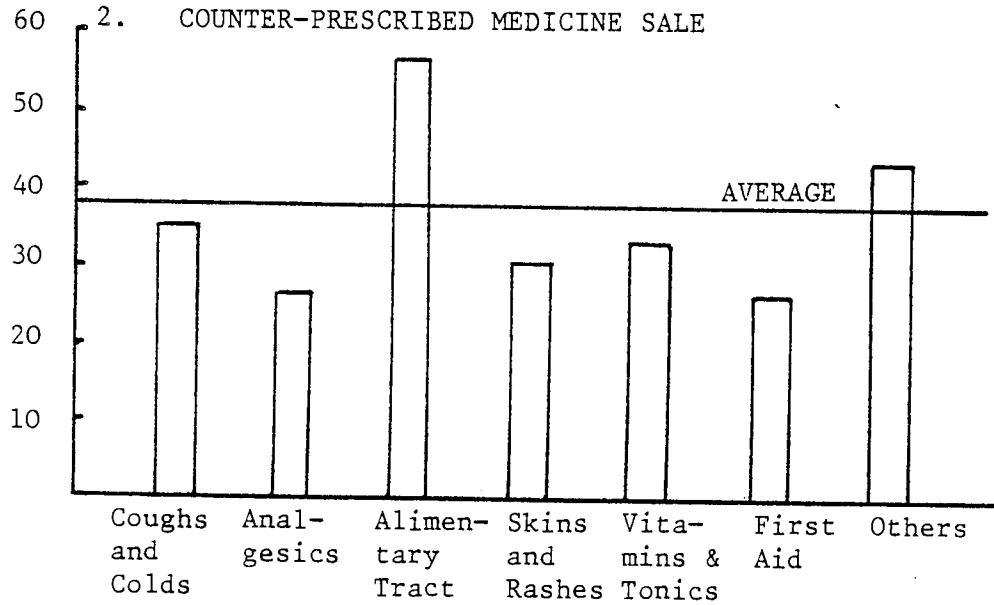
Approximately twice as many total medicine sales were made in large multiples (132) than in small multiples (66.6) and in single proprietor pharmacies (65.3). There was not such a large difference in the advised sales for the three types of pharmacy, so that almost all the difference is produced by the differences shown in the non-advised sales. The comparison of sales for the differently owned pharmacies is illustrated in Figure 5 and demonstrates the remarkable numerical similarity of advised sales per day in all three types of pharmacy.

Consideration of the proportion of advised sales showed that 37.6% of the sales in single proprietor pharmacies were advised sales, 32.4% of the sales in small multiple pharmacies were advised sales, but only 21% of the sales in large multiple pharmacies were advised sales. The inevitable question raised by this analysis is, "Why is the proportion of advised sales lower in large multiple pharmacies?"

1. PROPRIETARY MEDICINE SALE

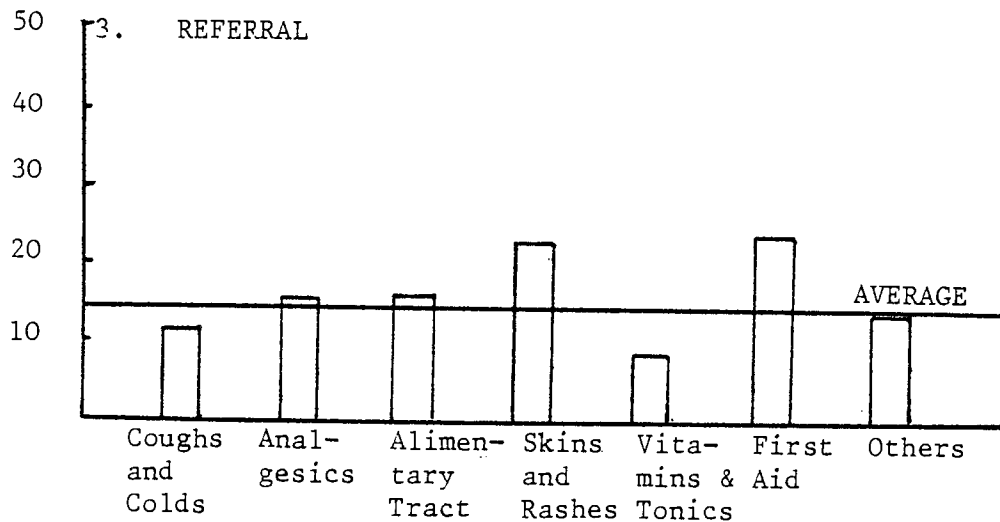


2. COUNTER-PRESCRIBED MEDICINE SALE



PERCENTAGE OF ADVISED SALES

3. REFERRAL



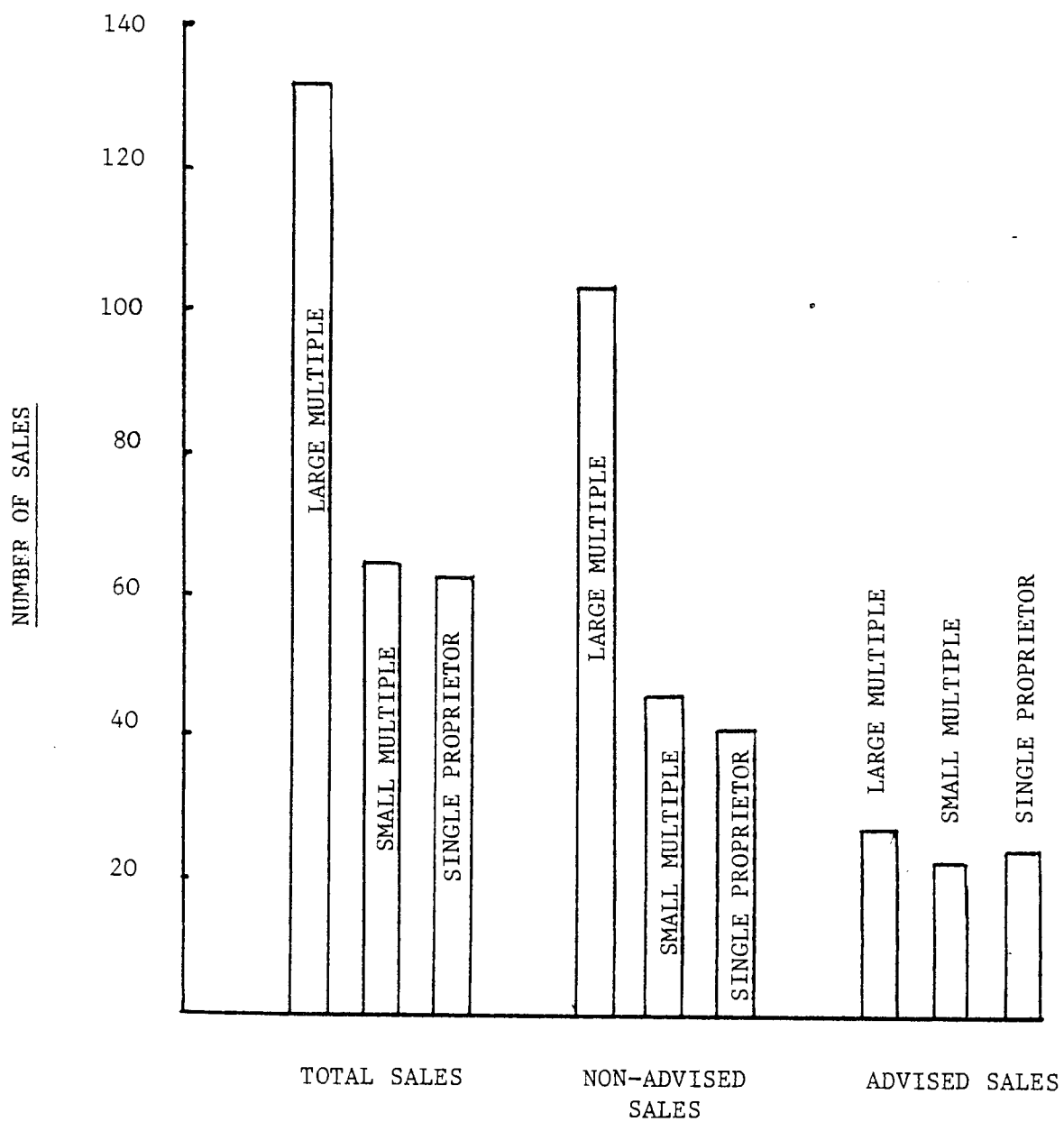
PROPORTION OF EACH TYPE OF ADVISED SALE FOR EACH MEDICINE GROUP

FIGURE 4

MEDICINE SALES FOR DIFFERENTLY OWNED PHARMACIES, IN ONE DAY APRIL 1977

	SINGLE PROPRIETOR (55 pharmacies)		SMALL MULTIPLE (17 pharmacies)		LARGE MULTIPLE (20 pharmacies)	
	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE
NON-ADVISED SALES	2243	40.8	765	45	2084	104.2
Proprietary medicine advised sale	544	9.9	165	9.7	256	12.8
Counter prescribed medicine advised sales	430	7.8	136	8	169	8.5
Refer to seek medical advice	162	2.9	25	1.5	90	4.5
General health advice	213	3.9	41	2.4	46	2.3
Total advised sales	1349	24.5	367	21.6	561	28
TOTAL OF ALL SALES	3592	65.3	1132	66.6	2645	132
						% of ADVISED SALES
						% of ADVISED SALES
						% of ADVISED SALES

TABLE 9



COMPARISON OF SALES FOR DIFFERENTLY OWNED PHARMACIES

FIGURE 5

There are two possible explanations:

1. (a) Large multiples often tend to be relatively large stores associated with a proportionally smaller pharmacy department than other pharmacies.  
(b) The pharmacist in large multiples, because of the size of the store, and because he is usually the manager of the whole store, may not be generally as accessible as the pharmacist in other pharmacies.  
(c) The pharmacist is more fully occupied with other commercial business.
  
2. (a) The large multiples tend to be more expert at merchandising.  
(b) Because of more space, large multiples possibly carry a wider range of medicines and in this computerised age probably operate more effective and efficient methods of stock control. Certainly many of them carry a wide range of own brand medicines.  
(c) Customer shopping habits must influence the sale of medicines to the extent that general weekly shopping often takes place in large stores. Large multiples are often situated near to large chain stores and supermarkets so that customers doing their general weekly shopping will tend to buy their regularly used medicines, not necessarily requiring advice, from such stores.

Both sets of explanations would explain the lower proportion of advice sales shown in large multiple pharmacies, however, further evaluation of these will be considered later in the analysis.

THE MOST SIGNIFICANT FACT SHOWN BY THIS COMPARISON IS THAT ALL PHARMACIES MAKE APPROXIMATELY TWENTY-FIVE ADVICE SALES PER DAY.

### Type of advice

In considering the types of advice given it was shown that small and large multiple pharmacies advised proprietary medicines (45% and 46% respectively) more frequently than single proprietor pharmacies (40%), although the deviation from the average (42.4%) is less than ten per cent. A larger deviation from the average of 32.3% was shown by the small multiples (37%) recording their made-up medicine advice sales. The largest deviations from the average of 12% were shown by the proportion of referrals made in large multiples (16%) and small multiples (7%). This figure for small multiples may be connected with the higher incidence of making up medicines as discussed.

Further large variations were shown when observing the general health advice given. Only 8% of the advised sales in large multiple pharmacies was for general health advice whereas this accounted for 16% of the advised sales in single proprietor pharmacies. Single proprietor pharmacies are smaller and have less 'customer flow' than the large multiple pharmacies as indicated by the non-advised medicine sales. Could it be that these facts provide an atmosphere of privacy where the customer feels able to discuss problems more easily in single proprietor pharmacies? The provision of private consulting booths or rooms in all pharmacies could increase the amount of advice sought by the general public.

### PHARMACY LOCATION

The results of the questionnaire were then analysed according to the location of the pharmacies (Table 10).

MEDICINE SALES FOR DIFFERENTLY LOCATED PHARMACIES IN ONE DAY APRIL 1977

	TOWN CENTRE (19 pharmacies)		SUBURBAN (61 pharmacies)		RURAL (13 pharmacies)	
	TOTAL	AVERAGE	TOTAL	AVERAGE	TOTAL	AVERAGE
NON-ADVISED SALES	1693	89	2917	49	534	41
		% of ADVISED SALES		% of ADVISED SALES		% of ADVISED SALES
Proprietary medicine advised sales	224	11.8	635	10.4	119	9
Counter prescribed medicine advised sales	162	8.5	426	7	154	11.8
Refer to seek medical advice	66	3.5	179	2.9	40	3
General health advice	46	2.4	208	3.4	49	3.8
<b>Total advised sales</b>	<b>498</b>	<b>26.2</b>	<b>1148</b>	<b>23.7</b>	<b>362</b>	<b>27.8</b>
<b>TOTAL OF ALL SALES</b>	<b>2191</b>	<b>115</b>	<b>4365</b>	<b>71.5</b>	<b>896</b>	<b>69</b>

TABLE 10

More total medicine sales were recorded in "town centre pharmacies" (115) than in suburban (71.5) and rural (69) pharmacies. The number of advised sales in the three types of pharmacy differed little, so that almost all the difference in total medicine sales is produced by the variations shown in the non-advised sales. The comparison of medicine sales for differently located pharmacies is illustrated in Figure 6 and demonstrates the remarkable numerical similarity of advised sales.

This, together with the findings shown by the differently owned pharmacies establishes the numerical similarity of advised sales in all pharmacies irrespective of their ownership and location.

Consideration of the proportion of advised sales indicated that 39% of the sales in rural pharmacies were advised, 32% of sales in suburban pharmacies were advised but only 23% of the sales in town centre pharmacies were advised. This raises the question:

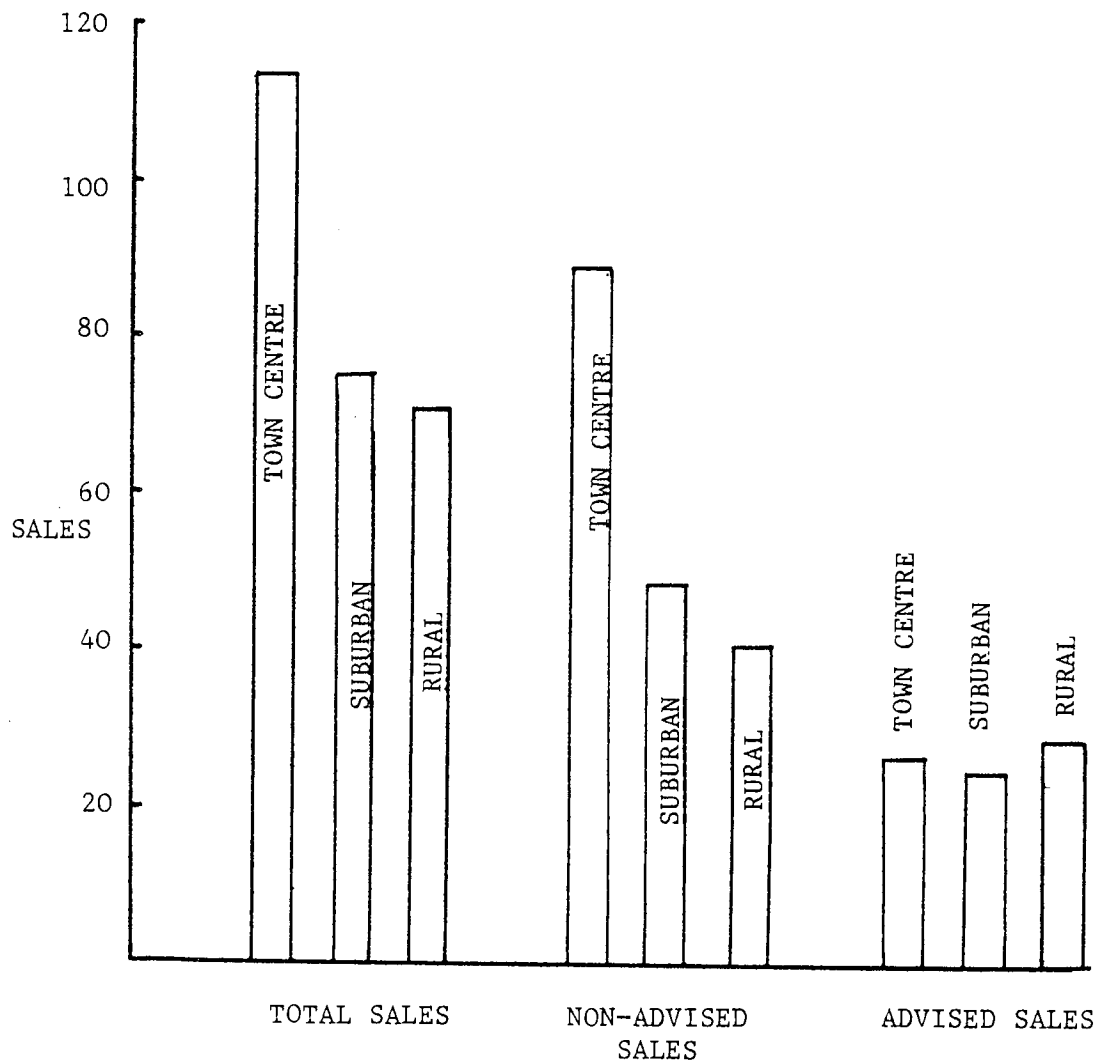
"Why is the proportion of advised sales lower in town centre pharmacies?"

A similar distribution of the advised sales has been shown for large multiple pharmacies and two explanations were considered. If the nineteen town centre pharmacies were almost all large multiple pharmacies then credence could possibly be given to the first set of explanations i.e.

- (a) Large stores
- (b) Pharmacist not accessible
- (c) Pharmacist more concerned with commercial activities

This would present the hypothesis that the proportion of advice sales in pharmacies is dependant on the size of the pharmacy, its location and the accessibility of the pharmacist.





COMPARISON OF SALES FOR DIFFERENTLY LOCATED PHARMACIES

FIGURE 6

However if the second set of explanations are more probable to explain the lower proportion of advice sales in large multiple and town centre pharmacies, i.e.

- (a) Better merchandising
- (b) Wider range
- (c) Customer shopping habits

then the hypothesis should be restated to indicate that the proportion of advice sales is not dependent on size and location of the pharmacy and becomes depressed as a proportion only when more efficient merchandising and a wider range of stock increases the proportion of non-advised sales.

In order to investigate the feasibility of either of these hypotheses it was necessary to analyse the location of large multiples and the ownership of town centre pharmacies further.

LOCATION/OWNERSHIP OF PHARMACIES

	NUMBER OF PHARMACIES			
	Town Centre	Suburban	Rural	Total
Single Proprietor	5	41	9	55
Small multiple	4	9	4	17
Large multiple	10	10	0	20
TOTAL	19	60	13	92

(One suburban pharmacy did not indicate ownership)

TABLE 11

The ownership of the differently located pharmacies (Table 11) clearly indicates that only half of the large multiple pharmacies were located in town centres.

If the large multiples showed a lower proportion of advice sales because of their size and therefore the feeling by the customers of the inaccessibility of the pharmacists then those large multiples situated in suburban areas, which are necessarily smaller pharmacies, should show a significantly reduced volume of non-advised sales and a higher proportion of advised sales.

LARGE MULTIPLE SALES

TOWN CENTRE PHARMACIES(10)			SUBURBAN PHARMACIES(10)		
Non-Advised Sales	Advised Sales	Advised Sales % of Total Sales	Non-Advised Sales	Advised Sales	Advised Sales % of Total Sales
Ave.	Ave.		Ave.	Ave.	
1186 (118.6)	324 (32.4)	21.4%	898 (89.8)	237 (23.7)	20.9%

TABLE 12

This is not so (Table 12). Although the volume of non-advised sales in the suburban large multiples is lower than in town centre pharmacies it is still considerably higher than the average of 55.3 non-advised sales for all pharmacies. The average of 21% of total sales being advised sales is clearly indicated in large multiples whether located in town centres or suburban areas, and it would, therefore, seem to establish that the proportion of advice sales in large multiples is not dependent on their location and size.

However, before location of the pharmacy can be discounted as having a depressing effect on the proportion of advised sales in pharmacies it is necessary to analyse that proportion observed for the other ownership groups in town centre locations.

TOWN CENTRE SALES

<u>SINGLE PROPRIETOR PHARMACIES (5)</u>			<u>SMALL MULTIPLES (4)</u>		
Non-Advised Sales	Advised Sales	Advised Sales % of Total Sales	Non-Advised Sales	Advised Sales	Advised Sales % of Total Sales
Ave.	Ave.		Ave.	Ave.	
256 (51)	84 (17)	24.7%	251 (63)	90 (22.5)	26.4%

TABLE 13

The distribution of sales observed in the single proprietor and small multiple pharmacies situated in town centre locations, is shown in Table 13. The number of pharmacies are small but they produce an interesting statistic. The average proportion of advised sales shown for all single proprietor pharmacies (37.6%) and for all small multiples (32.4%) is much reduced when they are situated in town centre locations, the single proprietor pharmacies (24.7%) more so than the small multiples (26.4%). The numerical advised sales in single proprietor town centre pharmacies (17) shows the largest deviation from the average of approximately twenty five in the investigation. Clearly the location of some pharmacies does affect the proportion of advised sales.

At this stage an assumption will be made that the larger store type pharmacies are owned by large multiple groups. Considering the two hypotheses discussed earlier it is possible to indicate that, using this assumption, the size of the pharmacy has no bearing on the proportion of advised sales and that the proportion is depressed because of the larger volume of non advised sales brought about by more efficient merchandising. The location of the pharmacy does affect the proportion of advised sales in some pharmacies. The large multiple town centre pharmacies have shown a similar proportion of

advised sales to the large multiple suburban pharmacies, but the single proprietor and small multiple pharmacies have shown a reduced proportion of advised sales in the town centre locations. This reduced proportion has not been accounted for by a large volume of non-advised sales and it can only be deduced that customers seek advice less often in smaller town centre pharmacies.

It would be expected that customer shopping habits would show a large volume of medicine sales in town centres, however the volume of non-advised medicine sales is only shown to be increased in the large multiple pharmacies, and, therefore, can only be attributed to the greater expertise that these pharmacies display in merchandising. Both hypotheses, in their entirety, have been disproved. The only hypothesis which can be shown to be correct is "The proportion of advised sales is reduced in single proprietor and small multiple pharmacies when these are situated in town centre locations."

#### Type of Advice

In considering the type of advice given, the rural pharmacies advise proprietary medicines (32%) much less than suburban (44%) and town centre (45%) pharmacies, but they make up medicines (43%) much more often than suburban (30%) and town centre (33%) pharmacies. Twelve patients a day in rural pharmacies have medicines made up for them, which is fifty per cent more than the average of eight per day in pharmacies in other locations. The volume of non-advised sales in rural pharmacies is lower than the average and therefore the proportion of advised sales (39%) is consequently higher. It cannot be argued that the location of rural pharmacies affects the proportion of advised sales because the rural pharmacies exhibit the reverse situation shown by the large multiples in that the proportion of advised

sales is affected by the volume of non-advised sales. The results for rural pharmacies can possibly be explained by the reduced availability of medical practitioner services in these areas compared to other areas so that more people ask their rural pharmacist for advice before purchasing a medicine. However, an equally valid explanation could be that, because the rural pharmacist is less busy, as indicated by the lower volume of non-advised medicine sales, then customers feel able to seek advice. It is considered that a combination of these factors is involved in practice.

General health advice requests represented only 9% of the advised sales in town centre pharmacies but 14% of the advised sales in suburban and rural pharmacies. This distribution pattern is similar to that shown by the large multiples and suggests that this type of advice is more easily sought in smaller, less busy pharmacies and points to the importance and potential for private consulting areas in pharmacies.

#### PHARMACY TYPE

It was stated earlier that, because only four dispensing only pharmacies and five mainly O.T.C. pharmacies responded, it would be statistically inappropriate to draw any distinction between these types of pharmacy. However, this survey has indicated the representative nature of the sample, therefore, although the numbers of pharmacies are small, the trend they indicate warrants comment.

The results of the questionnaire were analysed according to the type of pharmacy (Table 14).

As expected the results for the eighty four traditional pharmacies clearly match the results shown for all pharmacies (Table 2). The

MEDICINE SALES FOR DIFFERENT TYPES OF PHARMACY IN ONE DAY APRIL 1977

	DISPENSING ONLY (4)		TRADITIONAL (84)		MAINLY O.T.C. (5)	
	TOTAL	AVERAGE	% of ADVISED SALES	TOTAL	AVERAGE	% of ADVISED SALES
NON-ADVISED SALES	96	24		4206	50.1	
						842 168.4
Proprietary medicine advised sales	32	8	52.6%	882	10.5	41.5%
Counter prescribed medicine advised sales	15	3.7	24.3%	692	8.2	32.4%
Refer to seek medical advice	4	1	6.6%	267	3.2	12.7%
General health advice	10	2.5	16.5%	288	3.4	13.4%
Total Advised Sales	61	15.2		2129	25.3	
TOTAL OF ALL SALES	157	39.2		6335	75.4	
						960 192

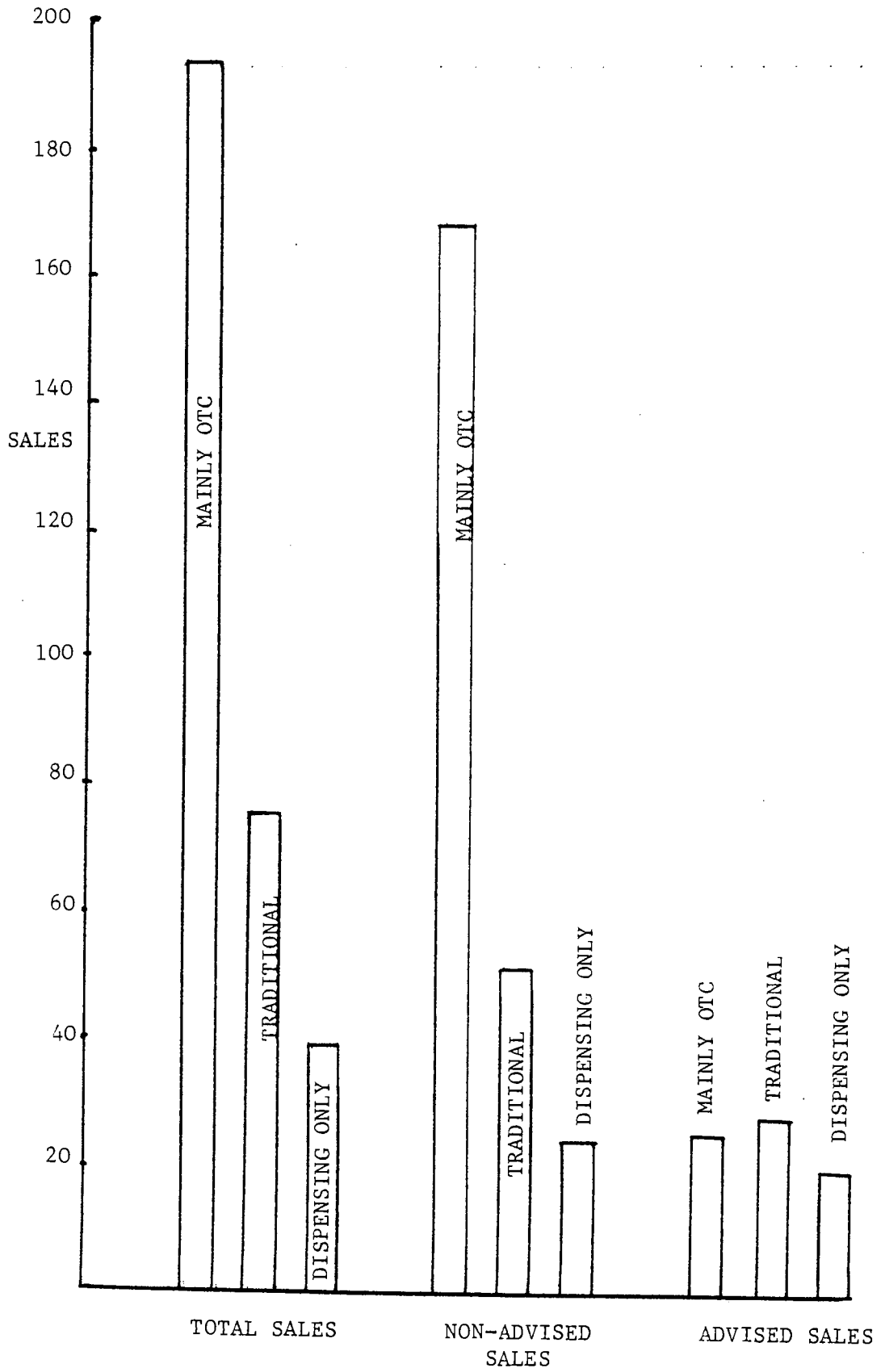
TABLE 14

dispensing only pharmacies showed a lower volume of advised sales but equally a much lower volume of non-advised sales as would be expected from a pharmacy of this type. The proportion of advised sales to total sales (38.8%) is, therefore, larger than the average.

The comparison of medicine sales shown by different types of pharmacy is illustrated in Figure 7. A large volume of non-advised sales was recorded by the five mainly O.T.C. pharmacies, and, although they recorded almost twenty four advised sales per pharmacy, the proportion of those advised sales was very much reduced (12.3%). The depression of the proportion of advised sales in large multiple and town centre pharmacies has been explained by the large volume of non-advised sales. The mainly O.T.C. pharmacies showed a much greater drop in the proportion of advised sales, therefore other possible factors should be considered. Customer flow and dispensing must have some influence on the incidence of advice. By their very nature mainly O.T.C. pharmacies have a large flow of customers, and, by definition, the dispensing is less than 20% of the business and both factors possibly influence the incidence of advice requests.

This representative sample of pharmacies has produced too few 'dispensing only' and 'mainly O.T.C. pharmacies' to conclusively indicate the extent and difference of the pharmacist's advisory role in those pharmacies. A general trend has been shown and could only be confirmed by either achieving a very much larger sample or selectively requesting 'dispensing only' and 'mainly O.T.C.' pharmacies to participate in a separate investigation.





COMPARISON OF SALES FOR DIFFERENT TYPES OF PHARMACY

FIGURE 7

## ADVICE WITH DISPENSED MEDICINES

The advisory role of the general practice pharmacist cannot be fully assessed without considering the advisory role associated with dispensed medicines. Section III of the questionnaire requested information concerning the dispensing activities on the day of the survey.

The prescription statistics are shown in Table 15.

### PRESCRIPTION STATISTICS IN ONE DAY APRIL 1977

Av. No. of Items	Av. No. of Items
Single Proprietor Pharmacies 119	Town Centre Pharmacies 118
Small Multiple Pharmacies 117	Suburban Pharmacies 130
Large Multiple Pharmacies 139	Rural Pharmacies 96
TOTAL ITEMS DISPENSED 11,320	Average per pharmacy 123 (one pharmacy declined to answer this question)

TABLE 15

The prescription throughput was lowest in rural pharmacies as would be expected. The customer flow for prescriptions is thus reduced in rural pharmacies compared to other pharmacies as was indicated by the lower non-advised sales in these pharmacies. This would indicate that customer flow does influence the incidence of advice requests. However the prescription throughput figure expresses an approximate annual prescription turnover of twenty six thousand items and indicates the important role of rural pharmacies in N.H.S. dispensing.

Large multiples showed the highest average prescription throughput which emphasises that customer flow influences the incidence of advice

requests. Customer flow is increased in large multiples not only because of a higher volume of non-advised sales but also because of a higher average prescription turnover, thus reducing the proportion of advice requests. It is interesting to note that the average prescription throughput for large multiples is higher than for other pharmacies because the proportion of large multiples dispensing fewer prescriptions is lower, i.e.

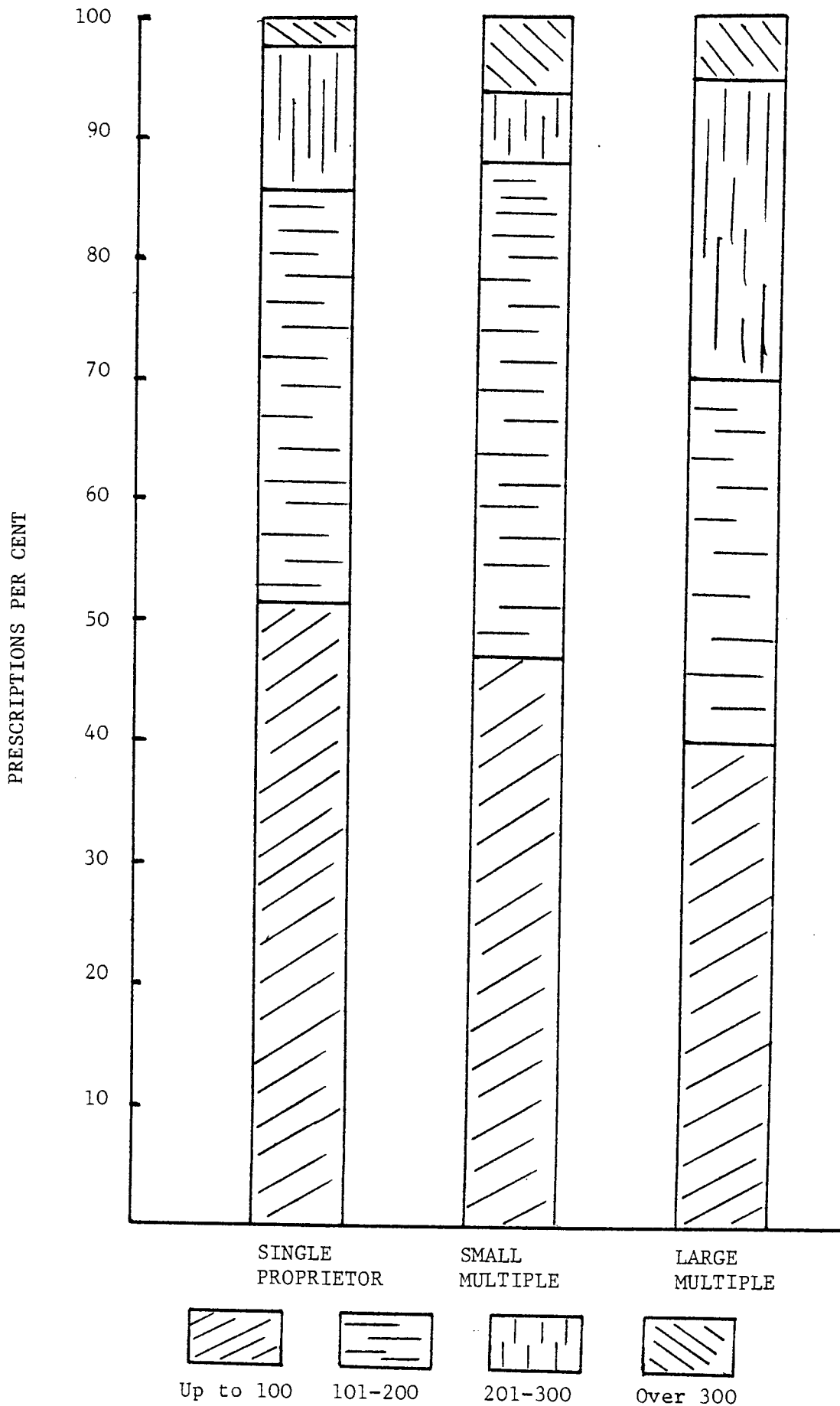
Pharmacies dispensing up to one hundred prescriptions a day:

- (i) 40% of large multiple pharmacies
- (ii) 47% of small multiple pharmacies
- (iii) 50.8% of single proprietor pharmacies
- (iv) 47.4% of town centre pharmacies
- (v) 47.5% of suburban pharmacies
- (vi) 53.5% of rural pharmacies

The proportion of differently owned pharmacies dispensing the shown number of prescriptions is illustrated in Figure 8.

The totals of advice given with or requested for dispensed medicines are shown in Table 16. Approximately fourteen patients a day were recorded as receiving advice about their prescribed medicines.

One hundred and twenty three items were dispensed on average which indicates a total of eighty two forms. The assumption is made that the prescription figure indicates that eighty two patients had prescriptions dispensed in the average pharmacy in order to clarify the extent of requests for advice. Seventeen per cent of the patients therefore were recorded as advised about their prescribed medicines.



PRESCRIPTIONS DISPENSED BY DIFFERENTLY OWNED PHARMACIES

FIGURE 8

ADVICE GIVEN WITH PRESCRIPTIONS IN ONE DAY APRIL 1977

	All Pharmacies (93)		Single Proprietor (55)		Small Multiple (17)		Large Multiple (20)		Town Centre (19)		Suburban (61)		Rural (13)	
	Total	Ave	Total	Ave	Total	Ave	Total	Ave	Total	Ave	Total	Ave	Total	Ave
Additional Labels	454	4.9	209	3.8	169	9.9	74	3.7	69	3.6	336	5.5	49	3.8
Verbal Instructions	600	6.5	424	7.7	77	4.5	91	4.5	86	4.5	460	7.5	54	4.2
Advice Sought by Patient	224	2.4	159	2.9	32	1.9	28	1.4	28	1.5	164	2.7	32	2.5
TOTAL	1278	13.8	792	14.4	278	16.3	193	9.6	183	9.6	960	15.7	135	10.5

TABLE 16

There was some variation between the types of pharmacies in the extent to which advice was given. Town centre and large multiple pharmacies were recorded to have advised 30% fewer patients about their prescription medicines than the average pharmacy. Further breakdown of the types of advice recorded showed that the advice sought by the patient about prescribed medicines was sought 40% less often in large multiples and town centre pharmacies.

#### DOCTOR CONTACTS

The pharmacist's advisory role involves contact with the medical profession as well as with patients. Section III included questions to indicate the pharmacist's involvement with prescriptions which involved doctor contacts.

Eleven thousand three hundred and twenty prescriptions were recorded to have been dispensed on the day of the survey in all the pharmacies responding.

(a) Two hundred and twenty two prescriptions (1.96%) were recorded to have been ambiguously written. This is a small proportion of all prescriptions, but the total of ambiguously written prescriptions in England and Wales in one year would be greater than six million, and the majority of all pharmacies (up to 70%) received them.

(b) Sixteen prescriptions (0.14%) were recorded to have been received containing an incompatibility necessitating contact with the prescriber. The detection of an incompatibility is an indication of the pharmacist's professional responsibility in advising the medical profession. The number of prescriptions, although proportionally small, indicate that up to five hundred

thousand prescriptions bearing incompatibilities can be written annually in England and Wales.

(c) Sixty seven prescriptions were recorded to have been received resulting in the pharmacist having to contact the prescriber. This could involve almost two million prescriptions annually requiring doctor contact.

(d) Sixty one contacts initiated by doctors seeking the advice of the pharmacist were recorded. Simplification of this statistic would indicate three or four contacts from doctors to a pharmacy each week.

(e) Two thousand one hundred and thirty four (18.8%) prescriptions were written by someone other than the prescriber. Prescriptions with the name and address and date written by someone other than the prescriber were excluded from this total. Three hundred and three (14.2%) of these prescriptions were incorrectly written, and although this is a small percentage (2.7%) of all prescriptions written it indicates an annual number of more than eight and a half million prescriptions incorrectly written by someone other than the prescriber.

(f) Forty three warning cards were recorded to have been issued by up to a third of all pharmacies.

(g) Four hundred and twenty one child resistant containers were recorded to have been used for dispensed medicines. They were issued by 44% of single proprietor pharmacies, 59% of small multiples and 80% of large multiples and clearly reflect the policy of the largest multiple pharmacy group in the country to actively encourage the use of child resistant containers.



More than six hundred prescriptions dispensed by the responding pharmacies on the day of the survey involved doctor contact. Although only slightly more than five per cent of prescriptions it represents between six and seven doctor contacts per pharmacy per day and an annual total of more than sixteen million prescriptions. Half of these prescriptions were written by someone other than the signing doctor and therefore questions the advisability of such practice. 18.8% of all prescriptions were written by someone other than the signing doctor which contrasts with a report in 1976<sup>(61)</sup> where only ten per cent of prescriptions were recorded to have been written by ancillary staff.

Surveys of hospital patients<sup>(62)(63)</sup> have indicated that 2.6 to 2.9% of patients admitted to hospital are admitted because of adverse drug reactions. It has been shown in this survey that the pharmacist has detected up to half a million prescriptions annually which could have resulted in an incompatible drug reaction which if not detected might have increased the incidence of hospital admissions due to adverse drug reaction.

Only seventeen per cent of patients were advised about their prescribed medicines which would indicate a poor response by pharmacists in their advisory role to patients, however this must be contrasted with their supervisory role which it would appear is performed with diligence and responsibility.



CHAPTER 4

SURVEY OF CUSTOMERS/CLIENTS  
SEEKING ADVICE IN PHARMACIES

SURVEY OF CUSTOMERS/CLIENTS  
SEEKING ADVICE IN PHARMACIES

A quantitative examination of the advisory role of the general practice pharmacist has been attempted and assessed. Consideration must next be given to the quality of the advice. The following hypothesis was formulated and demanded consideration:

"The quality of advice given by general practice pharmacists is of value to the patient and a worthwhile contribution to the safety and primary health care of the community."

In a survey of one thousand patients in 1973<sup>(20)</sup> it was stated that the soundness and acceptability of advice given by pharmacists ranked higher than any other group, and that the lowest incidence of harmful advice came from pharmacists. In 1968<sup>(16)</sup> in a survey of two thousand five hundred people the conclusion was reached that it was most important to obtain the cooperation of chemists shops because a very large amount of self diagnosis and self prescription had been going on and would continue to go on in such establishments. Little other research before or since has been undertaken to establish the quality of the advice given by general practice pharmacists.

The Consumers' Association in 1975<sup>(64)</sup> conducted a survey on pharmacists. Researchers were sent into pharmacies to seek advice and purchase medicines by presenting symptoms of

- (a) minor illness
- (b) potentially serious illness

The report emphasised the conclusions in a negative way by stressing that for minor illness an unhelpful medicine was sold in one

visit in ten, rather than a helpful medicine was sold in ninety per cent of visits. The report also indicated that for potentially serious illness symptoms one in five visits failed to produce advice or resulted in the sale of an unhelpful medicine.

A customer, when seeking advice, is considered to become a client or patient and will thus be referred to as such. It is very difficult to obtain objective data for assessing the quality of the pharmacist's advice because to question a client immediately after receiving the advice does not allow adequate time for the client to apply the advice or assess the treatment recommended. One way in which it was believed data could be obtained dispassionately with minimum interference was by designing a questionnaire for the patient to complete and return independently, anonymously and at leisure after such time that the patient felt had been sufficient to make an assessment of the advice and treatment.

Personal questioning of patients was considered, but for one person to carry out such a task would result in a relatively small number of patients being interviewed who would be concentrated in a small geographical area served by only a few pharmacists. In order to investigate a wider cross section of advice given by general practice pharmacists it was necessary to persuade a number of pharmacists spread over a wide area to involve themselves with a questionnaire handed out to patients to whom they give advice. The questionnaire would need to be uncomplicated, although comprehensive, so that as many patients as possible would respond. A questionnaire was designed and its feasibility tested in a pilot study.

#### PILOT STUDY

The questionnaire and explanatory letter (see Appendix III) were

handed out to patients seeking advice in the author's pharmacy. A stamped addressed envelope was enclosed so that the completed questionnaire could be returned directly to the University and not to the author to minimise any personal bias the patients may have had from a registered pharmacy address.

The objectives of the questionnaire were to:

- (1) Identify the type of person seeking advice
- (2) Establish the symptoms
- (3) Establish the advice offered
- (4) Assess the effectiveness of the advice
- (5) Seek an opinion from the patient about the pharmacist's advisory role.

The size of the questionnaire was considered to be an influence on the response rate, therefore, the above considerations were condensed into fourteen questions which could be arranged on both sides of a single piece of paper. The questionnaires were then distributed to patients seeking advice before leaving the pharmacy.

#### RESULTS OF PILOT STUDY

Twenty five questionnaires were distributed of which ten (40%) were returned completed.

Three questionnaires referred to male patients and six to female patients. The tenth questionnaire referred to a family. It was noted that no patients over 65 years of age, and only one patient in the 40-65 years age group, responded.

Half of the patients for whom advice was sought were present in the pharmacy.

The symptoms presented varied but the majority were for complaints affecting the respiratory tract and skin.

The types of advice given were:

- (a) A proprietary medicine was advised for three patients.
- (b) A medicine made up by the pharmacist was advised for five patients.
- (c) One patient was advised to consult a doctor.
- (d) One patient was reassured on a matter of health care.

Not all of the five patients for whom a medicine was made up by the pharmacist were present in the pharmacy.

Six (75%) of the eight medicines advised were considered to be effective. One medicine was considered helpful in easing the symptoms but further advice had been thought necessary and in fact a doctor had been consulted and treatment prescribed. One medicine was considered ineffective and a doctor was consulted although no indication of the results of the consultation were given. The patient advised to see a doctor did so and treatment was prescribed, and the patient given general reassurance was satisfied.

Six of the eight medicines cost between 50p and £1, the other two costing under 50p.

Four patients were advised to consult a doctor if no improvement occurred, three were advised to consult a doctor if the symptoms became more severe, four were advised to consult a doctor if the symptoms returned after finishing the medicine, and one was advised about any possible side effects.

When asked to rate the advice given by the pharmacist on a Poor, Fair, Good scale, nine indicated Good and one left the question unanswered. The same nine patients responded to the question "Why do you consult your pharmacist?" Eight (90%) thought the pharmacist suitably qualified to give advice and treat minor ailments. Seven (71%) thought the pharmacist able to help them decide whether their symptoms were an indication that medical treatment should be sought. Six (66%) consulted their pharmacist because he was available during most of the working day. None of the patients stated that they consulted their pharmacist because they could not consult their doctor.

The pilot study produced some interesting results and provided the experience for producing a revised questionnaire for wider distribution.

#### SURVEY OF PATIENTS

The two main objectives of the general survey of patients was to collect responses from a large number of patients who were situated over a wide geographical area. A number of pharmacists were contacted and the project explained to them. All the pharmacists contacted expressed their willingness to undertake the distribution of the questionnaire.

The results of the survey indicated the quality of the advice given by the pharmacist and in some way reflected the ability or competence of the pharmacist. The questionnaire, had, therefore, been designed to be completely anonymous so that neither the pharmacist nor the patient could be identified.

Further slight adjustments were made to the questionnaire (See Appendix IV). The original questionnaire was not very clear in establishing the extent to which side effects were experienced. Questions

11 and 12 were rearranged to correct this fault. Approval for the distribution of the questionnaire from a number of pharmacies was sought after consultation with the Pharmaceutical Society and the Pharmaceutical Services Negotiating Committee.

Nineteen pharmacies agreed to take part, half of which were scattered in the West Midlands county and half in North Staffordshire. Fifty questionnaires were sent to each pharmacy with covering letters explaining the object of the survey for the patient. The questionnaire was printed on green paper because it was considered that this might make it appear less formal to the patient. A stamped addressed envelope was included so that the completed questionnaire could be returned directly to the University.

#### RESULTS OF THE PATIENT SURVEY

From returns sent out to and received back from the pharmacists taking part in the survey approximately five hundred and ninety two questionnaires were distributed to patients of which one hundred and sixty eight were completed and returned representing a response rate of 28.4%.

#### Distribution of Patients in Respect of Age and Sex

Seventy two (43%) male and ninety five (56%) female patients responded to the questionnaire (one missing value).

The age distribution of responding patients is illustrated in Figures 9 and 10.

The majority of male patients (29.1%) were in the forty to sixty years age group, although almost a quarter were children under six years of age.

AGE DISTRIBUTION OF MALE PATIENTS

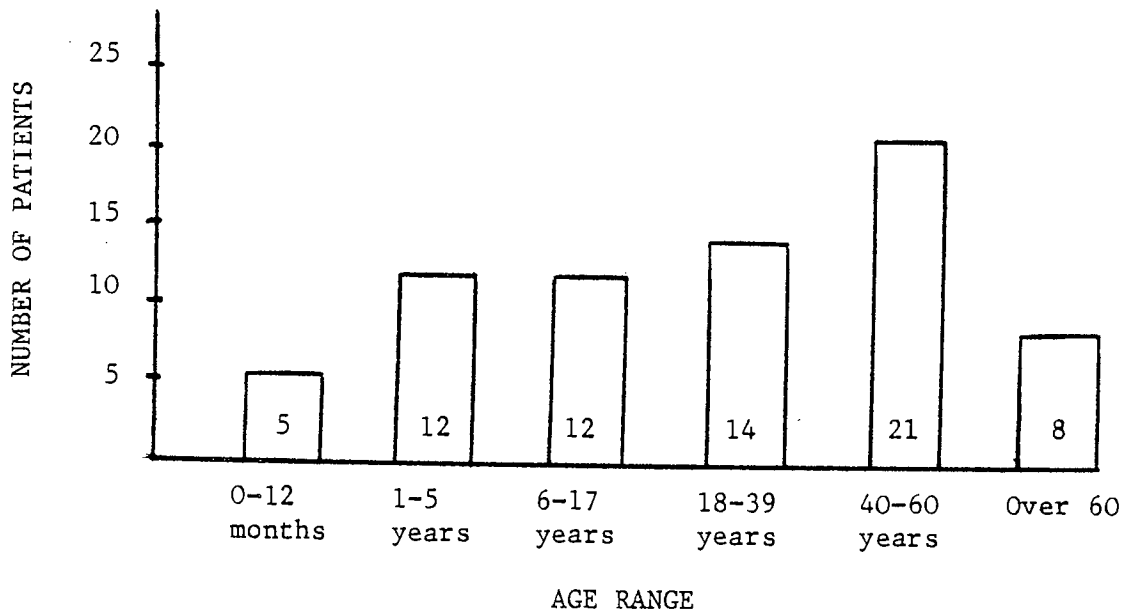


FIGURE 9

AGE DISTRIBUTION OF FEMALE PATIENTS

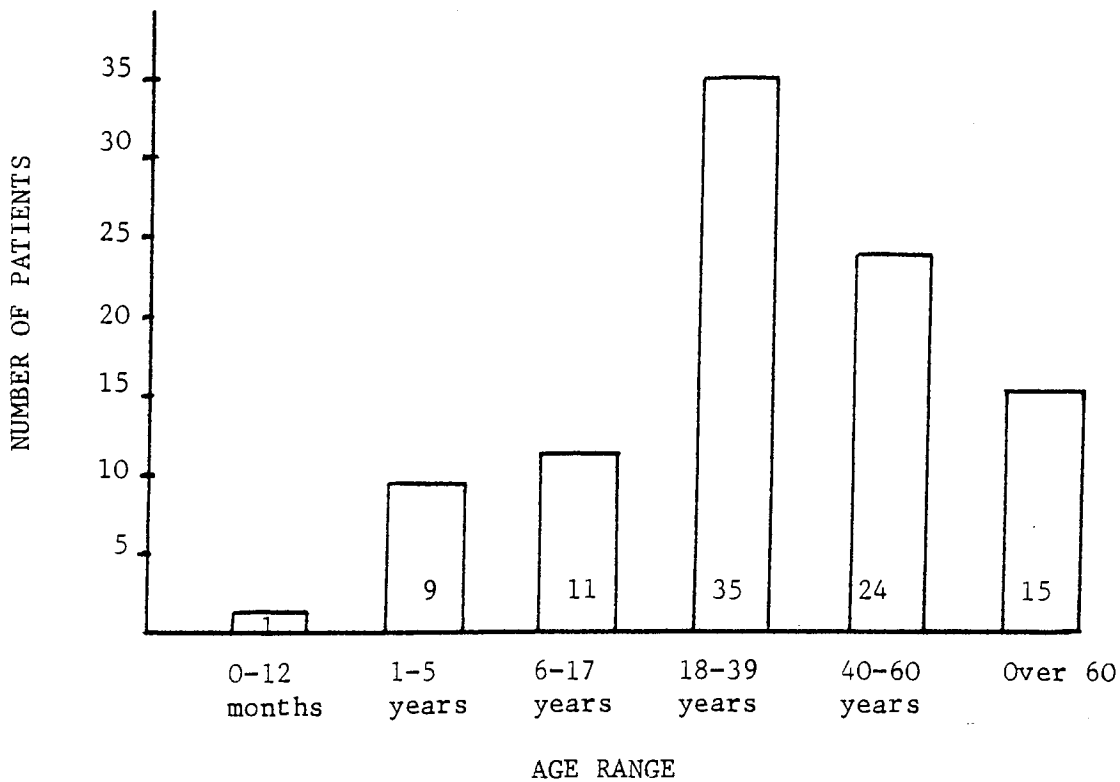


FIGURE 10



The majority of female patients (36.8%) were in the eighteen to thirty nine years age group, while a quarter were in the forty to sixty age group.

Advice was sought more for younger males (40.3% under eighteen) than for younger females (22.1% under eighteen). Approximately 40% of both male and female patients were over forty years of age, although more elderly (i.e. over 60 years) female patients (15.8%) than male patients (11.1%) sought advice. Almost twice as many of the female patients (36.8%) were in the age group of eighteen to thirty nine years than of the male patients (19.4%).

One hundred and sixteen (69%) of the patients for whom advice was sought were present in the pharmacy, although only nine (36%) of children under six years of age were present when advice was sought.

#### Symptoms Presented

The symptoms presented varied from sore throats to athletes foot. They are categorised in Table 17.

SYMPTOMS PRESENTED IN PATIENT SURVEY 1979

	<u>Number of Patients</u>	<u>Per Cent</u>
Coughs, Colds, Sore throat	80	47.6%
Analgesics	12	7.1%
Alimentary Tract	22	13.1%
Skins and Rashes	27	16.1%
Vitamins and Tonics	3	1.8%
First Aid	1	0.6%
Others	23	13.7%

TABLE 17

Almost half the symptoms for which advice was sought involved conditions affecting the upper respiratory tract. The same categories were used in the survey of pharmacies conducted in 1977 but the

proportions do not correspond in both surveys. The 1977 survey quantitatively assessed the medicines sold, while this survey has categorised the symptoms for which advice was sought, the two not necessarily being the same. A symptom categorised as an upper respiratory tract symptom by the patient might well result in an analgesic medicine sale being advised. This survey categorises the symptoms with information supplied by the patient, while the 1977 survey categorised treatments with information supplied by the pharmacist, and it would be unfair to compare directly the recordings from both surveys.

#### The Type of Advice

The questionnaire illustrated five possible types of advice which may have been given. One hundred and eighty five types of advice were recorded as follows:

(a) Ready made medicine	84
(b) Made-up medicine	66
(c) Consult a doctor	22
(d) No treatment necessary	1
(e) General reassurance given	<u>12</u>
	<u>185</u>

A number of patients recorded advice given under two headings. Eight patients who were advised to consult a doctor were supplied with a medicine (six ready made and two made up). Two patients who were given reassurance were also advised to consult their doctor while six of these patients also received a ready made medicine. The main type of advice indicated by each of the one hundred and sixty eight patients is illustrated in Table 18.

TYPES OF ADVICE IN PATIENT SURVEY 1979

	<u>Number of Sales</u>	<u>% of Advised Sales</u>	<u>Pharmacy Survey 1977</u> (See Table 6)
Ready Made Medicine	72	42.8%	42.4%
Made-Up Medicine	64	38.1%	32.3%
Consult a Doctor	20	11.9%	12.0%
No Treatment and Reassurance	12	7.2%	13.3%
	<u>168</u>		

TABLE 18

Comparison of the distribution of types of advised medicines in this patient survey with those in the pharmacy survey of 1977 is illustrated in Figure 11.

One hundred and thirteen (75.3%) of the one hundred and fifty patients who received medicines stated that the medicines were effective, twenty eight (18.6%) stated that the medicines were helpful in relieving the symptoms but they needed to seek further advice, and four (2.6%) stated that the medicines were ineffective (five were missing values). None of the four patients who stated that their medicines were ineffective revealed any further course of action, while thirteen of the twenty eight patients who stated that their medicines were helpful in relieving the symptoms indicated that they consulted a doctor.

More than half the medicines bought (56.7%) cost between fifty pence and one pound and more than one third (38%) cost below fifty pence, see Figure 12. Prescription charges at the time of the survey were forty five pence for each item. It can be anticipated that with increased prescription charges, seventy pence from July 1980 and a

DISTRIBUTION OF TYPES OF ADVICE

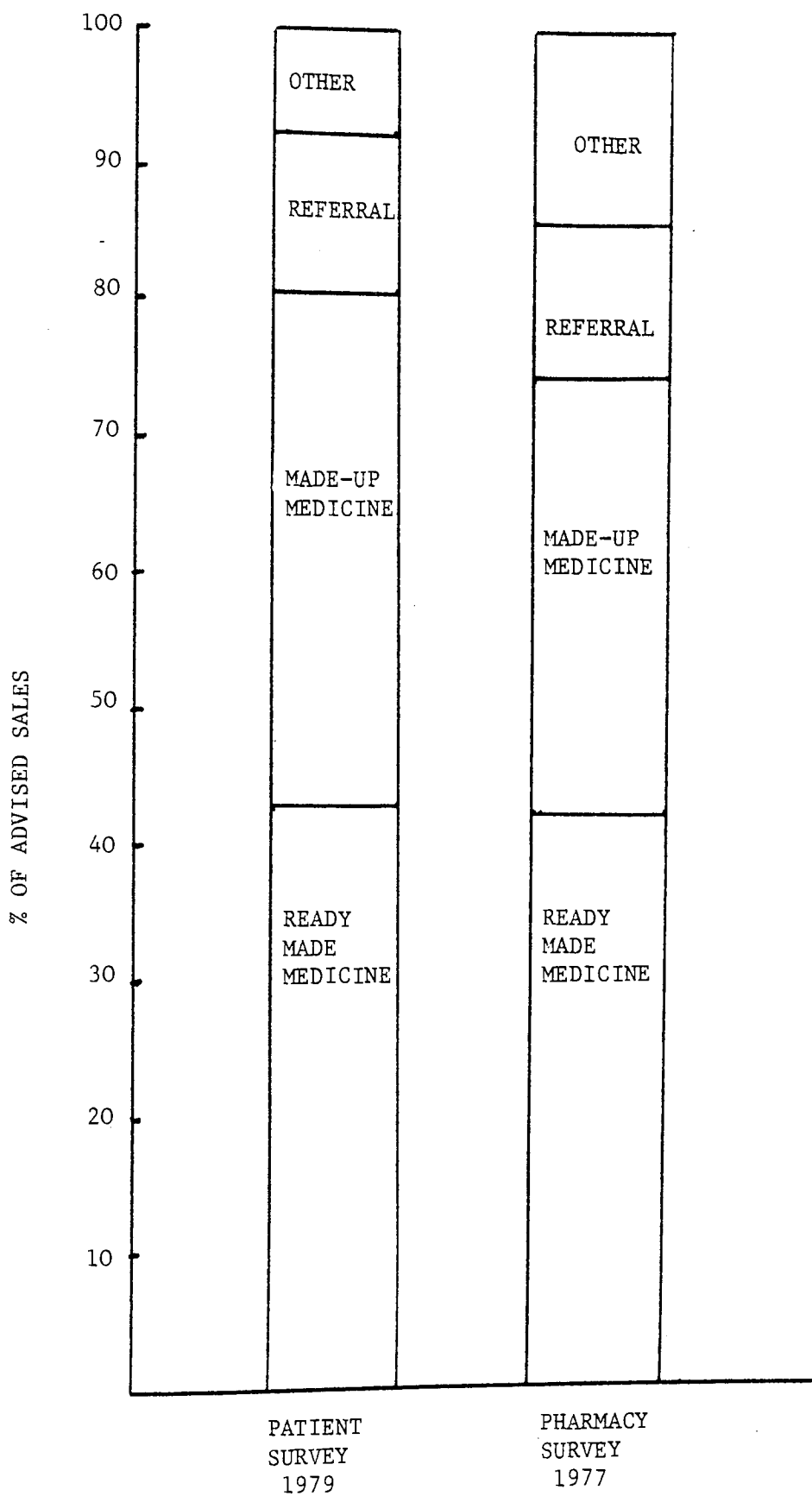


FIGURE 11

DISTRIBUTION OF MEDICINE COST

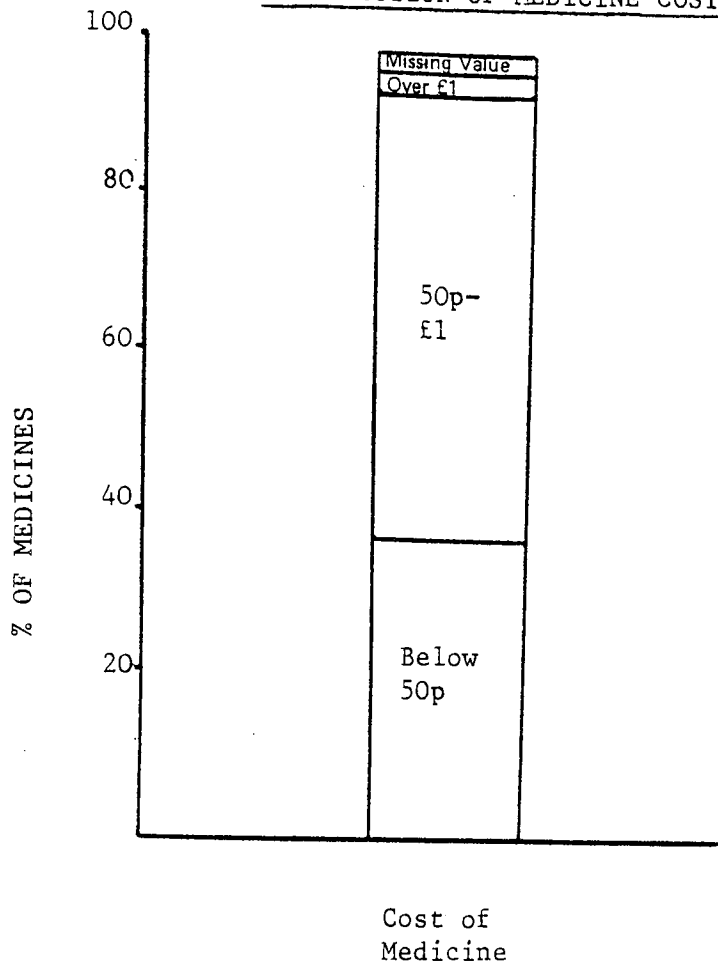


FIGURE 12

proposed one pound per item from December 1980, more patients will be prepared to spend larger amounts on medicines for self treatment.

Fourteen patients had been advised to consult a doctor. Three patients did not follow that advice, although one of these indicated that the symptoms had cleared, and nine patients stated that they did consult a doctor (two missing values). Two thirds of these patients (6) received treatment from their doctors, one was given no treatment and two were referred to hospital (one after treatment). Nine of the twelve patients who consulted a doctor after their medicine was only helpful in easing the symptoms received treatment from their doctors, one was given no treatment and two were referred to hospital (one after treatment).

Only one patient had been advised that no treatment was necessary and that patient indicated satisfaction with that advice. Two of the patients who were given general reassurance also indicated satisfaction with that advice.

Patients were asked if they were specifically advised about their symptoms and they responded as follows:

(a) fifty (30%) were advised but if no improvement was obvious within a certain time, e.g. 48 hours, they should consult a doctor.

(b) thirty two (19%) were advised that if the symptoms became more severe they should consult a doctor.

(c) twenty (12%) were advised that if the symptoms returned after finishing the medicine they should consult a doctor.

When asked about side effects to the medicines supplied thirty eight patients (22.6%) indicated that they were warned of side effects

and seventy five patients (44.6%) indicated that they had not been warned of any side effects. Only nine (5.3%) patients actually experienced any side effects, eight having been warned and one who had not been warned. The side effects specified were eight experiences of drowsiness and one of lack of sleep due to tight chest.

#### Patient's assessment of pharmacist

Each patient was asked to rate the advice given by the pharmacist and Figure 13 illustrates their response.

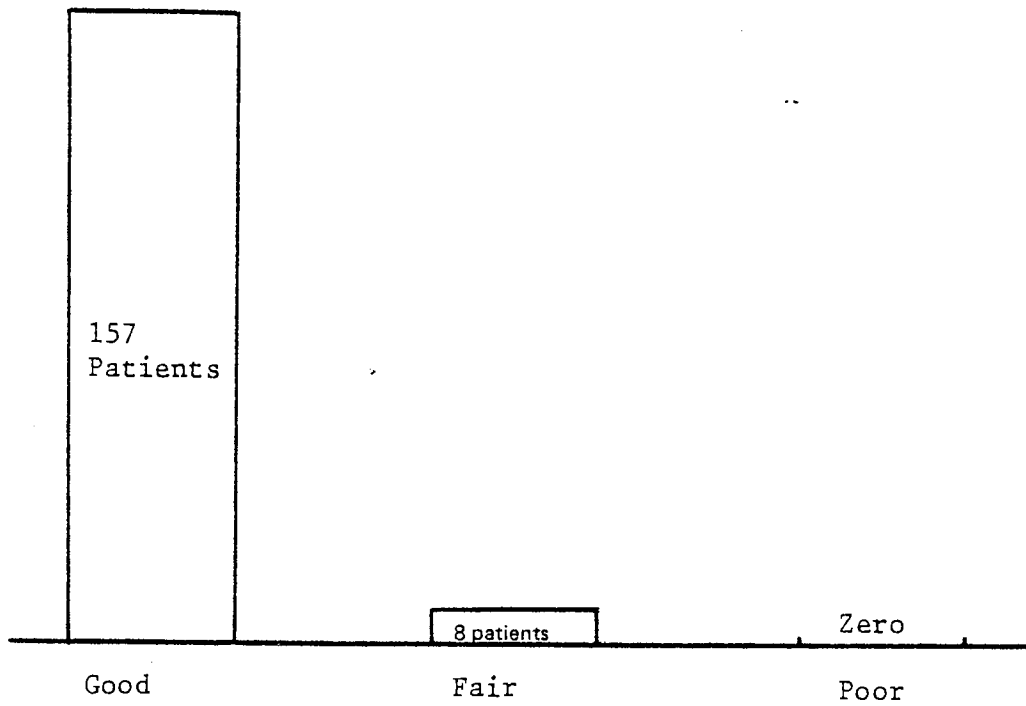
95% of all the responding patients rated as good the advice given by the pharmacist.

When asked to indicate why they consulted the pharmacist using the given list of four options the response was (Figure 14):

- (a) Seventy nine patients (47%) indicated that it was not convenient to consult a doctor and the pharmacist was the next best person.
- (b) Sixty eight patients (40%) consulted the pharmacist because he was available during most of the working day.
- (c) One hundred and thirteen patients (67%) indicated that they felt that the pharmacist was suitably qualified to give advice and treat minor ailments.
- (d) Eighty three patients (49%) felt that the pharmacist was able to help them to decide whether their symptoms were an indication that medical treatment should be sought.

To complete the questionnaire patients were invited to add their own comments about consulting their pharmacist and sixty one patients responded. Comments varied widely from:

PATIENT ASSESSMENT OF PHARMACIST'S  
ADVICE



3 patients did not respond.

FIGURE 13



REASONS FOR CONSULTING THE PHARMACIST

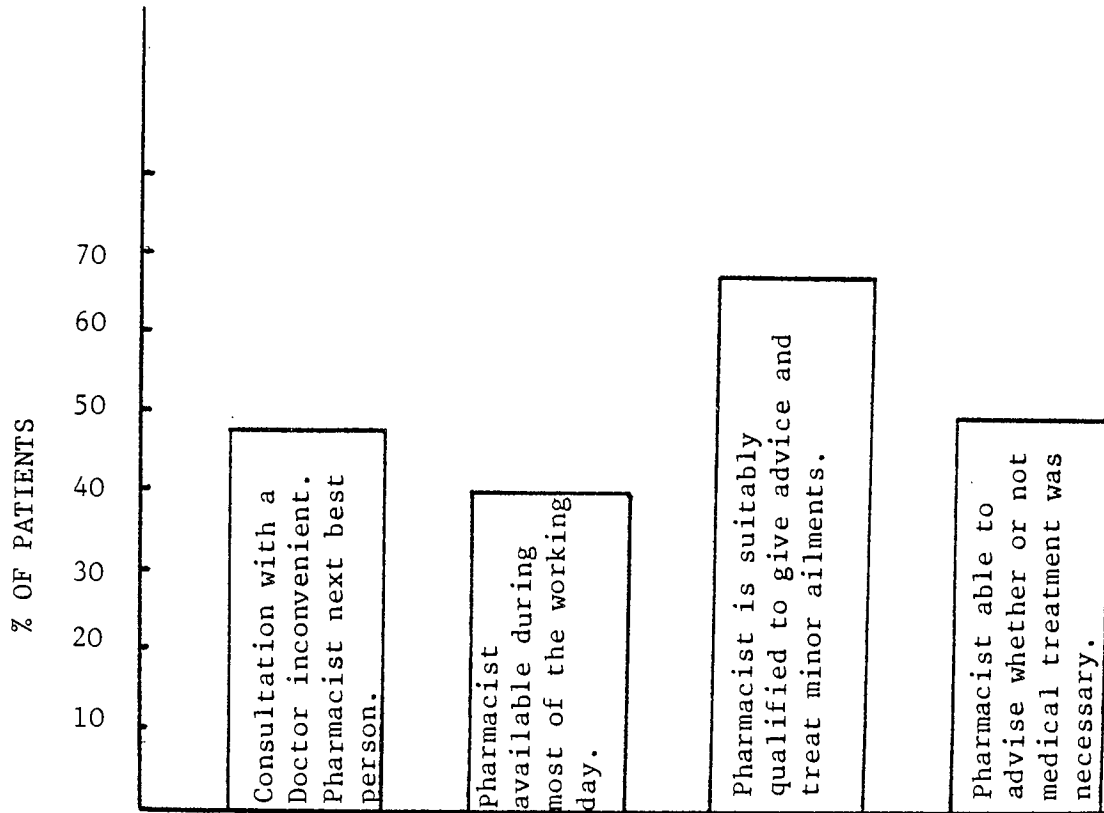


FIGURE 14

- (i) "Not all chemists are willing to help" - 1.6% of patients.
- (ii) "Pharmacist is very helpful" - 30% of patients.
- (iii) "Making an appointment with a doctor sometimes took days and presented a barrier to the consultation with a doctor and therefore a pharmacist was consulted for advice" - 18% of patients.
- (iv) Faith was expressed in the pharmacist's advice - 16% of patients.
- (v) Pharmacist's advice was stated to be better than doctor's - 11.5% of patients.
- (vi) Patient did not want to bother their doctor - 8.2% of patients.
- (vii) Pharmacist usually had time for the patient - 6.6% of patients.

#### PHARMACIST'S REACTION TO THE SURVEY

The pharmacists involved in distributing the questionnaires were asked for their comments about the project. The main comment seemed to be that time was the all important factor in distributing questionnaires. Inevitably advice is often sought at busy dispensing periods and time had to be taken to explain the reasons for the questionnaire and the procedure for completing it. Some pharmacists felt that they had to choose the patients to whom they handed a questionnaire because of their ability to understand it, e.g. immigrant or elderly patients. Sometimes an advisory session could be lengthy and detailed and difficulty was experienced in closing such a session by handing out a questionnaire, again resulting in a choice of patient. Choosing patients could render the results too subjective, but conversely could perhaps result in a higher response rate. Having chosen to print the questionnaire on a green form to make it appear less formal

surprisingly comments were received that it looked too official - "like an income tax form" - although generally the questionnaire was well received by the pharmacists. Most of the pharmacists taking part felt that it would have been better to distribute the questionnaires over a longer period, say a month, rather than just one week, but after consideration of the experience of the pilot study the initial impact of keenness for participation is lost after a few days and choice of patient becomes an increased factor thus increasing the subjectivity of the exercise.

#### SUMMARY

Distribution of questionnaires from busy pharmacies inevitably presents difficulties for the pharmacist and is time consuming with the necessary explanations which have to be given. Sufficient information must be sought in a survey of this kind for any meaningful result and therefore a detailed questionnaire is necessary, but this again presents difficulties for the patients asked to complete it. The very nature of the survey meant that the patients had to wait until sufficient time had elapsed for them to assess the advice given so that they needed enough motivation to pick up the questionnaire again after a few days and complete it, and obviously the response rate depended on the patients' motivation. Dissatisfied patients may be more motivated to register their dissatisfaction by responding more readily than satisfied patients, although the awareness of the pharmacist to the monitoring of his advice could counterbalance any possible distortion of the response.

One hundred and sixty eight of the five hundred and ninety two questionnaires distributed were returned representing a response of

28.4%. More female patients (56%) responded than male patients (43%). Almost 37% of the female patients seeking advice were in the age range of 18 to 39 years while this age range only produced 19.4% of the responses from the male patients, but this is to be expected since this age range would include housewives with young families on the one hand and working fathers on the other so that it is easier for the females in this age group to consult the pharmacist during the working day. Interestingly from forty years of age onward the same proportion of male and female patients (approximately 40%) consulted the pharmacist.

More than two thirds of patients seeking advice from the pharmacist were present in the pharmacy. Almost four out of ten patients who were not present in the pharmacy and for whom advice was sought received medicines made up for them by the pharmacist. The exemption of pharmacists to make up medicines for the treatment of individual patients without the necessity of a product licence is established by the Medicines Act 1968<sup>(65)</sup>. It is clearly stated, however, that the patient should be present in the pharmacy for the licence exemption to apply. Counter prescribing in general for patients not present in the pharmacy will be considered by some to be unwise; pharmacists in general practice, however, will surely quote instances of patients, especially children, where symptoms would be exacerbated by going out of their homes. This survey showed that sixty four per cent of children for whom advice was sought were not present in the pharmacy. Parents or relatives of these patients are usually quite capable of discussing the symptoms and determining that self treatment is appropriate. Pharmacists must be aware of the Medicines Act legislation and only advise medicines for which a product licence has been issued, when they consider a medicine is appropriate for the treatment of symptoms of a patient not present in the pharmacy.

The symptoms for which advice was sought varied widely but almost half of them were for conditions affecting the upper respiratory tract. Interestingly 16% were symptoms of skin complaints and rashes and one third of the patients referred to consult a doctor presented symptoms within this category. This emphasises the consideration brought out in the pharmacy survey conducted in 1977 when it was suggested that:

(a) general practice pharmacists do not, at the moment, have the privacy of a consulting booth or room to undertake first aid treatment satisfactorily, and

(b) the restricted availability of suitable preparations, such as topical antibiotics, for use in first aid and skin complaints necessitates a higher referral rate for this category.

Three quarters of the patients receiving medicines indicated that the medicines were effective, while a further one fifth of patients indicated that the medicines were helpful and half of these then consulted a doctor. Only four patients out of one hundred and fifty receiving medicines indicated that the medicine was ineffective. A large number of patients indicated that the pharmacist specifically advised them about their symptoms and treatment, e.g. consult the doctor if no improvement within forty eight hours. Many medicines do not produce any side effects and although only thirty eight patients were warned of any side effects in fact only nine patients reported that they had experienced any side effect and only one of these had not previously been warned.

It is considered that this survey has helped to affirm qualitatively the value of the general practice pharmacist in the community.

95% of the patients responding indicated that the advice from their pharmacist was good and no patients rated their pharmacist's advice as poor. 67% of the patients indicated that they feel the pharmacist is suitably qualified to give advice and treat minor ailments.

They hypothesis that:

"the quality of advice given by general practice pharmacists is of value to the patient and a worthwhile contribution to the safety and primary health care of the community"

is considered to have been confirmed by the response to this questionnaire and survey.

CHAPTER 5

SUMMARY AND CONCLUSION

## SUMMARY AND CONCLUSION

The pharmacist in general practice has been considered to be under-exploited<sup>(1)</sup> and it has been suggested that he must give up handling non-pharmaceutical goods personally.<sup>(3)</sup> This investigation was undertaken to present evidence of the role of general practice pharmacists in community health care. After preliminary investigations a national survey of randomly chosen pharmacies showed that thirty one per cent of medicine sales were advised sales. Three quarters of these advised sales resulted in the sale of a medicine and one quarter were either referrals to seek medical advice or the giving of general health advice which did not necessarily produce any direct financial gain for the pharmacist. This quantitative assessment indicates the extent of the advisory role undertaken by general practice pharmacists and as in a Northern Ireland survey in 1980<sup>(66)</sup> presents clear evidence of the valuable and effective role of general practice pharmacists in primary health care.

### Pharmacists as members of the health care team

Primary health care can be defined as first contact care, so that the pharmacist, because of his accessibility, is in an ideal situation to be involved in health care. His involvement as a member of the health care team must be seen in regard to what he, as an individual, can provide to sustain and improve health within the community rather than actually working alongside colleagues also involved with health care. The pharmacist's ease of access makes him an important person in any health education campaign<sup>(67)</sup> and his knowledge of medicines enables him to competently advise the public about over-the-counter medicines.<sup>(68)</sup>



### Use of the pharmacists' skills

It has been suggested that pharmacists could make a greater contribution in advising doctors on prescribing<sup>(69)</sup> and a more patient focussed education for the pharmacist was called for. Closer co-operation between pharmacists and doctors in the care of patients in hospital has led to the pharmacist being associated with clinical decisions in the treatment of patients, and a further contribution of the pharmacists' skills could be made in hospitals by using the ward pharmacist, who should, of necessity be an experienced senior pharmacist, as an adviser to patients and medical and nursing staff. The pharmacist in general practice has everyday contact with the public and his knowledge should be more fully utilised. Undue emphasis on tablet counting can denigrate the pharmacist's training<sup>(70)</sup> and should be done by technicians adequately supervised so that the pharmacist can always check for incompatibilities, interactions and incomplete directions as well as give advice to the patient. The more that pharmacists remain involved with dispensing unaided the less time they can devote to advising patients on their prescribed medicines. Similarly, if pharmacists are personally involved with the sale of non-pharmaceutical goods they have less time to advise their customers on the most appropriate medication for self treatment. This is not to imply that pharmacies should not be involved with the sale of non-pharmaceutical goods. Adequate arrangements can be made for non-pharmacists to direct the non-pharmaceutical side of the business although a larger turnover is likely to be required because of the increased overheads involved, and therefore only the larger type of store could continue to merchandise non-pharmaceutical goods if the majority of pharmacists are to really develop a more significant advisory role. An obvious danger in this

type of development is that the control of the business could be taken away from the pharmacist. One large multiple pharmacy group has avoided this problem by employing vocational pharmacists to control the pharmaceutical aspects of their stores and a commercial pharmacist manager to control the total operation of the store. Most pharmacies operate as independent units although some operate as departments within a store under the sole direction of a pharmacist, where the store is controlled by non-pharmacists.

A new type of operation has been suggested for pharmacies within a store environment<sup>(71)</sup> resulting in many inquiries from pharmacists. The operation involves the leasing of spaces within the store to doctors, dentists, opticians and pharmacists. Concern has been expressed that the pharmacy units must be allowed to operate independently like the other health professionals.<sup>(72)</sup> One advantage of such an operation that has been suggested<sup>(73)</sup> is that such medical centre facilities within a store would create an environment in which pharmacist and prescriber contact could be more than by telephone. More than fifty per cent of pharmacies are owned by single proprietors and most of these could not develop into large stores, therefore the leasing of space within a large store is an attractive way of operating a pharmacy within a city centre environment. One side by side pharmacy has been described<sup>(74)</sup> where the professional and commercial sides of the pharmacy were separated within the same premises and found to be effective using increased turnover, customer reaction, staff acceptance, return on investment and profitability as indicators.

#### Planned Pharmaceutical Services

Pharmacy contractors have the automatic right of entry to the pharmaceutical list except, as laid down in the Health Services Act 1980,

in areas covered by the agreement made under the Cothier Committee<sup>(75)</sup>. Agreement has not yet been reached on the rational location of pharmacies and it is difficult to understand how legislation can be passed to eliminate the automatic right of entry to the pharmaceutical list for a contractor in an area not served by a pharmacy and allow contracts to be issued for areas with an adequate pharmaceutical service. From July 1980 a basic practice allowance payment was made to existing pharmacies and for new pharmacies opening more than one kilometre from an existing pharmacy. This payment was set at two thousand pounds per annum per pharmacy and the Pharmaceutical Services Negotiating Committee hope that once agreement on rational location can be reached this payment could become a practice allowance and be paid at a higher level.<sup>(76)</sup> An agreement on rational location would not be needed if this allowance was paid at a higher level, for example, twenty five per cent of total remuneration, because pharmacies would only open in an area where they would be sure to receive the allowance, that is currently if more than one kilometre from an existing pharmacy. The planned distribution of pharmacies in the pharmaceutical service may be considered to be a restraint of trade, however, a recognition of the value of the pharmacist in health care has lead to consideration of the adequacy of the pharmacy network. In a recent note published in the Family Practitioner Services<sup>(77)</sup> the Department of Health and Social Security suggested that everyone in urban areas should ideally have a pharmacy within one mile of their home or doctor. The payment of a basic practice allowance is the first step in the recognition of the pharmacist's contribution to health care, however, the second and larger step that can be made is not the amount of payment received for service but the recognition of an adequate network of pharmacies to serve the community.

A large increase in dispensing could reduce a pharmacy's dependence on the sale of non-pharmaceutical goods. As the number of pharmacies has decreased the proportion of National Health Service business has increased, however, it is arguable whether or not their dependence on non-pharmaceutical business has been reduced. In 1971<sup>(78)</sup> the average number of prescriptions per pharmacy was just over twenty five thousand and the gross profit received was 27%, and in 1979 the average number of prescriptions per pharmacy was more than thirty five thousand six hundred and the gross profit was reduced to 19.6%. The increase in dispensing has been accompanied by a reduction in profitability and consequently the dependence on the sale of non-pharmaceutical goods remains for most pharmacies.

#### Changes in the pattern of pharmaceutical practice

A fundamental change for the future of pharmacy has been forecast.<sup>(4)</sup> The health centre revolution has brought into existence pharmacies either within or alongside health centres which dispense for large numbers of doctors, whereas traditional pharmacies have, on average, usually dispensed the prescriptions issued by two or three doctors. Some pharmacists prefer to operate a health centre pharmacy to a traditional high street pharmacy.<sup>(79)</sup> These fewer larger pharmacies associated with health centres become profitable because of their volume of business, but there is the danger that the pharmaceutical services will become seriously depleted if only available in or near health centres. A community of twenty five thousand people should reasonably expect the medical services of ten doctors. Before health centres these doctors would have been grouped into two or three practices scattered within the community served by as many pharmacies. Medical manpower surveys<sup>(80)</sup> have shown that partnerships of four or

more doctors are increasing while two or three doctor partnerships and single handed practices are decreasing. When the doctors in a community practice from a health centre one pharmacy can cope with the dispensing of the prescriptions issued from the health centre, but the centralisation of medical and pharmaceutical services could mean that access to these services is made more difficult for very many patients, especially the elderly and those with young children, who have to travel so much further. Pharmacies have closed within a community when a health centre pharmacy has opened<sup>(81)</sup>, therefore the health centre revolution needs to be accompanied by a rational plan for the pharmaceutical services within the area, taking due consideration of the importance to the community of the pharmacy in fields of activity other than the dispensing of prescriptions.

#### Self medication

People have always been willing to treat their own illnesses. The European Proprietary Association annual meeting in 1980<sup>(82)</sup> discussed European Economic Community proposals for a directive on advertising and future product registration requirements, and it was maintained that the meeting was useful and provided the pharmaceutical industry with a solid base from which to propound the case for self care as a right and an individual responsibility. Self medication has not diminished since the beginning of the National Health Service and almost one third of the money spent on medicines in the United Kingdom is for medicines bought without prescription.<sup>(15)</sup> The cost of medicines on prescription has quadrupled in the nineteen seventies<sup>(83)</sup> so that the yearly prescription cost per person in 1979 was £16.58. This would indicate that the yearly cost of over-the-counter medicines would be over eight pounds per person and a pharmacy serving a community

of five thousand people would have the potential for over forty thousand pounds a year turnover from the sale of medicines.

Self treatment was discussed on a radio programme in 1980<sup>(84)</sup> when the public were told that it was part of the pharmacist's professional responsibility to act as a filter and decide from the symptoms presented whether to deal with them themselves, whether there was nothing that

• needed to be done, or whether the patient should consult a doctor.

The pharmacist's knowledge of medicine enables him to advise on symptomatic treatment and to suggest that he is able to treat minor ailments implies that he must be capable of deciding what is a minor ailment and what is indicative of a more serious illness. The formal education of pharmacists includes little clinical training and instruction in therapeutics and pathology, and if pharmacists are to undertake an advisory role fully their education must be extended to include this involvement even if that means lengthening the time of training. Some most useful articles have been published<sup>(85)</sup> to help improve the clinical knowledge of general practice pharmacists and together with additions to formal education and relevant post graduate education, should provide pharmacists with the expertise to more effectively carry out their advisory role.

#### Availability of medicines

When the Medicines Act was passed in 1968 it was considered that the sale of medicines should in principle generally take place through pharmacies. The Act, however, allowed for two lists as exceptions to this principle, firstly the Prescription Only Medicines List (POM)<sup>(86)</sup> to include an ever increasing number of more potent medicines, and secondly, the General Sale List (GSL)<sup>(87)</sup> to include medicines, considered to be relatively harmless, generally available for sale.

Those medicines not included in either list remain available only from pharmacies by or under the supervision of a pharmacist. Lobbying for the inclusion of medicines in either of these two lists is strong and there is a case for suggesting that there are too many medicines in both lists. Pharmacists should possibly use the power of lobbying to have a more effective range of medicines available to them for use in their advisory role. The general sale list was completed to ensure that simple remedies would be available to the community even in the absence of a pharmacy "with reasonable safety" ... and "otherwise than by or under the supervision of a pharmacist." If agreement is reached on a rational distribution of pharmacies there would be no need for the distribution of G.S.L. products other than through pharmacies.

It has been suggested that more potent medicines should be available for self medication<sup>(13)</sup>, and in America topical preparations containing up to 0.5% of Hydrocortisone have been prepared for over-the-counter sale following the Federal Drugs Administration advisory committee recommendation to change such preparation from 'prescription only' to 'over the counter' sale<sup>(88)</sup>. However, self medication must have its responsible safeguards and restrictions or limitations so that serious illness is not overlooked or mistreated. The non-availability of more potent medicines acts as a limiting barrier between self medication and seeking medical advice. However some potent medicines could be made available, not necessarily on demand, but for use by the pharmacist only in the exercise of his advisory role. This would involve two classes of pharmacy only medicines, those available, on request, for sale by or under the supervision of a pharmacist, and those available for supply by a pharmacist when advising on the treatment

of minor ailments when a prescription book entry or some other record of the supply would be required to be made. The need for more co-operation between the medical and pharmaceutical professions is apparent if the pharmacist's role in symptomatic relief of minor ailments is to be properly defined.<sup>(89)</sup>

#### Effects of advertising

This investigation has quantified the advisory role of general practice pharmacists. Further, it has highlighted the effect on the advisory role of advertising. There was a low incidence of advice requests for well advertised groups of medicines, such as analgesics (20.8%), but a high incidence of advice requests for the less extensively advertised groups of medicines, such as skin creams (43.2%).

#### Made up counter prescribed medicines

On average, a little more than 40% of advised sales involving the sale of a medicine were provided for by medicines made up by the pharmacist. In general, the financial return may superficially be greater from the sale of a medicine made up by the pharmacist, but the limiting factor must be the time involved in preparation.

#### Large multiple and town centre pharmacies

Almost twice as many medicine sales were recorded in large multiples than in single proprietor owned and small multiple pharmacies, and more than one and a half times as many medicine sales were recorded in town centre pharmacies than in suburban and rural pharmacies. The number of advised sales in all types of pharmacy was close to the average of twenty five, therefore indicating, firstly a uniformity among pharmacies, but secondly a lower proportion of advised sales in town centre and large multiple pharmacies. The large volume of non-advised



medicine sales in these pharmacies was recorded probably because of better merchandising, the availability of a wider range of products and more effective marketing within these types of pharmacy.

#### Advice with prescribed medicines

Almost one third of the medicine sales were recorded to have been advised sales and it could reasonably be expected that at least the same proportion of patients would be advised about their prescribed medicines. However, only seventeen per cent of patients were advised about their prescribed medicines which closely resembles the figure of eighteen per cent quoted at a symposium in 1980 on information given to patients about their medicines.<sup>(90)</sup> The need for pilot studies to test information schemes was stressed at the symposium as well as the need for verbal reinforcement of information because up to fifty per cent of patients could not even understand the label on their prescribed medicine. This difficulty in understanding labels was highlighted in a report by the Adult Literacy Support Services Fund in 1980<sup>(91)</sup> when it was indicated that warning labels on medicines were difficult to understand for a large percentage of adult poor readers. Prescribed medicines are usually more potent medicines than those bought over the counter and it should be expected that their supply should be accompanied by relevant advice on their correct usage. This investigation suggests a poor and inadequate response from the pharmaceutical profession to that need for advice and probably reflects the reluctance of many pharmacists to engage dispensing technicians in order to leave them free to perform their advisory role in direct contact with the patient.

#### Acceptability of advice

It was indicated in the qualitative survey that seventy five per cent of patients receiving advised medicines found them effective while

a further twenty per cent found that the medicines were helpful in relieving the symptoms. Only four patients out of one hundred and fifty indicated that the advised medicine was ineffective. Ninety five per cent of responding patients rated the advice from their pharmacist as good, and the survey indicated the acceptability of the advisory role of general practice pharmacists by the general public.

#### Relationship between the medical and pharmaceutical professions

Suspicion and rivalry between the medical and pharmaceutical professions has existed for hundreds of years and it is inevitable that the interests of both professions overlap. Medical practitioners cannot satisfactorily diagnose and prescribe for their patients without an adequate knowledge of medicines, and pharmacists cannot become experts on medicines without a greater knowledge of their actions and uses in practice. This overlapping has led to accusations of encroachment by both professions. Pharmacists regard dispensing doctors as largely unnecessary and a drain on the livelihood of pharmacy. It is true that the number of dispensing doctors has increased every year from 1970 to 1977<sup>(92)</sup> so that their number corresponds to almost twenty five per cent of the pharmacies operating in the United Kingdom. However there is justification for the medical profession to handle their own medicines for emergency supplies only. Rural areas could be provided with a pharmaceutical service if rational location of pharmacies was agreed, and even emergency supplies could be made through an organised network of pharmacies, as proposed in 1979<sup>(93)</sup>. The livelihood of medical practitioners in rural areas depends on their provision of dispensing and they are therefore reluctant to give up their dispensing until their livelihood is adequately protected. To have a direct financial interest in what the doctor prescribes cannot be in

the best interests of the patient. The restriction of the financial interest in the medicines prescribed would appear a just imposition on the medical profession.

A similar imposition would appear necessary for pharmacy if a prescribing role by pharmacists for the symptomatic treatment of minor ailments was brought within the National Health Service<sup>(94)</sup>. It would be inappropriate to call for the abolition of dispensing doctors and at the same time introduce a prescribing role for pharmacists. Most of a pharmacist's income comes from the profit made on the supply of medicines. A pharmacist's value to the community as an adviser is being better recognised and should be reflected in an agreement for the rational location of pharmacies, although, their main source of income should continue to be from the profit on the supply of medicines.

#### Conclusion and future developments

General practice pharmacists should work to increase the range of useful medicines available without prescription, but should cease to emphasise their prescribing role and concentrate more on their advisory role both to the medical profession and the public. Pharmacies could become medicine information centres rather than pseudo-surgeries. The advisory role of the general practice pharmacist and the acceptability by the community of that role have been assessed. Closer co-operation between the medical and pharmaceutical professions could improve the total medical care available to the community by increasing the use of the pharmacists' skills and knowledge. Investigations should be undertaken to test the feasibility of increasing the pharmacist's involvement with the National Health Service in areas such as the maintenance of patient records and the issue of repeat prescriptions. Information booklets could be produced for general practice

pharmacists as guides to counter prescribing and health care advice, and the counter prescribing role of pharmacists could be further improved by agreeing with medical colleagues a system of reference to doctors of patients for whom pharmacists have counter prescribed. Further studies are necessary to investigate what changes should be made to the education and training of pharmacists in order that they may be better equipped to more effectively carry out their advisory role for the improved health care of the community.

APPENDICES

FROM: Michael Phelan, Pharmacy Practice Lab., Pharmacy Department,  
University of Aston in Birmingham.

Dear Colleague,

I am conducting a Research Project to establish the role of the General Practice Pharmacist in self Medication and Counter Prescribing.

As many of you know, recent research has been undertaken into the role we play in the N.H.S., but as a General Practice Pharmacist, I believe our usefulness in Health Care extends beyond the N.H.S. and it is the intention of this project to determine what role Pharmacists are playing outside the duties of the N.H.S. contract.

I need the help of as many General Practice Pharmacists as possible so that the results obtained may be truly representative.

I therefore, ask you to complete the enclosed questionnaire for the day stated. Being in General Practice myself I realise that time is all important, but I have tried to design the questions so as to minimise the amount of time to be spent answering them.

I want to stress that the identity of individuals and business details will be treated in the strictest confidence, but to authenticate the returns, I must ask for your name and address to be included on the form.

QUESTIONNAIRE

NAME AND ADDRESS OF PHARMACY :-

SECTION I

PLEASE TICK

- |  |                          |
|--|--------------------------|
| 1) Type of Pharmacy  |                          |
| a) Dispensing only (i.e. dispensing more than 80%)                             | <input type="checkbox"/> |
| b) Traditional (i.e. more or less equal balance between dispensing and O.T.C.) | <input type="checkbox"/> |
| c) Mainly O.T.C. (i.e. dispensing less than 20%)                               | <input type="checkbox"/> |
| 2) Location  |                          |
| a) Town Centre (i.e. in a large shopping area)                                 | <input type="checkbox"/> |
| b) Suburban (i.e. serving a local community)                                   | <input type="checkbox"/> |
| c) Rural   | <input type="checkbox"/> |
| 3) Prescription throughput   |                          |
| a) Under 12,000 p.a.   | <input type="checkbox"/> |
| b) Between 12,000 and 24,000 p.a.  | <input type="checkbox"/> |
| c) Between 24,000 and 48,000 p.a.  | <input type="checkbox"/> |
| d) Over 48,000 p.a.  | <input type="checkbox"/> |
| 4) Ownership   |                          |
| a) Single proprietor   | <input type="checkbox"/> |
| b) Small multiple (less than 10 shops)   | <input type="checkbox"/> |
| c) Large multiple  | <input type="checkbox"/> |

SECTION II

ON ..... DATE ..... would you please make the following records of Medicine Sales by simply making a mark in the BOX PROVIDED.

Class of Medicines	A Normal Sale (i.e. asked for specifically by customer		B Advice asked for from Pharmacist (do not include advice given to patients receiving NHS dispensed medicines, unless they also wish to purchase another medicine).					
			(i) Proprietary Medicine Advised		(ii) Counter- Prescribed Medicine		(iii) Refer to Seek Medical	
	Items	Total	Items	Total	Items	Total	Items	Total
Cough, cold, sore throat								
Analgesics								
Stomach problems (indigestion and nausea)								
Bowel problem (laxatives, anti- diarrhoeas)								
Skin - acne, eczema								
Vitamins, Tonics								
Allergies								
First aid								
Others- name if desired								

SECTION III

How many N.H.S. items were dispensed on the above date?





# THE UNIVERSITY OF ASTON IN BIRMINGHAM

Gosta Green, Birmingham B4 7ET/Tel: 021.359 3611 Ex 6253

## Department of Pharmacy

Professor of Pharmaceutical Microbiology: M R W Brown, MSc, PhD, FRS

Professor of Pharmacology: C E Farry, BPharm, BSc, PhD, MPS

\*Professor of Medicinal Chemistry: D G Wiberne, PhD, DSc, C.Chem, FRIC

(\*Head of Department this Session)

PHARM/MJP/JF/

10th March, 1977.

Dear Colleague,

### COUNTER PRESCRIBING AND SELF MEDICATION - WHAT IS THE ROLE OF GENERAL PRACTICE PHARMACY?

Over the past few years you will have noticed in the Pharmaceutical Press, that considerable research has been conducted into the role of the General Practice Pharmacist in relation to the N.H.S. Contract. It has recently been announced that some of the proposals for a new contract have been accepted and I hope they will improve the provision of the General Practitioner Pharmaceutical Service.

However, as every Pharmacist in General Practice knows, provision of a Pharmaceutical Service involves more than the dispensing of N.H.S. prescriptions. The General Practice Pharmacist is involved in advising the general public on the proper use of medicines, and to a limited extent, in prescribing for the treatment of minor ailments. It has been said by many people including Officers of the Department of Health, the Health Education Council and Consumer Associations that the General Practice Pharmacist plays an important role in the health care of the nation. More recently, the Pharmaceutical Services Negotiating Committee in its evidence to the Royal Commission on the National Health Service recommended among other things, that the role of the Pharmacist as an important member of the primary health care be given greater recognition.

In the light of these developments, it seems strange to me that very little research has been conducted to at least quantify the role of the General Practice Pharmacist as a member of the primary health care team.

As a General Practice Pharmacist myself, I believe it would be useful for the Profession to examine in detail such questions as "How much counter prescribing is done by pharmacists"? How much advice is requested by the public about medicines purchased for self medication? Do the public rely on the pharmacist for general health advice? Consequently as an enrolled post-graduate research student with the Pharmacy Department at The University of Aston in Birmingham, I have designed a questionnaire which with your co-operation, may go some way to answering these questions.

I realise that the practice of pharmacy imposes severe time restrictions on us all, but I hope that you will find sufficient time to complete my questionnaire which is enclosed.

Names and addresses are not requested on the questionnaire and I would like to stress that all individual results contributing to this research will be treated with complete confidentiality.

I would like to thank you very much indeed in anticipation, for completing this questionnaire and returning it in the stamped addressed envelope provided.

Yours sincerely,

Michael J. Phelan M.P.S.  
Pharmacy Practice Research Group.

## Notes for guidance about the questionnaire

### SECTION I

Part (a) This section deals with sale of medicines under two headings

A. 'NORMAL SALES', if sales specifically asked for by the customer (non advised)

B. 'ADVICE SALES', i.e. when the pharmacist is asked for advice concerning the sale and when three alternative courses of action are possible.

- (i) Sale of a proprietary medicine
- (ii) Counter prescribed medicine i.e. prepared in the dispensary, script book entry.
- (iii) Refer to seek medical advice.

The medicines are classified in groups to determine any variation in the types of medicine for which advice is sought.

Part (b) This section is to quantify the advice given the pharmacist in respect of health matters other than medicines, e.g. go to bed plus hot drink; gargle with salt.....

I hope that you yourself or member(s) of your staff will be able to complete this section, and I would like you to complete it on Tuesday, Wednesday or Thursday of the week following receipt of the questionnaire, the day not being your half day closing. I have arranged each box into blocks of numbers so that on the first sale a cancellation line would be put through 1, on the second sale a line would be put through 2 and so on.

### SECTION II

This section is designed to determine any relationship which may exist among particular types of pharmacies, their location and ownership.

### SECTION III

This section attempts to correlate the role of the General Practice Pharmacist to his N.H.S. Contract. If in addition to these questions you wish to state briefly any other opinions concerning this subject, please feel free to do so.

SECTION II

- 1) TYPE OF PHARMACY PLEASE TICK
- a) DISPENSING ONLY (i.e. DISPENSING MORE THAN 80%)
  - b) TRADITIONAL
  - c) MAINLY O.T.C. (i.e. DISPENSING LESS THAN 20%)
- 2) LOCATION
- a) TOWN CENTRE (i.e. IN A LARGE SHOPPING AREA)
  - b) SUBURBAN (i.e. SERVING A LOCAL COMMUNITY)
  - c) RURAL
- 3) OWNERSHIP
- a) SINGLE PROPRIETOR
  - b) SMALL MULTIPLE (UP TO 10 SHOPS)
  - c) LARGE MULTIPLE

SECTION III

How many doctor contacts were made during the day concerning?

- a) Ambiguously written prescriptions 1 2 3 4 5 6 7 8 9 10
- 1 2 3 4 5 6 7 8 9 10
- b) Incompatibilities 1 2 3 4 5 6 7 8 9 10
- 1 2 3 4 5 6 7 8 9 10
- c) Others(please specify if possible) 1 2 3 4 5 6 7 8 9 10
- d) Advice sought by the doctor 1 2 3 4 5 6 7 8 9 10

2) How many prescriptions received during the day were written other than by the doctor signing the prescription, except for the name, address and date? And were written:-

- a) Correctly 1 2 3 4 5 6 7 8 9 10
- 1 2 3 4 5 6 7 8 9 10
- b) Incorrectly 1 2 3 4 5 6 7 8 9 10
- 1 2 3 4 5 6 7 8 9 10

3) Of the prescriptions dispensed during the day, how many items did you need to give advice about to the Patient? Either:-

- a) By the use of an additional label e.g. protect from light, store in cool place, expiry date...etc.... 1 2 3 4 5 6 7 8 9 10
- b) By verbal instructions given by yourself or through an assistant e.g. instructions for use or dosage, may cause drowsiness etc...

- c) By warning cards, aspirin, MAOI 1 2 3 4 5 6 7 8 9 10
- 4) Of the prescriptions dispensed during the day, other than those in question 3, how many did the patient seek your advice about concerning dosage, use, side affects etc... 1 2 3 4 5 6 7 8 9 10
- 5) How many prescriptions did you dispense during the day?
- 6) Of the prescriptions dispensed during the day, how many were dispensed in child resistant containers 1 2 3 4 5 6 7 8 9 10
- 1 2 3 4 5 6 7 8 9 10

SECTION I - RECORD OF MEDICINE SALES DAY ..... DATE .....

CLASS OF MEDICINE	NON-ADVISED SALES	ADVISED SALES		
		(i) PROPRIETARY MEDICINE ADVISED	(ii) COUNTER-PRESCRIBED MEDICINE (Prepared)	(iii) REFER TO SEEK MEDICAL ADVICE
COUGH, COLD, SORE THROAT, CATARRH	12345678910 12345678910 12345678910	12345678910 12345678910	12345678910 12345678910	12345678910 12345678910
ANALGESICS	12345678910 12345678910 12345678910	12345678910 12345678910	12345678910 12345678910	12345678910 12345678910
ALIMENTARY TRACT ie SICKNESS, DIARRHOEA, CONSTIPATION, INDIGESTION ETC.	12345678910 12345678910 12345678910	12345678910 12345678910	12345678910 12345678910	12345678910 12345678910
SKIN-RASHES, ACNE, ECZEMA, ATHLETE'S FOOT, HEAD LICE, ETC.	12345678910 12345678910 12345678910	12345678910 12345678910	12345678910 12345678910	12345678910 12345678910
VITAMINS, TONICS	12345678910 12345678910 12345678910	12345678910 12345678910	12345678910 12345678910	12345678910 12345678910
FIRST AID	12345678910 12345678910 12345678910	12345678910 12345678910	12345678910 12345678910	12345678910 12345678910
OTHERS	12345678910 12345678910 12345678910	12345678910 12345678910	12345678910 12345678910	12345678910 12345678910

(a)

ADVICE GIVEN BY THE PHARMACIST CONCERNING HYGIENE, DIET, GENERAL HEALTH ETC. WHETHER A SALE IS MADE OR NOT	12345678910 12345678910
---	----------------------------

(b)

# ASTON

Gosta Green, Birmingham B4 7ET/Tel: 021.359 3611 Ex

6253

## Department of Pharmacy

Pharm/MJP/MHJ/KQ

Dear Customer,

The Chemist Shop is increasingly becoming a centre where the general public feel they can seek the advice of the pharmacist not only on the medicines they purchase but on many other aspects of health care.

The General Practice Pharmacy Research Group at the University of Aston are attempting to assess this advice, and your co-operation by asking you to complete the enclosed questionnaire handed to you following your request for advice.

We would like to make it quite clear that neither you nor your pharmacist can be identified by the answers you give on the questionnaire, and we would be grateful if you will return the completed questionnaire directly to the University of Aston, in the stamped addressed envelope provided.

As your reply is completely anonymous, may we thank you very much in anticipation. Your co-operation is greatly appreciated.

Yours sincerely,

M. J. Phelan M.P.S.,  
M. H. Jepson F.P.S.,  
Pharmacy Practice Research Group  
University of Aston in Birmingham.

Enc.

Questionnaire

Please tick the box in each question that corresponds to your answer.

Question 1 Was the advice for MALE  FEMALE

Question 2 What is the age range of the person for whom advice is sought?  
 0 - 12 months  18 - 39 years   
 1 - 5 years  40 - 65 years   
 6 - 17 years  over 65 years

Question 3 Was the person for whom the advice is sought present in the shop? YES   
 NO

Question 4 Please specify the symptom or symptoms of illness or the aspect of health care for which advice was sought  
 e.g. cough, sore throat, infectious diseases,  
 dental hygiene .....

Question 5 What advice was given?  
 a) to purchase a ready made medicine   
 b) to purchase a medicine made up by the pharmacist   
 c) to consult a doctor   
 d) that no treatment was necessary   
 e) reassurance in respect of health care

Question 6 If a medicine was purchased, was it  
 a) effective in clearing up the symptoms   
 b) helpful in easing the symptoms but you needed to seek further advice   
 c) effective in clearing up the symptoms but it produced uncomfortable reactions of which you were not informed e.g. drowsiness, dizziness etc   
 d) ineffective in easing or clearing the symptoms

Question 7 If the medicine was ineffective did you  
 a) consult your pharmacist again   
 b) consult another pharmacist   
 c) consult a doctor   
 d) do nothing

Question 8 How much did the medicine cost?  
 under 50p  50p to £1  over £1



Question 9 Only answer this question if you were advised to consult your doctor

Did you do so? YES  NO

If your answer is YES did your doctor

- a) prescribe treatment
- b) arrange a hospital consultation
- c) advise that no treatment was necessary

Question 10 Only answer this question if you were advised that no treatment was necessary

Were you satisfied with the advice? YES  NO

If your answer is NO did you

- a) consult your pharmacist again
- b) consult another pharmacist
- c) consult a doctor

Question 11 Only answer this question if reassurance was given in respect of health care.

Were you satisfied with the reassurance? YES  NO

Question 12 Were you advised? (tick where appropriate)

- a) that if no improvement is made within a certain time, e.g. 48 hours, you should consult your doctor
- b) that if the symptoms become more severe you should consult your doctor
- c) that if the symptoms return after finishing the medicine you should consult your doctor
- d) about any side effects to the medicine, e.g. drowsiness, blurring of vision etc.

Question 13 How do you rate the advice given by your pharmacist?

Good  Fair  Poor

Question 14 Why do you consult your pharmacist? (Tick where appropriate)

- a) because you cannot consult your doctor and the pharmacist is the next best person
- b) because the pharmacist is available during most of the working day
- c) because you feel the pharmacist is suitably qualified to give advice and treat minor ailments
- d) because the pharmacist is able to help you to decide whether your symptoms are an indication that medical treatment should be sought.



Gosta Green, Birmingham B4 7ET/Tel: 021.359 3611 Ex

**Department of Pharmacy**

Professor M. H. JEPSON, F.P.S., M.Sc., Ph.D., Dip. Pharm., F.R.S.  
Dr. J. H. W. GIBSON, F.P.S., M.Sc., Ph.D., Dip. Pharm., F.R.S.  
Dr. A. J. H. GIBSON, F.P.S., M.Sc., Ph.D., Dip. Pharm., F.R.S.  
Dr. J. H. W. GIBSON, F.P.S., M.Sc., Ph.D., Dip. Pharm., F.R.S.  
Dr. J. H. W. GIBSON, F.P.S., M.Sc., Ph.D., Dip. Pharm., F.R.S.

Dear Customer,

The Chemist Shop is increasingly becoming a centre where the general public feel they can seek the advice of the pharmacist not only on the medicines they purchase but on many other aspects of health care.

The General Practice Pharmacy Research Group at the University of Aston are attempting to assess this advice, and your co-operation by asking you to complete the enclosed questionnaire handed to you following your request for advice.

We would like to make it quite clear that neither you nor your pharmacist can be identified by the answers you give on the questionnaire, and we would be grateful if you will return the completed questionnaire directly to the University of Aston, in the stamped addressed envelope provided.

As your reply is completely anonymous, may we thank you very much in anticipation. Your co-operation is greatly appreciated in this study to which your pharmacist has willingly agreed to participate.

Yours sincerely,

M.H. Jepson F.P.S.,  
Pharmacy Practice Research Group,  
University of Aston in Birmingham.

Enc.

Questionnaire Survey of Pharmacy advice

Please tick the box in each question that corresponds to your answer.

Question 1 Was the advice for MALE  FEMALE

Question 2 What was the age range of the person for whom advice was sought?

0-12 months	<input type="checkbox"/>	18-39 years	<input type="checkbox"/>
1-5 years	<input type="checkbox"/>	40-60 years	<input type="checkbox"/>
6-17 years	<input type="checkbox"/>	over 60 years	<input type="checkbox"/>

Question 3 Was the person for whom the advice was sought present in the shop?

YES

NO

Question 4 Please specify the symptom(s) of illness or the aspect of health care for which advice was sought.  
e.g. cough, sore throat, infectious diseases, dental hygiene.

.....

.....

Question 5 What advice was given?

a) to purchase a ready made medicine	<input type="checkbox"/>
b) to purchase a medicine made up by the pharmacist	<input type="checkbox"/>
c) to consult a doctor	<input type="checkbox"/>
d) that no treatment was necessary	<input type="checkbox"/>
e) general reassurance	<input type="checkbox"/>

Question 6 If a medicine was purchased, was it:-

a) effective in clearing up the symptoms	<input type="checkbox"/>
b) helpful in easing the symptoms but you needed to seek further advice	<input type="checkbox"/>
c) effective in clearing up the symptoms but it produced uncomfortable reactions of which you were not informed e.g. drowsiness, dizziness, etc.	<input type="checkbox"/>
d) ineffective in easing or clearing the symptoms	<input type="checkbox"/>

Question 7 If the medicine was INEFFECTIVE did you:-

a) consult your pharmacist again	<input type="checkbox"/>
b) consult another pharmacist	<input type="checkbox"/>
c) consult a doctor	<input type="checkbox"/>
d) do nothing	<input type="checkbox"/>

Question 8 How much did the medicine cost?

under 50p       50p to £1       over £1

Question 9 Only answer this question IF YOU WERE ADVISED TO CONSULT YOUR DOCTOR.

Did you do so? YES  NO

If your answer is YES did your doctor:-

- a) prescribe treatment
- b) arrange a hospital consultation
- c) advise that no treatment was necessary

Question 10 Only answer this question IF YOU WERE ADVISED THAT NO TREATMENT WAS NECESSARY.

Were you satisfied with the advice? YES  NO

If your answer is NO did you:-

- a) consult your pharmacist again
- b) consult another pharmacist
- c) consult a doctor

Question 11 Were you advised? (tick where appropriate)

- a) that if no improvement was obvious within a certain time, e.g. 48 hours, you should consult your doctor
- b) that if the symptoms became more severe you should consult your doctor
- c) that if the symptoms returned after finishing the medicine you should consult your doctor

Question 12 Most medicines have few if any side-effects.

- a) Were you warned or advised about any possible effects such as drowsiness or dryness of mouth? YES  NO
  - b) Did you experience any side effects? YES  NO
- If so please specify .....

Question 13 How do you rate the advice given by your pharmacist?

Good  Fair  Poor

Question 14 Why do you consult your pharmacist? (Tick any or all as appropriate).

- a) because you cannot conveniently consult your doctor and the pharmacist is the next best person
- b) because the pharmacist is available during most of the working day
- c) because you feel the pharmacist is suitably qualified to give advice and treat minor ailments
- d) because the pharmacist is able to help you to decide whether your symptoms are an indication that medical treatment should be sought.

Please feel free to add any other comments .....

.....

For any further information please telephone the University of Aston  
021-359-3611 Ext 546.

Thank you once again for your co-operation.

BIBLIOGRAPHY

## BIBLIOGRAPHY

- (1) Jones, I.F., General practice pharmacy in a National Health Service, Ph.D. thesis, 1974.
- (2) P.S.G.B. Working party on the future of general practice pharmacy, *Pharmaceutical Journal*, 1979, 222, 350-352.
- (3) The pharmacist in society, Office of health economics report, No. 14, 1964.
- (4) Medicines in the 1990's, Office of health economics study, 1969.
- (5) Royal commission on medical education, 1965-68, 1968, Cmnd 3659, H.M.S.O., London.
- (6) Poetsch, C.E., Over the counter preparations, *American Journal of Pharmacy*, 1970, 142, 9-15.
- (7) Buck, C., Fry, J. et al, Conference on self care and health maintenance, *Pharmaceutical Journal*, 1974, 212, 418-420.
- (8) Beanland, W.A., Self medication - two opposing views, *Pharmaceutical Journal*, 1974, 212, 382-385.
- (9) Report - The medicines box, *Lancet*, 1974, 1, 912.
- (10) Jeffreys, M., Brotherston, H.J.F., and Cartwright, A., Consumption of medicines on a working class housing estate, *British Journal of Preventive and Social Medicine*, 1960, 14, 64.
- (11) Lader, S., Survey on the incidence of self medication, *Practitioner*, 1965, 194, 132-136.
- (12) National opinion poll, Self medication survey commissioned by Aspro Nicholas Ltd. *Journal of the Institute of Pharmacy Management*, 1966, 6, 571-574.
- (13) Cargill, D., Self treatment as an alternative to rationing of medical care, *Lancet*, 1967, 1, 1377-1378.
- (14) Patent medicines, *Which Report*, 1967, 335.
- (15) Without prescription (self medication), Office of health economics study, No. 27, 1968.
- (16) Butterfield, W.J.H., *Priorities in medicine 1968*, The Nuffield Provincial Hospitals Trust, London.
- (17) Wadsworth, M.E.J., Butterfield, W.J.H., and Blaney, R., *Health and Sickness, the choice of treatment*, 1971, London: Tavistock Publications.
- (18) Horder, J. and Horder, E., *Illness in general practice*, *Practitioner*, 1954, 173, 177-187.

- (19) Report, Section of general practice of the Royal Society of Medicine, Discussion on dilemmas in practice. Practitioner, 1972, 208, 691-694.
- (20) Elliott-Binns, C.P., An analysis of lay medicine, Journal of the Royal College of General Practitioners, 1973, 23, 255-264.
- (21) Community pharmacy, Pharmaceutical Journal, 1980, 224, 34.
- (22) Whitfield, M., The pharmacist's contribution to medical care, Practitioner, 1968, 200, 434-438.
- (23) Present state and future needs, Reports from general practice, The College of General Practitioners, July, 1965.
- (24) Webb, B., The retail pharmacist and drug treatment, Journal of the Royal College of General Practitioners, 1976, 26, 81-88.
- (25) Boylan, L.J., The advisory role of the pharmacist, Pharmaceutical Journal, 1978, 221, 328-329.
- (26) Edwards, J., Allan, J., et al, General practice pharmacists: How good is the advice they give patients? Pharmaceutical Journal, 1975, 214, 568-579.
- (27) Report from the Office of population censuses and surveys 1977, Pharmaceutical Journal, 1979, 222, 417.
- (28) Beckett, S.H., Correspondence, Pharmaceutical Journal, 1979, 222, 460.
- (29) Linn, L., Davis, M., Occupational orientation and overt behaviour - The pharmacist as drug adviser to patients. American Journal of Public Health, 1973, 63, 502-508.
- (30) Hoff, L.C., How often do consumers seek your advice on prescription and O.T.C. products Pharmacy Times, 1975, 41, 52-55.
- (31) Blythe, T., Armstrong, B., Clinical pharmacy in retail pharmacies, Australian Journal of Pharmacy Science, 1977, 6, 91-95.
- (32) Boyes, G.R., Pharmaceutical problems of self medication, Pharmaceutical Journal, 1964, 193, 275-282.
- (33) Teeling-Smith, G., The economic future of the pharmacist, Pharmaceutical Journal, 1964, 192, 395-402.
- (34) Teeling-Smith, G., Are pharmacists necessary. Pharmaceutical Journal, 1967, 198, 285-288.
- (35) Darley, W., and Sommers, A.R., Medicine, money and manpower. New England Journal of Medicine, 1967, 276, 1420.

- (36) Dommermuth, P.R., Retail pharmacists: Professional contingencies in business settings, Presented at the annual meeting of the American Sociological Association, Miami, 1966.  
American Journal of Hospital Pharmacy, 1968, 25, 42.
- (37) Thomas, J., Control of distribution of over the counter preparations, Australian Journal of Pharmacy, 1970, 51, 862-864.
- (38) Wedgewood-Benn, A., Letter to the Secretary of State for Social Services, Pharmaceutical Journal, 1970, 205, 207.
- (39) Joseph, Sir Keith, The role of the pharmacist, Pharmaceutical Journal, 1971, 207, 208.
- (40) Millis, J.S., Working ahead - The report of the study commission on pharmacy.  
American Journal of Hospital Pharmacy, 1972, 33, 134-138.
- (41) Report - Skills of the pharmacist are being wasted, Chemist and Druggist, 1974, 201, 688.
- (42) Denzin, N.K., Mettlin, C.J., Incomplete professionalism: the case of pharmacy, Social Forces, 1968, 46, 375-381.
- (43) Bass, M., The pharmacist as a provider of primary care, Canadian Medical Journal, 1975, 112, 60.
- (44) Johnson, R.E., Tudor, R.J., Role of the pharmacist in primary health care, American Journal of Hospital Pharmacy, 1975, 32, 162-164.
- (45) Rogers, P.G., Sub-committee on public health and environment, Pharmacy Times, 1972, 38, 54-58.
- (46) Gurbhir, A.K., Patient orientated pharmaceutical services in community pharmacies,  
Journal of the American Pharmaceutical Association, 1975, No.15, 258-260.
- (47) Shulman, J.I., Schulman, S., Two card system for monitoring patient medication in general practice pharmacy.  
Pharmaceutical Journal, 1978, 221, 331-332.
- (48) Gatherer, A., Pharmacists as community health spotters, Pharmaceutical Journal, 1974, 212, 24.
- (49) Mercia Regional Conference, Changing responsibility of the pharmacist, Pharmaceutical Journal, 1972, 209, 376-378.
- (50) Symposium, Pharmacists should inspire confidence when medicines are handed to patients,  
Pharmaceutical Journal, 1974, 212, 129.
- (51) Stimson, G., Webb, B., Going to see the doctor: The consultation process in general practice, 1975, London: Routledge and Keagan Paul.



- (52) Trevena, C.R., Community pharmacy - A role model for professional practice, Australian Journal of Pharmacy, 1976, 57, 461-466.
- (53) Manning, N., Feehan, H.V., Reform practice by charging for consultations. Australian Journal of Pharmacy, 1977, 58, 493-496.
- (54) Thorp, R.H., Chairman of the Australian Consumers Association, Australian Journal of Pharmacy, 1977, 58, 36-37.
- (55) Toffey, W.V., What are pharmacists really like? Drug Topics, 1978, 122, 53-57.
- (56) Attendant, Annual general meeting of the Pharmaceutical Society, Pharmaceutical Journal, 1979, 222, 444-449.
- (57) Dickson, W.M., Rodowskas, C.A., Verbal communication of community pharmacists, Medical Care, 1975, 13, 486-498.
- (58) Donehew, G.R., The correlation between activity and attitude in third party operated pharmacies, Pharmacy Times, 1978, 44, 54-59.
- (59) Knapp, D.A., Case for two professional degree programmes in pharmacy. Drug Intelligence and Clinical Pharmacy, 1976, 10, 320-322.
- (60) Survey of the distribution of pharmacies, Pharmaceutical Journal, 1972, 209, 485.
- (61) Austin, R., Parish, P., Prescribing in general practice: Prescriptions written by ancillary staff. Journal of the Royal College of General Practitioners, Suppl.1, Vol.26, 1976.
- (62) Hurwitz, N., Admissions to hospital due to drugs, British Medical Journal, 1969, 1, 539.
- (63) Mulroy, R., Iatrogenic disease in general practice: Its incidence and effects. British Medical Journal, 1973, 2, 407-410.
- (64) 'Pharmacists' - Which report, March 1975.
- (65) Medicines Act 1968, Chap. 67, H.M.S.O. London.
- (66) D'Arcy, P.F., Irwin, W.G., et al, Role of the general practice pharmacist in health care. Pharmaceutical Journal, 1980, 224, 539-542.
- (67) Kerr, J.P., Pharmacist a colleague of the health educationist, Pharmaceutical Journal, 1978, 221, 487.
- (68) Feehan, H.V., Study of the pharmacists counselling competency, Pharmaceutical Journal, 1980, 225, 172-173.
- (69) Parish, P., Pharmacists could advise doctors more, Pharmaceutical Journal, 1980, 224, 564.

- (70) Odd, R.W., Tablet counting denigrates pharmacist's training, Pharmaceutical Journal, 1980, 224, 507.
- (71) Report - Pharmacists interested in Debenhams plan, Pharmaceutical Journal, 1980, 224, 439.
- (72) Leader - Debenhams to test "medical centres on the top floor" plan. Pharmaceutical Journal, 1980, 224, 447.
- (73) 'Largus', My mistake, Pharmaceutical Journal, 1980, 224, 468.
- (74) Thompson, B., Side by side pharmacy, Pharmaceutical Journal, 1980, 225, 214-216.
- (75) Leader - Prospects from Clothier, Pharmaceutical Journal 1980, 225, 219.
- (76) Report - Chemist's charter, Pharmaceutical Journal, 1980, 224, 368.
- (77) Report - A pharmacy within a mile - D.H.S.S. norm for urban areas? Pharmaceutical Journal, 1980, 224, 364.
- (78) Report - Remuneration - chief executive takes stock, Pharmaceutical Journal, 1980, 225, 116-117.
- (79) York, E.C., From a high street to a health centre, Pharmaceutical Journal, 1980, 224, 152.
- (80) Report - Medical manpower, Pharmaceutical Journal, 1980, 224, 313.
- (81) Report - Stowmarket: Health centre pharmacy leads to closure. Pharmaceutical Journal, 1980, 225, 93.
- (82) Leader - Concerns in self care, Pharmaceutical Journal, 1980, 224, 494-495.
- (83) Report - Medicines: Cost per head quadruples since 1970, Pharmaceutical Journal, 1980, 225, 9.
- (84) Sharpe, D., Self treatment: two million told of pharmacist's role, Pharmaceutical Journal, 1980, 224, 278.
- (85) Edwards, C., Stillman, P., Minor illness or major disease? Pharmaceutical Journal, 1979, 222, 116.
- (86) The medicines (prescriptions only) order 1979, S.I. 1977, No. 2127, H.M.S.O.
- (87) The medicines (general sale list) order 1977, S.I. 1977, No. 2129, H.M.S.O.
- (88) Report - O.T.C. sale of topical hydrocortisones, Pharmaceutical Journal, 1980, 224, 36.
- (89) Symposium, Pharmaceutical services in the 80's, Pharmaceutical Journal, 1980, 224, 206-207.

- (90) Symposium, Need for pilot studies to test information schemes, Pharmaceutical Journal, 1980, 224, 675.
- (91) Report - Warning labels on medicines hard to understand, Pharmaceutical Journal, 1980, 224, 675.
- (92) Report - Further increase in dispensing doctors, Pharmaceutical Journal, 1980, 224, 313.
- (93) Coleman, D., Network of urgent pharmacies proposed, Pharmaceutical Journal, 1979, 223, 394.
- (94) Report - Prescribing pharmacists call, Pharmaceutical Journal, 1980, 224, 397.