

A
Comparative Analysis
of
Health Care Delivery Systems

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TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	ii
LIST OF TABLES	vi
 Chapter	
1 INTRODUCTION	1
2 GROUP PRACTICE	7
Measuring Doctor Productivity	
Classification of Groups	
Comparative Analysis of Specific Blocs	
A. General Practice	
B. Internal Medicine	
C. Obstetrics and Gynaecology	
Summary	
3 SOLO PRACTICE	33
Data Collection and Analysis of Specific	
Blocs of Solo Physicians	
A. General Practice	
B. Internal Medicine	
C. Obstetrics and Gynaecology	
4 TEACHING FACILITIES	44
Data Collection and Analysis of Specific Blocs	
of University Teaching Physicians	
A. General Practice	
B. Internal Medicine	
C. Obstetrics and Gynaecology	
Summary	
5 A COMPARATIVE ANALYSIS OF MEDICAL PRACTICE IN GROUP,	
SOLO AND, TEACHING FACILITIES	57
A. General Practice	
(i) Productivity	
(ii) Incidence of Unreferred Services	
(iii) Incidence of Referred Services	
B. Internal Medicine	
(i) Productivity	
(ii) Incidence of Unreferred Services	
(iii) Incidence of Referred Services	

Chapter		Page
	C. Obstetrics and Gynaecology	
	(i) Productivity	
	(ii) Incidence of Unreferred Services	
	(iii) Incidence of Referred Services	
	Summary	
6	RECOMMENDATIONS FOR THE PROVISION OF AMBULATORY CARE FACILITIES IN WINNIPEG	86
	Hostel Facilities	
	Multi-test Facilities	
	Day Care Hospital	
7	CONCLUSIONS	97
	Productivity of Physicians	
	Referred Services	
	Teaching and Ambulatory Care	
	BIBLIOGRAPHY	103

LIST OF TABLES

Table	Page
2-1 REPORTED NUMBER OF NURSES, TECHNICIANS, AND CLERICAL PERSONNEL EMPLOYED PER DOCTOR, IN GROUP PRACTICE AND IN SOLO PRACTICE, CANADA, 1960	14
2-2 PERCENTAGE DISTRIBUTION OF SERVICES FOR GROUP PHYSICIANS IN THREE BLOCS OF PRACTICE	23
2-3 AVERAGE UNREFERRED SERVICES AND REFERRED SERVICES PER PHYSICIAN AND PER PATIENT FOR GROUP DOCTORS IN THREE BLOCS OF PRACTICE	24
2-4 AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN IN VARIOUS SIZED GROUP FACILITIES	25
2-5 SERVICES RECEIVED PER PATIENT FROM PHYSICIANS IN THREE BLOCS OF PRACTICE PRACTICING IN VARIOUS SIZED GROUP FACILITIES	26
2-6 INCIDENCE OF REFERRED SERVICES PER PATIENT	32
3-1 UNREFERRED SERVICES AND REFERRED SERVICES PER SOLO DOCTOR AND PER PATIENT	37
3-2 PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED SERVICES FOR SOLO GENERAL PRACTITIONERS	37
3-3 AVERAGE PHYSICAL UNITS OF SERVICES PRODUCED PER PHYSICIAN AND RECEIVED PER PATIENT FOR A ONE MONTH PERIOD IN 1970	39
3-4 UNREFERRED SERVICES AND REFERRED SERVICES PER SOLO INTERNIST AND PER PATIENT	40
3-5 PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED SERVICES FOR SOLO INTERNISTS	40
3-6 AVERAGE PHYSICAL UNITS OF SERVICES PRODUCED PER PHYSICIAN AND RECEIVED PER PATIENT FOR SOLO INTERNISTS	41

Table	Page
3-7 UNREFERRED SERVICES AND REFERRED SERVICES PER SOLO OBSTETRICIAN-GYNAECOLOGIST AND PER PATIENT	42
3-8 PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED SERVICES FOR SOLO OBSTETRICIANS-GYNAECOLOGISTS	42
3-9 AVERAGE PHYSICAL UNITS OF SERVICES PRODUCED AND PRESCRIBED PER PHYSICIAN AND PER PATIENT FOR OBSTETRICIAN-GYNAECOLOGISTS	43
4-1 UNREFERRED SERVICES AND REFERRED SERVICES PER DOCTOR AND PER PATIENT	49
4-2 PERCENTAGE DISTRIBUTION OF UNREFERRED SERVICES AND REFERRED SERVICES	49
4-3 AVERAGE PHYSICAL UNITS OF SERVICES RECEIVED PER PATIENT	50
4-4 UNREFERRED SERVICES AND REFERRED SERVICES PER TEACHING INTERNIST AND PER PATIENT	51
4-5 PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED SERVICES FOR TEACHING INTERNISTS	52
4-6 AVERAGE PHYSICAL UNITS OF SERVICES RECEIVED PER PATIENT	52
4-7 UNREFERRED SERVICES AND REFERRED SERVICES PER OBSTETRICIAN-GYNAECOLOGIST AND PER PATIENT	53
4-8 PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED SERVICES FOR TEACHING DOCTORS IN THE OBSTETRICS-GYNAECOLOGY BLOC	54
4-9 AVERAGE PHYSICAL UNITS OF SERVICES RECEIVED PER PATIENT	54
5-1 AVERAGE UNREFERRED SERVICES AND REFERRED SERVICES PER GENERAL PRACTITIONER AND PER PATIENT FOR PHYSICIANS IN SOLO, GROUP AND TEACHING FACILITIES	61
5-2 AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN IN VARIOUS FACILITIES	62
5-3 PERCENTAGE DISTRIBUTION OF UNREFERRED SERVICES FOR GENERAL PRACTITIONERS PRACTICING IN SOLO, GROUP AND TEACHING FACILITIES	65

Table

Page

5-4	UNREFERRED SERVICES RECEIVED PER PATIENT FOR GENERAL PRACTITIONERS PRACTICING IN VARIOUS FACILITIES	66
5-5	AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN AND RECEIVED PER PATIENT FOR GENERAL PRACTITIONERS	68
5-6	AVERAGE UNREFERRED SERVICES AND REFERRED SERVICES PER INTERNIST AND PER PATIENT FOR PHYSICIANS IN SOLO, GROUP AND TEACHING FACILITIES	71
5-7	AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN IN VARIOUS FACILITIES	72
5-8	PERCENTAGE DISTRIBUTION OF UNREFERRED SERVICES FOR SPECIALISTS OF INTERNAL MEDICINE PRACTICING IN SOLO, GROUPS, AND TEACHING FACILITIES	75
5-9	UNREFERRED SERVICES RECEIVED PER PATIENT FOR SPECIALISTS OF INTERNAL MEDICINE PRACTICING IN VARIOUS FACILITIES	75
5-10	AVERAGE UNITS OF REFERRED SERVICES RENDERED PER PHYSICIAN AND RECEIVED PER PATIENT FOR INTERNISTS	78
5-11	AVERAGE UNREFERRED SERVICES AND REFERRED SERVICES PER OBSTETRIC-GYNAECOLOGY SPECIALIST AND PER PATIENT IN SOLO, GROUP AND TEACHING FACILITIES	79
5-12	AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN IN VARIOUS FACILITIES FOR THE OBSTETRIC-GYNAECOLOGY BLOC	80
5-13	PERCENTAGE DISTRIBUTION OF UNREFERRED SERVICES FOR SPECIALISTS OF OBSTETRIC-GYNAECOLOGY PRACTICING IN SOLO, GROUP AND TEACHING FACILITIES	82
5-14	UNREFERRED SERVICES RECEIVED PER PATIENT FOR SPECIALISTS OF OBSTETRIC-GYNAECOLOGY PRACTICING IN VARIOUS FACILITIES	83
5-15	AVERAGE UNITS OF REFERRED SERVICES RENDERED PER PHYSICIAN AND RECEIVED PER PATIENT FOR SPECIALISTS OF OBSTETRIC-GYNAECOLOGY	84

Chapter 1

INTRODUCTION

This study deals mainly with the work performed by medical doctors practicing in various sized facilities in metropolitan Winnipeg. The study attempts to assess the hypothesis that efficiency in the delivery of health care is enhanced by the formation of group practices. Impetus for the research came from the proposal to build a hospital-based ambulatory care facility.¹ Since this type of care requires the co-operation and association of a large number of health personnel, the ambulatory clinic, although rendering a wider scope of services, is somewhat equivalent to a large scale group practice in operation.²

¹Report of the Task Force on Emergency and Ambulatory Care, November 10, 1969, Chairman Dr. E. G. Brownell.

²Ambulatory care includes an extensive range of treatments. It includes care rendered in a doctor's office; out-patient diagnostic services; organized out-patient therapy and treatment; out-patient surgery; out-patient care with hostel accommodation; and home care. The proposed ambulatory facility plans to accommodate all of the above treatments. The analysis in chapters two through five inclusive, deals mainly with care rendered from the physicians' private practices and care rendered in organized out-patient clinics. Chapter 6 considers the ambulatory facility which encompasses the entire gambit of ambulatory services.

A first objective of the study is to consider levels of medical productivity among physicians practicing in solo and various sized group practices. To shed light on the reasons for discrepancies in productivity, the patterns of practice of a sample of medical doctors are analyzed. Efficiency in the delivery of health care is equated with high levels of doctor productivity.

Secondly, the patterns of practice are studied to determine the incidence of various services (both patient-doctor contacts and the prescription of ancillary services) rendered between solo and group physicians. These results are subsequently used for interpreting the higher levels of productivity of some physicians.

A third objective is a consideration of the practices of a sample of teaching physicians at out-patient departments of hospitals. The proposed ambulatory facility is to provide assistance in the training of health personnel as one of its primary functions. Consequently, it is of interest to consider the teaching practices in the present environment of the hospital.

The final objective is an assessment of the philosophy and plans for ambulatory care of several hospitals in other Canadian cities. This assessment is based on observations made during visits to these cities and interviews and discussions with top-level administration of the existing and planned ambulatory care facilities. The results are presented as recommendations of important variants to consider in implementing an ambulatory facility in Winnipeg. With these objectives in mind, this study assumes the following format.

Chapter 2 examines the group practice of medicine. The problems inherent in the measurement of doctor productivity are

studied and the amenities of group practice are considered. Data is analyzed reflecting the productivity and incidence of services for general practitioners, internists and obstetricians working in various group practices. Using the same format in Chapter 3, medical productivity and the incidence of services are considered from a random sample of solo general practitioners, all solo internists practicing in private facilities and all solo obstetricians. The activities of teaching physicians practicing in the three blocs previously chosen in Chapters 2 and 3 are studied in Chapter 4. Chapter 5 deals with the comparison of the results attained in the earlier chapters. Suggestive reasoning is forwarded in an attempt to account for the observations apparent in the comparison. In Chapter 6, an interpretation of the philosophy and plans for ambulatory care in other cities, gained as a result of visits to these centres, is presented. The final chapter presents the conclusions and recommendations of this research.

It is of interest to postulate various reasons for the concern with promoting care of patients on an ambulatory basis as opposed to hospital treatment.

From the medical viewpoint, rapid advances in the science have increased the number of treatments that can be administered on an ambulatory basis. In a recent article, this claim is given

professional support.³

Medicine has become more sophisticated and it is now feasible to diagnose and treat many illnesses on an ambulatory basis that formerly required hospitalization. This trend has been encouraged by the shortage of hospital beds and the escalation in operating expenses for in-patient care.

The latter statement in this quote provides one with a second reason for concentrating on ambulatory care: the necessity to economize due to the rapidly rising costs of providing health care. Taking 1961 as the base year equal to 100, the "all items" consumer price index has risen to 128.7 whereas the health care price index has risen to 137.1.⁴ Although much of the difference is accounted for in the last four years, prices for health care have risen approximately 8.4% per annum higher than the prices for all other goods and services over a nine-year period.

Apart from medical and economic reasons, some professionals are questioning the standards of care maintained in traditional hospital based out-patient clinics. In his article on "Physician and Hospital Costs", Dr. Leonard S. Rosenfeld forwards the following

³Freilich, "A Guide to Improved Ambulatory Care Service", Hospital Management, March 1969, p. 52.

⁴D. B. S. Bulletins on "Prices and Price Indices", 1970.

viewpoint.⁵

The crowding and long waiting time, the inadequate amenities, and the fractionation and poor standards of care that characterize many of our organized ambulatory clinics, even in our large teaching centres, are being brought to the fore for critical review. The medical profession has been questioned sharply on its willingness to accept the continuation of two standards of care, public and private, and its willingness to accept conditions in public medical facilities which it would never countenance in private practice.

Upon a preliminary assessment of the area of ambulatory care, a study focusing around an assessment of the cost-effectiveness of alternative methods of delivering ambulatory services was considered feasible. This research would have involved a comparison of the costs and benefits of patient visits to both private practice treatment facilities and hospital based ambulatory care facilities. The present course of research displaced the original design. A study of the possibilities for more efficient use of scarce medical resources was considered an equally important objective. In addition, several major obstacles impeded a study involving cost-effectiveness analysis.

Firstly, consumers do not bargain for the price which they wish to pay for health care services. Prices charged for various treatments and procedures are standardized and vary only between different blocs of practice. Consequently, cost per patient between various treatment centres based upon revenues generated by doctors has little significance, unless the costs of operating the treatment centres are known.

⁵Leonard S. Rosenfeld, "Physician and Hospital Costs", New York State Journal of Medicine, (April, 1969), p. 984.

Data on the costs of operating private practice treatment facilities were unavailable. Similarly, hospitals do not account for the operation of hospital based ambulatory services separate from other hospital services, except for home care programs.

One of the main objectives of present out-patient clinics and the proposed ambulatory facility is teaching. It is questionable whether one can apply cost-effectiveness analysis to compare two distinct methods of treatment, hospital based and private care, where the objectives, the inputs and final products are different. Apart from other considerations, the element of teaching makes health care more expensive relative to non-teaching systems. The combination of the greater amount of time required for treatment by teaching doctors and the errors liable to be made by students, may account for this discrepancy.

Chapter 2

GROUP PRACTICE

The trend in the delivery of personal medical services from physicians practicing independently to physicians practicing in groups has constituted one of the most significant changes in the delivery of ambulatory health care. The fact that the most recent international conference of medical doctors was devoted to group practice is ample proof of the importance of this change in the organization of medical care.¹

In Canada, it is estimated that 15% to 20% of physicians are now practicing in some 400 formally organized clinic groups of from three to sixty members each.² In the metropolitan area of Winnipeg, at the time of this study, medical doctors worked in association with medical doctors to form 52 group practices as defined by the Manitoba Health Services Commission.

In the medical literature, a distinction is made between formal and informal groups. A text on group practice in Canada by the Canadian Medical Association defines a formal group as one which conforms to the following five criteria: the group consisted of

¹First International Conference on Group Medicine.
Winnipeg, Canada, April 1970.

²Task Force Reports on the Cost of Health Services in Canada (Ottawa: Queen's Printer for Canada, 1970), Volume 3, p. 65.

three or more full-time doctors; the doctors were bound by a formal contract; the doctors shared patient records; the doctors pooled income and expenses; they distributed the proceeds on a prearranged basis and shared a common office.³

In a Royal Commission study on group practice, Dr. Boan forwards the following definition.⁴

Medical group practice is a formal association of three or more physicians providing services in more than one field or specialty with income from medical practice pooled and redistributed to the members according to some pre-arranged plan.

In the present study, the majority of groups considered are formal. All groups chosen for the analysis assume the group definition used by the Manitoba Health Services Commission. This states that a group exists when two or more doctors are found to share a common address and telephone number. This implies the sharing of a common office. A further criteria is the existence of a joint account for depositing proceeds which implies a financial arrangement between physicians.⁵

The major growth in the formation of group practices has taken place over the last twenty-five years. Of a sample of over

³Canadian Medical Association, Group Practice in Canada (Toronto: The Ryerson Press, 1967), p. 8.

⁴J. A. Boan, Group Practice, Royal Commission on Health Services, (Ottawa: Queen's Printer, 1966), p. 7.

⁵A definition provided by Mr. R. Harvey, Data Processing Manager of Medical Claims, Manitoba Health Services Commission.

one-half the formally organized groups in Canada, a 1963 study indicated that 65% of these had been formed in the thirteen-year period from 1950. The study goes on to show that more than half grew out of a solo practice and over a third developed out of an amalgamation of solo practices.⁶ Since many of the group practitioners have had experience in solo practice, it is of interest to speculate as to the reason for the trend toward the formation of groups.

Many authors have forwarded opinions on the amenities of group practice.⁷ A succinct summary of the many considerations apparent in the formation of a group is provided by the Task Force Reports.⁸

The decision of the physician with respect to joining or forming a group might result from: an inclination to co-operate with confreres; desire for assured coverage for time off for leisure, study and upgrading of training; provision of better medical coverage and improved quality of medical services; greater opportunity for pursuing special interests; economic security; entrepreneurism; self-defence (where groups are predominant in an area).

⁶Canadian Medical Association, op. cit., p. 4.

⁷C. M. A., op. cit., p. 5.

Joseph B. Davis, "Increasing Productivity of Physicians", Group Practice, (Volume 17, July, 1968), pp. 18 - 23.
James T. Howell, "Group Practice in Action: Its Effect on Quality of Care", Group Practice, (Volume 17, August, 1968), pp. 19 - 23.
Task Force Reports, op. cit., p. 64.

⁸Ibid.

The authors also note that public health authorities, industry, trade unions and governments might offer other alternative reasons for the promotion of groups. Perhaps one of the more important reasons from the standpoint of economists is the possibility of better control of health care costs. It has been inferred that group practices are capable of reducing both the internal costs of producing medical services and the expenditures generated in the whole complex of medical care, including hospitalization, drugs and other supporting services.⁹

The study of groups in this thesis represents an initial inquiry toward the hypothesis that group practices represent more efficient and more effective systems for the delivery of medical care. The purpose of this chapter is to analyze and compare the patterns of practice and productivity of various blocs of physicians working in group practices of differing size in the urban area of Winnipeg.¹⁰

In chapters to follow, the same format is used to analyze the practices of solo physicians and physicians practicing in hospital

⁹Milton I. Roemer and Donald M. Dubois, "Medical Costs in Relation to the Organization of Ambulatory Care", The New England Journal of Medicine, (May 1, 1969), pp. 988 - 993.

¹⁰Bloc refers to a specialty in the practice of medicine such as internal medicine, psychiatry, general practice, obstetrics and gynaecology, etc.

based out-patient clinics. Consequently, one of the prime reasons for the study of physicians in groups, is for comparison with solo practitioners and teaching doctors. In addition, groups of various size are compared to identify existing differences between groups.

Why are patterns of practice and productivity important considerations of any practice of medicine? Firstly, a study of the differences in the delivery of medical care aids in the identification of different approaches to achieving the goal of a healthier populace. These differences include: the number of patients seen in a given time period; the average number of unreferred services rendered per doctor and per patient; the incidence of initial office calls, subsequent calls, histories and physicals, house calls, and consultations, etc. which combine to form the total of unreferred services; the average number of referred services prescribed per doctor and per patient; and the incidence of laboratory and x-ray services.

Secondly, a study of the productivity of physicians is a necessary step in the determination of cost-efficient forms of medical care delivery. Reductions in the cost of producing private practice ambulatory services may result from efficiencies due to larger scale practices. In other industries, economists generally attribute these economies to the specialization of labor. This reasoning may be applied to the health care industry. Whereas total costs of rendering services may be higher in large scale practices, the total of services provided may be proportionately higher due to this specialization. These economies are also apparent because of the

more efficient use of capital. Due to the higher patient load, expensive equipment is utilized to a greater extent.

Since the possibility of achieving economies seems to exist in the health care field, it is of interest to proceed to a consideration of measuring doctor productivity.

Measuring Doctor Productivity

Most authors who have considered the productivity questions of delivering medical services have come to the conclusion that larger practices are likely to enjoy efficiencies of large scale practice. The following comment by Milton Roemer and Donald Dubois expresses this general concensus.¹¹

. . . Application of experience in industrial production has long suggested that systematic organization of health personnel and equipment could achieve economies for the usual reasons: specialization; division of labor; and fuller use of time and resources for achieving high capacity in the 'production process'. In the international context, this has meant the organization of polyclinics, health centres and a wide variety of related patterns. In America, it is usually epitomized as 'group medical practice'. By this we mean the effective mobilization of a wide range of skilled personnel for both curative and preventive service to the ambulatory patient.

A major study in Canada has substantiated these observations. In his study of productivity, Dr. Boan has proceeded from

¹¹Roemer and Dubois, op. cit., pp. 988 - 989.

the assumption that . . . "if specialization and division of labour is more easily accomplished in a group setting, there is a strong prima facie case that productivity is higher."¹² From a survey of doctors' incomes in Canada in 1962, he observes that the incomes of physicians in group practice are higher than those of solo physicians. By reference to the employment of nurses, technicians and clerical staff for six group practices in Canada, Dr. Boan concludes that the higher incomes for group physicians is not a result of employing fewer assistants per doctor. Table 2-1 reports the number of personnel per doctor for nurses, technicians, clerical and other employees. Group practice physicians employ approximately twice as many aides per physician compared to solo doctors. Consequently, because of the fact that division of labor is carried further in a group setting than in solo practice and incomes are still higher for group physicians, the Royal Commission study concludes that medical productivity is higher in group practice.

¹²Boan, op. cit., p. 23.

Table 2-1 ¹³

REPORTED NUMBER OF NURSES, TECHNICIANS, AND CLERICAL
PERSONNEL EMPLOYED PER DOCTOR, IN GROUP PRACTICE AND
IN SOLO PRACTICE, CANADA, 1960

Categories of Employees	Group Practice	Solo Practice	
		General	Specialist
Nurses	0.5	0.3	0.3
Technicians	0.4	0.05	0.07
Clerical and Other	<u>1.0</u>	<u>0.4</u>	<u>0.5</u>
Total Employees	1.9	0.8	0.9

The Royal Commission study also notes that productivity is liable to be enhanced by the use of more machinery and equipment which the division of labour makes possible. Due to the expense of much of the capital equipment, the latter is beyond the reach of the average solo practitioner. In groups, the lower cost of capital per doctor combined with the greater division of labor leads to the assumption that equipment is being used more efficiently.

To reap the benefits of specialization of labor, other researchers have estimated the optimal number of aides per specialty physician by using a production function for the delivery of private medical services.¹⁴ The information is of use as a guide to physicians

¹³Ibid., p. 27. The same table appeared in the Royal Commission study. Source: Questionnaire on the Economics of Medical Practice, administered by the Royal Commission on Health Services to all physicians and surgeons in Canada, March 1962.

¹⁴Arthur Owens, "The Key to Profitable Practice Growth", Medical Economics, (July 22, 1970), pp. 87-93.

when hiring registered nurses, technicians, receptionists and secretaries. Estimates are made to predict the overall effect on patient volume and gross billings of increasing the number of aides per doctor and the number of hours worked per doctor.

Assuming that productivity per doctor can be enhanced by the hiring of a specific number of aides, the solo doctor or very small group is at a disadvantage in attempting to optimize the level of employment. A well-known medical economist makes the following relevant observation about the solo doctor's dilemma.

A doctor can't hire 1.3 persons. It's only when he's part of a larger and different organizational setting - a medical group or a hospital - that this matter can be averaged out. A large organization, however, can take advantage of many types of aides, using them continuously and efficiently.¹⁵

One opposing view to the contention that group practice physicians may be more productive than solo doctors, is held by Richard Bailey.¹⁶ He studied internists in various-sized, fee-for-service practices in Northern California. Bailey observes that the total output of larger clinics exceeded that of smaller units or solo practitioners only because of longer working hours per month. In terms

¹⁵A quote by Rashi Fein in "The Effect on fees, expenses, earnings", Medical Economics, (September 30, 1968), p. 121.

¹⁶Richard M. Bailey, "Economies of Scale in Outpatient Medical Practice", Group Practice, (vol. 17, July 1968), pp. 24-33.

of weighted patient contacts with a doctor per hour, there was no greater productivity with scale. However, when Dr. Bailey considers the total medical output of a clinic or larger group practice, including x-ray and laboratory services, the claim that the larger units have higher outputs per hour, measured in gross income, is substantiated.

One of the major problems in measuring doctor productivity is that output per unit of time is a difficult concept to define and to measure for service industries such as health care and education. This difficulty arises because the final product, a healthier and more educated population, does not lend itself easily to quantitative measurement. In the realm of health, indices such as age-specific death rates, rates of infant mortality and the incidence of specific diseases have been used as yardsticks of healthiness of populations.¹⁷

Consequently, economists and others interested in health care have turned to what might be considered 'proxy' measures of productivity. In September of 1968, the journal Medical Economics devoted an issue to the question of raising doctor productivity. They defined medical productivity as:¹⁸

. . . "the number of patients seen or the amount of services provided within a given time."

¹⁷Osler L. Peterson, et al., "What is Value for Money in Medical Care?", The Lancet, (April 8, 1967), pp. 771-776.

¹⁸"Step Up your Productivity?, Symposium", Medical Economics, (September 30, 1968), pp. 63+.

In this study, the latter criteria are used in attempting to measure medical productivity.

The major objection to measuring productivity in this manner is that one is reducing the physician-patient contact to a time value with no consideration for how well the doctor treats the patient's complaint. How does one compare the quality of care rendered between various facilities?

One authority suggests potential measurements and several benefits of group practice which enhance the quality of medical and health care.¹⁹ In a group setting, new members of the group are chosen carefully. There is a comprehensiveness of total services offered and rendered. The group physician can take time off to study or rest. All of these amenities, according to Dr. Howell, enhance the quality of care. Over and above these characteristics of group practice, he notes one overriding pre-condition for high quality care. The opinion is forwarded that physician competence is the critical factor to quality of care assuming most any epitomizing definition for 'quality'.²⁰

With this important determinant of 'quality of care' in mind, perhaps one can justify the use of volume of patients and services rendered per unit of time as measures of physician productivity. Due to the difficulties involved in making a quality evaluation, in this study, it is assumed that the 'quality of care' is uniform among physicians considered.

¹⁹James T. Howell, op. cit.

²⁰Ibid., p. 20.

Classification of Groups

An attempt was made to choose a sample of three distinct groups based on the number of medical doctors employed in the practice. In most cases the groups chosen possess the Canadian Medical Association criteria of a formal group.

The groups are classified as large, medium and small to maintain their anonymity. The small group consists of six to fifteen doctors, the medium group of sixteen to thirty-five doctors and the large group of more than thirty-five doctors. Due to the small number of groups in each classification it is reasonable to assume that the selection of a group would be a reflection of the true behavior of characterizing that group in general. The selection of each group was random, further substantiating the suggestion that the selection of practices was unbiased.

Apart from size, these groups may be further classified as to specialty. The multi-specialty group is one which has in its employ, doctors who practice various specialties. On the other hand, the single specialty group concentrates on one specific bloc of practice such as obstetrics or general practice. Where possible, the pattern of practice of doctors in single specialty groups are compared with those of doctors practicing in multi-specialty settings.

The scope of any study is inevitably limited by the availability and suitability of data. In Manitoba, doctors submit claims for services rendered to the Manitoba Health Services Commission. These patterns of practice and payments are recorded and compiled into monthly records according to blocs of practice. This record is divided

into referred and unreferred services. The former are services rendered directly by the physician to the patient whereas the latter are services referred by the physician to other health services personnel. The number of services are recorded under thirty codes ranging from history and physical examinations to cytological smears. The costs for both referred and unreferred services generated by each physician are also included along with the monthly volume of patients per doctor.

The claims from doctors, optometrists and chiropractors are classified under twelve major blocs ranging from internal medicine to physical medicine. There are further sub-classifications: surgery into seven sub-blocs; eye-ear-nose-throat into three sub-blocs; general practice as to urban and rural; and physical medicine and physical medicine-chiropractic.

Due to the volume of claims for any given month, a choice was made as to the blocs to be considered. The number of doctors practicing under general practice and internal medicine specialties represent 40% of the registered physicians submitting claims for this period and thus were an obvious first choice for study. Physicians practicing the specialty of obstetrics-gynaecology are the third bloc considered. These three blocs of practice account for 45% of the total claims submitted for the one month period chosen.²¹

²¹A one month period in 1970 was chosen for analysis. Due to the volume of claims submitted for any given month and after discussions with Mr. R. Harvey, Data Processing Manager of Medical Claims for the Manitoba Health Services Commission, the one month period chosen was considered indicative of the yearly volume of claims.

Physicians practicing in the chosen blocs are studied for each of the settings (small, medium and large groups) within which they work. The absolute values and percentages shown in the charts are averages for all doctors of the given specialty practicing within that group.

In the charts, the size and nature of the groups are listed for the various blocs of practice. For each group, the following information is given for a one-month period: the number of doctors practicing a specific specialty; the average number of patients per doctor; unreferred services per doctor; unreferred services per patient; referred services per doctor; referred services per patient and the percentage distribution of unreferred and referred services.

The unreferred services are those services which the physician performs himself. This includes the conduct of a history and physical examination, a hospital call, a consultation, an injection, et cetera. Referred services are those services prescribed or generated by any physician but not performed by the same physician. These services include laboratory tests, x-rays, heart tracings, surgery, et cetera.

Under unreferred services, subsequent office calls are return visits of patients or those visits to a physician made after the initial office call. Consultations are defined as the situation in which a physician, after appropriate examination of the patient, requests the opinion of another physician because of the complexity, obscurity or seriousness of the patient's illness or because another opinion is requested by the patient or a person acting on his behalf.²²

²²A definition provided by the Manitoba Health Services Commission.

For referred services, laboratory tests are classified as to short and long.

Short laboratory tests are approximately fifteen routine laboratory procedures which may be performed in the doctor's office. In contrast, the long laboratory tests are those more exotic tests which must be performed in an approved laboratory facility by a medical practitioner. Generally, these facilities are only found in the clinic practices or central laboratories.

As noted in the discussion of productivity, the larger practices are more likely to employ more nurses, technicians, clerical, and other non-medical staff per doctor. Consequently, the primary purpose of the analysis is to compare the methods of practice and productivity between specialists practicing in settings of various size. These results are later compared and contrasted with similar analyses of solo and teaching doctors.

Comparative Analysis of Specific Blocs

With this background information on the classification of groups and the choice of specialties, one may proceed to a consideration of important characteristics of the general practice, internal medicine and obstetrics blocs. Tables 2-1 to 2-4 inclusive portray the relevant information for a consideration of the group practice physicians during the one month period. In all cases, the tables indicate average values for all physicians practicing a specific specialty within the given size of practice. In Table 2-4, the incidence of services per patient is a number derived as a result of

determining the ratio between the average number of services rendered per doctor and the average volume of patients seen per doctor. Although data on the volume of patients per doctor did not account for those patients who may have previously visited other physicians in the same facility, this ratio provides an indication of the incidence of services received per patient.

An intensive comparison of the patterns of practice between physicians in various sized group practices is deferred to Chapter 5 where the activities of solo physicians and teaching physicians is also considered. At present, observations resulting from a study of the data analysis are discussed.

A. General Practice

1. Subsequent Visits

General practice physicians in the larger multi-specialty groups show a higher percentage of subsequent office visits relative to the other groups. Approximately 39% of the visits to general practitioners in the large multi-specialty group, are return visits. This compares with 26% and 17% for the groups of medium size and small size respectively. Without further information on the types of maladies treated in each of the groups, comments on the significance of this observation are impossible.

2. House Calls

House calls, an important aspect of care from general practitioners in former years, now occupy a relatively insignificant portion of total services for this bloc in group practices. As a percentage of total

Table 2-2

PERCENTAGE DISTRIBUTION OF SERVICES FOR GROUP PHYSICIANS IN THREE BLOCS OF PRACTICE*

	Initial Office Calls	Subsequent Office Calls	History and Physical	Hospital Calls	Consultations	House Calls	Injections	Heart Tracings	Cytological Smears	Short Laboratory Tests	Other	Total	Short Laboratory	Long Laboratory	X-rays	Heart Tracings	Consultations	Hospital Calls	Cytological Smears	Other	Total	
<u>General Practice</u>																						
Small Single Specialty	35.7	16.7	11.2	10.6		1.7	7.0			17.1	100.0		39.5	21.5	24.6	3.4	3.0	2.2	3.5	2.3	100.0	
Medium Multi-Specialty	29.1	26.0	15.6	5.7		5.0	7.5			11.1	100.0		35.8	14.8	39.7	4.7	5.0			0.0	100.0	
Large Multi-Specialty	21.0	39.1	25.1	1.0	3.4	1.3				9.1	100.0		38.8	21.7	31.2	2.5	2.2			3.6	100.0	
<u>Internal Medicine</u>																						
Small Multi-Specialty	19.0	22.3	16.0	20.3	1.2	2.8	13.5			4.9	100.0		34.2	19.9	35.5	3.1	3.1				4.2	100.0
Medium Multi-Specialty	9.8	34.3	6.6	34.3	10.3	0.7				4.0	100.0		33.8	23.3	18.5	4.9	5.6				13.9	100.0
Large Multi-Specialty	8.3	27.2	16.0	24.0	5.6	0.8				18.1	100.0		37.5	30.9	24.2	2.8	1.1				3.5	100.0
<u>Obstetrics-Gynaecology</u>																						
Small Single Specialty	5.0	5.6	21.5	0.1	2.8			20.9	32.1	12.0	100.0		6.2	11.5	11.1		16.9	3.8			50.5	100.0
Small Multi-Specialty	19.9	15.1	15.1	1.1	11.1			22.1		15.6	100.0		53.4	9.3	10.4			2.9	14.2		9.8	100.0
Medium Multi-Specialty	13.7	7.6	24.4	3.6	7.9			26.9		15.9	100.0		41.1	11.5	8.9		6.0	1.9	18.1		12.5	100.0
Large Multi-Specialty	19.2	5.6	22.3	1.7	2.7			34.9		13.6	100.0		56.7	6.2	5.3		3.0	7.1			21.7	100.0

*The blank spaces under certain services indicate a zero or insignificant value for the service.

Table 2-3

AVERAGE UNREFERRED SERVICES AND REFERRED SERVICES PER PHYSICIAN
AND PER PATIENT FOR GROUP DOCTORS IN THREE BLOCS OF PRACTICE

Type of Practice	Number of Physicians	Patients per Doctor	Un- referred Services per Doctor	Un- referred Services per Patient	Referred Services per Doctor	Referred Services per Patient
<u>General Practice Bloc</u>						
Small Single Specialty	8	413	678	1.7	796	1.9
Medium Multi- Specialty	7	317	523	1.7	557	1.8
Large Multi- Specialty	5	182	251	1.4	856	4.7
<u>Internal Medicine Bloc</u>						
Small Multi- Specialty	3	212	330	1.6	447	2.1
Medium Multi- Specialty	6	133	232	1.7	319	2.4
Large Multi- Specialty	17	254	440	1.7	1,082	4.3
<u>Obstetrics-Gynaecology Bloc</u>						
Small Single Specialty	5	203	448	2.2	104	0.5
Small Multi- Specialty	3	152	214	1.4	411	2.7
Medium Multi- Specialty	4	155	242	1.6	330	2.1
Large Multi- Specialty	4	210	338	1.6	250	1.2

Table 2-4

AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN IN VARIOUS SIZED GROUP FACILITIES

Type of Practice	Initial Office Calls	Subsequent Office Calls	History and Physical	Hospital Calls	Surgeries	Consultations	Cytological Smears
<u>General Practice</u>							
Small Single Specialty	242	113	76	72	27		
Medium	152	136	82	30	20		
Large	53	98	63	3	1		
<u>Internal Medicine</u>							
Small Multi-Specialty	63	74	53	67		4	
Medium	23	80	15	80		24	
Large	37	120	70	106		25	
<u>Obstetrics-Gynaecology</u>							
Small Single Specialty	22	25	97			13	94
Small Multi-Specialty	43	32	32			24	47
Medium	33	18	59			19	65
Large	65	19	75			9	117

Table 2-5

SERVICES RECEIVED PER PATIENT FROM PHYSICIANS IN THREE BLOCS
OF PRACTICE PRACTICING IN VARIOUS SIZED GROUP FACILITIES

Type of Practice	Initial Office Calls	Subsequent Office Calls	Hospital Calls	History and Physical	Cytological Smears	Short Lab. Tests	Long Lab. Tests	X-rays
<u>General Practice</u>								
Small Single Specialty	.54	.27	.17	.18		.76	.41	.48
Medium	.48	.43	.09	.26		.63	.26	.06
Large	.29	.54	.02	.35		1.83	1.02	1.46
<u>Internal Medicine</u>								
Small Multi-Specialty	.30	.35	.32	.25		.73	.42	.75
Medium	.17	.60	.60	.11		.81	.56	.44
Large	.15	.47	.42	.28		1.60	1.30	1.00
<u>Obstetrics-Gynaecology</u>								
Small Single Specialty	.11	.12		.47	.46	.74	.06	.06
Small Multi-Specialty	.28	.21		.21	.31	1.45	.25	.28
Medium	.22	.12		.38	.42	.88	.25	.19
Large	.31	.09		.36	.56	.68	.07	.06

services, this service ranges from a low of 1.28% for the large group to a high of 5% for the medium group.

3. Referred Services

The large multi-specialty group practice has the highest number of referred services per doctor per month. The bloc practicing in the large group shows an absolute number of referred services per doctor fifty percent higher than the medium group and eight percent higher than the small group. The general practice bloc of the latter group are handling approximately 100% more patients per doctor per month. The ratios of referred services per patient are 4.70 for the large group, 1.76 for the medium and 1.93 for the small.

The relative proportion of various referred services is fairly uniform for all groups studied. Short laboratory tests constitute the highest proportion of referred services followed by x-rays and other laboratory tests. These three services account for an average of 91% of total referred services for the large and medium group but only 85.5% of total referred services of the small group. This seems indicative of the fact that the other referred services such as hospital calls and cytological smears assume a more important role for the smaller single specialty practice.

4. Productivity

From the aspect of patients per doctor and unreferred services per doctor as measures of output, the small single specialty group is the most productive of the three. These physicians see an average of 413 patients per month compared to 317 for the medium sized group and 182 for physicians in the large practice. The small group also

averages 678 unreferred services per doctor compared to 523 for the medium group and 251 for the large group.

The average units of services rendered per physician as portrayed in Table 2-4, further substantiate the high level of productivity achieved by the small single specialty practitioners.

B. Internal Medicine

For the bloc of internal medicine, the patterns of practice of internists are considered for the large multi-specialty group, the medium multi-specialty group and the small multi-specialty group. In each case, there are seventeen, six and three internal medicine specialists practicing in the respective groups.

Due to the small number of groups of this size existing in the metropolitan area of Winnipeg, the three groups chosen represent a statistically significant sample. With the exception of the small multi-specialty group, the others were analyzed under the general medicine bloc.

1. Subsequent Visits

As observed, the medium sized group has the highest proportion of subsequent office visits. Thirty-four percent of visits to this practice are return visits compared to twenty-seven percent and twenty-two percent for the large and small groups respectively.

2. House Calls

Again, house calls represent a small portion of total unreferred services. For internists, house calls represent from .8%, .7% and 2.8% of total unreferred services for the large, medium and small multi-specialty groups respectively.

3. Referred Services

The most apparent difference between the groups is the higher absolute number of referred services per doctor for internists practicing in the large multi-specialty group. The number of referred services per doctor in this group is 142% of referred services of the small group and 240% of referred services of the medium group.

The computation of referred services per patient per month illustrates the fact that the large practice does not process a greater proportionate number of patients. The ratios of referred services per patient are 2.1, 2.4 and 4.3 for the small, medium and large groups respectively. The difference is probably accounted for by the fact that laboratory services occupy a more important portion of total referred services for the large group relative to the other groups.

4. Productivity

The largest multi-specialty group is most productive in terms of patients per doctor, unreferred services per doctor and unreferred services per patient. Patients seen by each internist average 90% higher than the group of medium size and 20% higher than the small group.

The absolute number of unreferred services per doctor per month are 330, 232, and 440 for the small, medium and large groups respectively. Consequently, patients attending the large multi-specialty practice receive 1.7 unreferred services per patient to 1.7 and 1.6 for the medium group and small group respectively.

C. Obstetrics and Gynaecology

Due to the nature of the specialty, the scope of services offered between groups is uniform. Also, house calls do not constitute a significant portion of unreferred services.

1. Subsequent office calls

Except for the small multi-specialty clinic, subsequent office calls account for an average of 6.5% of the total unreferred services among the remaining groups. For the former, this service constitutes 15.1% of unreferred services.

2. Referred Services

The small multi-specialty group also has the highest number of referred services per patient for the obstetrics and gynaecology bloc. In one month, each patient averages 2.7 referred services compared to .5 referred services per patient for the small single specialty practice. This low number may be accounted for by small percentage (6.2%) of short laboratory tests under referred services. According to the data, the single specialty doctors render the majority of short laboratory tests themselves.

3. Productivity

Initially, the small single specialty group appears slightly more productive than the large multispecialty group. Whereas the number of patients per doctor seen per month is nearly equal, the small group renders a larger number of unreferred services. The latter group averages 2.2 unreferred services per patient compared to 1.6 for both the large and medium practices.

As noted above, one must consider that 32% of unreferred services

of the small single specialty group are routine laboratory services. Taking this fact into consideration along with the high relative values for the average units of services rendered by the large multi-specialty physicians, prompts the conclusion that the doctors of the large practice, in this particular specialty, are most productive.

Summary

The following major points are apparent as a result of this analysis:

1. For the three blocs considered, there is no apparent trend in the incidence of return visits. The percentage values of subsequent visits by specialty was not related to the size of the practice.
2. In each case, house calls represented an insignificant portion of unreferred services. The medium sized group showed the highest value where house calls represented 5% of the total of unreferred services.
3. With the exception of the Obstetrics and Gynaecology bloc, referred services per patient are substantially higher for the large multi-specialty practice.

Table 2-6

INCIDENCE OF REFERRED SERVICES PER PATIENT

		All Referred Services	Short Laboratory Tests	Long Laboratory Tests	X-rays
GENERAL	Large Group	4.70	1.83	1.02	1.46
PRACTICE	Average of Other Groups	1.90	0.70	0.34	0.27
INTERNAL	Large Group	4.30	1.60	1.30	1.00
MEDICINE	Average of Other Groups	2.30	0.77	0.49	0.60

4. Using the adopted measure of productivity, and without weighting the various unreferred services, the large multi-specialty group physicians show the highest relative levels of medical productivity for both the internal medicine and obstetrics-gynaecology blocs. The small single specialty group of general practitioners appear to have the highest level of productivity relative to the other groups chosen for the general practice bloc. These results are based upon the patients per doctor and unreferred services rendered per doctor shown in Table 2-3 and the average units of selected services rendered per physician shown in Table 2-4.

Chapter 3

SOLO PRACTICE

The solo practice refers to the method of delivering medical services where the physician is practicing by himself in contrast to practicing in a group. The only common characteristic between the group practice and the solo practice, with respect to the criteria used in defining groups, is the possible use of a common facility. The solo doctor is not sharing the facilities but may be renting office space in the same building with group practices or with other solo doctors. In Winnipeg, the Medical Arts Building is one of many examples where this is the case. Where doctors are practicing under these circumstances, the close proximity of the practices of colleagues renders the term 'solo' doctor somewhat obsolete.

Especially in the urban areas, the solo practitioner rarely works absolutely by himself. The doctor is often required to obtain diagnostic services whether working in a group or as a solo. For difficult cases, which occur irrespective of the setting for the practice of medicine, consultations with peers and referrals to specialists may be required. It has been argued by the proponents of groups that consultations with colleagues is more easily effected in group practices. Nevertheless, for many blocs of practice the solo doctor has an equal opportunity to confer with other doctors since much of their time is spent in a common setting.

These sentiments are expressed by one solo practitioner who practices in an urban area and feels that the phrase 'solo practice' is misleading.

No physician is truly in solo practice today, when so much of his day's work, his professional contacts, his informal consultations, and his review by his peers are centered in the hospital.¹

Proponents of solo practices advance the argument that the setting for delivering medical services in a solo situation is much more personal and much less institutional compared to the environment of the large multi-specialty practices.² Also, in the large clinic setting, with many physicians involved in the patient's care, no one doctor has the feeling that he is directly responsible for the patient. Perhaps, some dilution of responsibility results from the group emphasis on more comprehensive coverage, more back-up physicians, and more days and nights off.³

The personal aspects of the solo setting take on even greater importance when one considers that the provision of comfort and understanding is a primary role of the physician. Since many of the present

¹Michael J. Halberstam, "Who says solo practice is obsolete?", Medical Economics, (December 23, 1968), pp. 68-83.

²Canadian Medical Association, op. cit., p. 13.
Halberstam, op. cit., p. 83.

³Ibid., p. 83.

day illnesses are caused or aggravated by the mass production, anonymous way of life in the larger urban centres, it is worthwhile to consider a more personal practice of medicine. Does a medical system designed primarily for efficiency in curing achieve this goal, or does it make the goal of comforting more difficult?

Since the benefits of comfort and understanding cannot be translated into statistics, one is forced to consider measurable phenomena in the practice of medicine. Consequently, for a random sample of the solo general practitioners, and for all the solo doctors practicing in the internal medicine and obstetrics-gynaecology blocs, patterns of practice and productivity are considered. The format is identical to that used in Chapter 2 to analyze the various blocs of physicians in group practices.

Let us now proceed to the analysis of the specific blocs of solo physicians conducting private practices.

Data Collection and Analysis of Specific Blocs of Solo Physicians

A. General Practice

Solo general practitioners in urban Winnipeg include the following categories of physicians: physicians practicing only in a solo setting; physicians practicing in a solo private setting and teaching and/or researching at the University of Manitoba Medical School; solo general practitioners who also see patients at community welfare centres; solo general practitioners who fall into both of the latter two categories, and general practice solo physicians who claim for services rendered under some other bloc besides the general practice bloc. For purposes of classification, the Manitoba Health Services

Commission maintain separate accounts for the claims of any one doctor whose work is generated in a variety of settings such as the above. Consequently, the volume of patients and the total of services rendered and referred for any private solo practice (and for many group practice doctors) may only represent a portion of the total work done by that doctor because of his duties at other facilities.

In the chapter on group practices, the doctors practicing in groups also registered claims for services rendered outside of the group setting. These patterns of practices from other sources other than the group were not included in the productivity considerations or in the scope and incidence of services analysis. To maintain uniformity in the study, and to facilitate comparisons in a later chapter, the following conditions were met when considering the practices of solo physicians.

The sample of 53 general practitioners includes two doctors who also submitted claims for work done while teaching and six doctors who provide medical services at a hospital or community agency outside of the solo facility. The patterns of practice generated from these sources outside the solo setting were not included in the analysis. The sample also included four doctors who were qualified to claim for work done under a specialty other than the general practice bloc. During the time period of the study, it is assumed that these physicians were only working under the general practice bloc since no claims were submitted for practice under the other specialty.

The random sample of 53 solo general practitioners was chosen from the 154 urban solo general practice physicians who submitted claims

during the time of the study. The data gathered is for the same one month period in 1970 as that used for the group practice analysis.

Table 3-1 portrays the patients per doctor and the absolute number of unreferred and referred services per doctor and per patient. All the values are averages for the sample.

Table 3-1

UNREFERRED SERVICES AND REFERRED SERVICES PER SOLO
DOCTOR AND PER PATIENT

Size of Sample	Patients per Doctor	Unreferred Services per Doctor	Unreferred Services per Patient	Referred Services per Doctor	Referred Services per Patient
53	187	430	2.30	153.5	.82

Table 3-2 shows the percentage distribution of unreferred and referred services for this sample of general practice physicians.

Table 3-2

PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED
SERVICES FOR SOLO GENERAL PRACTITIONERS

	<u>Unreferred Services</u>	<u>Referred Services</u>
Initial Office Call	24.8	
Subsequent Office Calls	21.0	
Hospital Calls	10.7	
Short Laboratory Tests	17.9	17.1
History and Physical	6.7	
House Calls	4.9	
Surgery less than \$50	3.3	
Heart Tracings	1.0	3.1
Long Laboratory Tests		21.6
X-Rays		38.8
Consultations		6.2
Cytological Smears		3.0
Other	9.7	10.2
Total	100.0	100.0

B. Internal Medicine

For the time period chosen, forty-two solo doctors practicing the specialty of internal medicine submitted claims for work done in private practices. Of this total, twenty-two of the physicians conduct their private practice from the University of Manitoba Medical School, a ward of a hospital, from a clinical investigation unit of a hospital or from an out-patient department of a hospital. The remaining twenty internists conduct their practices from a solo facility apart from any of the latter.

Data was collected and analyzed for the twenty doctors practicing in a separate solo facility according to the format used previously. Eighty percent of the solo physicians are also employed in a teaching and/or researching capacity with the University Medical School. This percentage of solo teaching internists is only slightly higher than the percentage recorded for all internists, from both groups and solo, who submitted claims during this period. The majority of physicians practicing under the specialty of internal medicine are also employed as teaching doctors. Of the ninety-seven private practice internists, seventy-one percent were also employed by the University Medical School. Consequently, anticipating the later comparisons with other internists, there does not seem to be any apparent bias implications for the results of the analysis of solo internists relative to all practicing internists. Nevertheless, one must weigh the fact that some teaching physicians are employed on a part time basis and that geographical full time teachers are restricted as to the amount of time they practice in their private offices.

As Table 3-2 indicates, the four unreferred services of initial and subsequent office calls, hospital calls, and short laboratory tests constitute 74.4% of the total of unreferred services. For referred services, all laboratory tests and x-rays account for 77.5% of all services.

It is also of interest to consider the quantity of medical services produced. Thus, Table 3-3 measures the average number of services produced per physician and received per patient. Although it is recognized that some services require a longer average time spent per physician, weights have not been assigned. The absolute numbers of ancillary services per doctor and per patient, is also included in Table 3.3.⁴

Table 3-3

AVERAGE PHYSICAL UNITS OF SERVICES PRODUCED PER PHYSICIAN
AND RECEIVED PER PATIENT FOR A ONE MONTH PERIOD IN 1970

	<u>Solo General Practitioner</u>	<u>Per Patient</u>
Initial Office Calls	107	.57
Subsequent Office Calls	90	.48
History and Physical	29	.16
Hospital Calls	46	.25
Short Laboratory Tests (total)	103	.55
Long Laboratory Tests	33	.18
X-rays	60	.32

⁴The sample was chosen by using a random number table.

Table 3-4

UNREFERRED SERVICES AND REFERRED SERVICES PER SOLO
INTERNIST AND PER PATIENT

Sample Size	Patients per Doctor	Unre-ferred Services /Dr.	Unre-ferred Services per Patient	Referred Services per Doctor	Referred Services per Patient
20	213	438	2.06	273	1.29

Each patient under the care of the twenty solo internists is receiving an average of 2.06 unreferred services and 1.29 referred services for the time period considered. The composition of the services rendered is shown in Table 3-5. Hospital calls, subsequent office calls, and heart tracings are the most significant unreferred services, accounting for 62% of the total. Laboratory tests and x-rays constitute 83% of the total referred services.

Table 3-5

PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED
SERVICES FOR SOLO INTERNISTS

	<u>Unreferred Services</u>	<u>Referred Services</u>
History and Physical	8.2	
Hospital Calls	24.6	1.9
Subsequent Office Calls	21.4	
Heart Tracings	15.9	
Initial Office Calls	8.4	
Consultations	5.9	5.3
House Calls	2.0	
X-rays		31.3
Long Laboratory Tests		35.5
Short Laboratory Tests	5.6	16.3
Other	<u>8.0</u>	<u>9.7</u>
Total	100.0	100.0

For the unreferred and referred services which constitute the most significant portion of the total services, the absolute number of services per solo internist and per patient are given in Table 3-6.

Table 3-6

AVERAGE PHYSICAL UNITS OF SERVICES PRODUCED PER
PHYSICIAN AND RECEIVED PER PATIENT FOR SOLO INTERNISTS

	<u>Per Internist</u>	<u>Per Patient</u>
Initial Office Calls	37	.17
Hospital Calls	108	.51
Subsequent Office Calls	94	.44
Heart Tracings	70	.33
History and Physical	36	.17
X-rays	86	.41
Short Laboratory Tests	45	.21
Long Laboratory Tests	97	.46

C. Obstetrics and Gynaecology

At the time of the survey, there were ten physicians practicing in solo, apart from a hospital or the Medical School, under the Obstetrics-Gynaecology bloc. Patterns of practice for the ten physicians are considered in the following tables.

Table 3-7 shows the patient volume for the period and the absolute number of unreferred and referred services per doctor and per patient.

Table 3-7UNREFERRED SERVICES AND REFERRED SERVICES PER SOLO
OBSTETRICIAN-GYNAECOLOGIST AND PER PATIENT

Sample Size	Patients per Doctor	Unre-ferred Services per Doctor	Unre-ferred Services per Patient	Referred Services per Doctor	Referred Services per Patient
10	183	343	1.87	189	1.03

The distribution of services in Table 3-8 indicates that cytological smears and short laboratory tests, as might be expected for this specialty, constitute a more significant portion of total unreferred services. Conversely, x-rays account for a small segment of the total referred services relative to other specialties.

Table 3-8PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED
SERVICES FOR SOLO OBSTETRICIANS-GYNAECOLOGISTS

	<u>Unreferred Services</u>	<u>Referred Services</u>
Cytological Smears	24.0	23.9
History and Physical	18.4	
Laboratory Tests (short)	19.1	17.8
Subsequent Office Calls	8.4	
Consultations	6.2	8.8
Confinements	4.1	
Initial Office Calls	10.8	
Anaesthetic		13.3
Long Laboratory Tests		12.9
Hospital Calls	1.0	8.4
X-rays		7.0
Other	8.0	7.9
Total	100.0	100.0

The absolute number of services rendered per physician and received per patient is given in Table 3-9. The values for cytological smears and laboratory tests constituted the total of unreferred and referred services.

Table 3-9

AVERAGE PHYSICAL UNITS OF SERVICES PRODUCED AND PRESCRIBED PER PHYSICIAN AND PER PATIENT FOR OBSTETRICIAN-GYNAECOLOGISTS

	<u>Per Physician</u>	<u>Per Patient</u>
Initial Office Calls	37	.20
Cytological Smears	82	.45
History and Physical	63	.34
Laboratory Tests (short)	99	.54
Subsequent Office Calls	29	.16
Consultations	21	.11

Relevant data for the solo physicians, practicing in the three blocs, has been presented in this chapter. It is evident that short laboratory tests constitute a more prominent role as an unreferred service for solo physicians. In lieu of referring the patient to separate laboratory facilities, the solo doctor is apt to provide the service in his office. Apart from this point, analysis of the data on solo doctors is postponed until Chapter 5 where the results are compared with those generated in Chapters 2 and 4.

Chapter 4

TEACHING FACILITIES

In this chapter the patterns of practice of doctors employed in a teaching capacity are considered. Claims for work done as teaching doctors are also filed with the Manitoba Health Services Commission for remuneration.¹ Consequently, the scope of services rendered and the relative importance of various unreferred and referred services can be considered for the same time period as that chosen for the group practice and solo practice discussion. Laboratory services and x-ray services rendered by teaching physicians at the time of the study were paid for by the Manitoba Hospital Commission. Thus, since these services are not included on the claims of the former Manitoba Health Services Insurance Corporation, they are excluded from the referred services in this analysis.

The teaching facilities are the four hospitals affiliated with the University of Manitoba Medical School. Here, the medical student is afforded the opportunity of observing the science of medicine and applying the principles of health care. The student, depending upon the years of training completed, spends much of his practical training time

¹Fees received by teaching doctors are deposited in a central fund. Twenty-five percent of the revenue is forwarded to the hospital to cover the costs incurred as a result of using hospital facilities.

on patients who are hospitalized. The experience of treating ambulatory patients is gained through the observation and delivery of care in the out-patient and emergency departments. Thus, because of the many facets of a successful learning environment, the medical staff allocate their time to a number of activities--in-patient care, out-patient care, lectures and, research. Over and above their teaching duties, most of the physicians also maintain private practices.

On the claims for services rendered in a teaching facility, no distinction is made between in-patient and ambulatory care. From the analysis of teaching physicians in the various blocs, the average distribution of services gives some indication of their relative importance.

Some medical staff personally feel that greater emphasis should be placed on the superior learning environment of an ambulatory care facility. There is particular emphasis on the importance of continuing comprehensive care. Students benefit by receiving more exposure to the type of practice which is more typical of that to be encountered upon graduation. According to the data analyzed for the three blocs, most teaching is conducted in an in-patient setting. This is perhaps a result of necessity arising from the acute lack of space in most hospitals rather than any serious opposition to the above concept.

No attempt is made to assess the productivity of physicians in the teaching facilities. The allocation of physician time over a number of activities and the nature of any learning situation are the main reasons for this decision.

When considering the practices of physicians in either groups or solo, a segment of the samples chosen were also employed in a teaching-researching capacity with the Medical School. In assessing the productivity of the private practices of these doctors, one makes the assumption that on the average, all teaching physicians, who also maintain private practices, generally spend an equal amount of time away from their practice in fulfilling their teaching duties.²

Although each physician on the average, spends an equal amount of time away from his private practice, each physician is not likely to allocate his time in a uniform manner in fulfilling the teaching role. The teaching physician is contributing to health care and the

²This assumption is considered only for the internal medicine and obstetrics-gynaecology blocs where a large portion of the doctors fulfilled teaching duties.

It is based mainly on a scrutiny of the attendance schedules of teaching physicians which seems to indicate a fairly reasonable distribution of work load. The assumption would be quite unreasonable for the surgery blocs, where the schedules would be much more difficult to regularize.

Also, each individual doctor, depending upon the incidence of hospitalization of his patients, will spend varying amounts of time away from his practice visiting private patients. These hospital calls are accounted for in the physician's pattern of practice and productivity analysis and the time is considered as time spent in private practice.

In addition to private practice and teaching duties, some doctors also work at community agencies. Since the number in this category is small, time spent in this capacity is not considered.

It is recognized that pitfalls are attached to the above assumption. Part time teachers are not likely to spend the same amount of time teaching as their geographical full time colleagues. Also, administrative duties vary among teaching doctors. These considerations further reinforce the assumption that productivity comparisons of teaching physicians with private practice physicians are meaningless.

learning environment equally between the hospital ward, the out-patient clinic, the operating room or the lecture theatre. Thus, to separate his contribution in each in order to assess his output is not only undesirable but perhaps impossible.

Any activity where teaching is a main objective, is liable to be more costly in terms of the extra time necessary to complete the activity and the necessity to allow for extra time to correct errors. Every teaching institution must maintain or strive to maintain a high standard of work. This assumption is valid not only for the teaching of medicine but also for the teaching of carpentry or architecture or accounting. In medicine the maintenance of a high standard of care may mean the necessity to over investigate some cases in order to stress the prime causes of illness. The extra time is justified since students learn to prescribe care for specific health problems and not for superficial symptoms.³

The possibility that students will not arrive at correct solutions to health problems and may in fact perform services which must be re-done, adds to the cost of providing care in a teaching facility. Thus, the objectives of reducing real costs, by increasing the productivity of health care personnel while attempting to maintain a high standard of teaching as an equally important objective, seem somewhat incompatible.

The analysis of the patterns of practice of the three blocs of teaching physicians indicates the importance of various services rendered by doctors fulfilling the teaching, research and service

³These concepts are a result of interviews with several teaching physicians.

functions in a hospital. It also indicates the role played by health personnel working in these facilities as part of the total care provided by general practitioners, internists and obstetrician-gynaecologists practicing in private facilities. In Chapter 5, these results are considered in light of the results from the group practice and solo practice discussions.

Data Collecting and Analysis of Specific Blocs of University Teaching Physicians

A. General Practice

The results of the analysis for this bloc represent the average patients, average unreferred services and average referred services for all of the University employed general practitioners submitting claims for the time period chosen. The seventeen doctors submitting claims to the Manitoba Health Services Commission rendered their teaching services from the four teaching hospitals. Work done at the Winnipeg General Hospital and the Deer Lodge Veterans Hospital comprised the bulk of total services.

Six of the general practitioners conduct private practices in solo facilities apart from a hospital or medical school. Two of the total practice in a private group setting and the remainder are based at a hospital or at the Medical School.

Table 4-1 gives the unreferred services per doctor and per patient for teaching physicians practicing in the general practice bloc.

Table 4-1UNREFERRED SERVICES AND REFERRED SERVICES PER
DOCTOR AND PER PATIENT

<u>Teaching Doctors</u>	<u>Patients per Doctor</u>	<u>Unreferred Services per Doctor</u>	<u>Unreferred Services per Patient</u>	<u>Referred Services per Doctor</u>
17	42.7	276	6.5	3.4

As indicated by Table 4-2, the major portion of unreferred services is composed of hospital calls.

Table 4-2

PERCENTAGE DISTRIBUTION OF UNREFERRED SERVICES AND REFERRED SERVICES

	<u>Unreferred Service</u>	<u>Referred Service</u>
Hospital Calls	84.2	
Office Calls (subsequent)	6.4	
Office Calls (initial)	3.5	
History & Physical Exam	3.5	
Consultations		74.0
Other	<u>3.4</u>	<u>26.0</u>
Total	100.0	100.0

With the exclusion of x-rays and laboratory services, consultations represent the highest proportion of unreferred services. The close proximity of other doctors and the necessity to provide exemplary care in a teaching hospital, probably account for the importance of this service.

The absolute number of services received by each patient is portrayed in Table 4-3.

Table 4-3

AVERAGE PHYSICAL UNITS OF SERVICES RECEIVED PER PATIENT

Hospital Calls	5.45
Office Calls (subsequent)	.41
Office Calls (initial)	.22
History and Physical	.23
Consultations	.06

Although consultations constitute the largest percentage of referred services, they account for a relatively insignificant service for each patient. Only six of one hundred patients cared for in a teaching facility by a Medical School doctor require their physician to formally consult with a colleague due to the complexity or obscurity of the illness.

From the data available on the teaching practices of general practitioners, it is evident that bed side teaching assumes a more dominant role than ambulatory care. Comparisons with the scope and incidence of services received per patient in private facilities are considered further in Chapter 5.

B. Internal Medicine

For the internal medicine bloc, the seventy-one doctors submitting claims for services rendered in their capacity as University staff doctors are considered for the given time period. Thirty-nine

physicians of this total conduct private practices in solo facilities. Only fifteen of the solos are located in private practice apart from the Medical School or a hospital. The remaining thirty-two internists practice privately as part of group practices.

Sixty percent of the physicians conduct all of their teaching practice at the Winnipeg General Hospital. The remainder have submitted claims from one or more of the other three teaching hospitals.

Table 4-4 shows the unreferred services and referred services per internist and per patient in teaching facilities.

Table 4-4

UNREFERRED SERVICES AND REFERRED SERVICES PER TEACHING
INTERNIST AND PER PATIENT

Number of Teaching Doctors	Patients per Doctor	Unreferred Services per Doctor	Unreferred Services per Patient	Referred Services per Doctor	Referred Services per Patient
71	33.6	88.9	2.65	3.76	.11

Hospital calls again comprise the major portion of unreferred services. Table 4-5 gives the percentage distribution of services for teaching doctors practicing the specialty of internal medicine.

Table 4-5

PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED
SERVICES FOR TEACHING INTERNISTS

	<u>Unreferred Services</u>	<u>Referred Services</u>
Hospital Calls	56.5	
Office Calls (subsequent)	22.4	
Office Calls (initial)	7.5	
History and Physical Exam	9.0	
Consultations		76.8
Other	<u>4.6</u>	<u>23.2</u>
Total	100.0	100.0

For the limited range of referred services considered, consultations again comprise the major portion. The incidence of consultations and the other unreferred services on each patient are illustrated in Table 4-6.

Table 4-6

AVERAGE PHYSICAL UNITS OF SERVICES RECEIVED PER PATIENT

Hospital Calls	1.50
Office Calls (subsequent)	.59
Office Calls (initial)	.20
History and Physical Exam	.24
Consultations	.09

Relative to the analysis of the teaching general practitioners, the specialists of internal medicine make fewer hospital calls per patient, (1.5 compared to 5.45) show a higher incidence of return visits (.59 to .41), but record only a slightly higher incidence of referred

consultations per patient (.09 to .06).

C. Obstetrics and Gynaecology

The twenty-nine doctors practicing under the obstetrics and gynaecology bloc as members of the Medical College staff, were considered for the given time period. Two-thirds of the claims were filed from the Winnipeg General Hospital with the remainder accounted for at the St. Boniface Hospital. Seventeen of the physicians in this bloc are members of private group practices.

Table 4-7 shows the relevant information on unreferred and referred services.

Table 4-7

UNREFERRED SERVICES AND REFERRED SERVICES PER
OBSTETRICIAN-GYNAECOLOGIST AND PER PATIENT

Number of Doctors	Patients per Doctor	Unreferred Services per doctor	Unreferred Services per Patient	Referred Services per Doctor	Referred Services per Patient
29	21.7	36.3	1.67	4.14	.19

For the items included in the patterns of practice, this bloc showed the following percentage distribution of services.

Table 4-8

PERCENTAGE DISTRIBUTION OF UNREFERRED AND REFERRED SERVICES
FOR TEACHING DOCTORS IN THE OBSTETRICS-GYNAECOLOGY BLOC

	<u>Unreferred Services</u>	<u>Referred Services</u>
Office Calls (subsequent)	32.4	
Hospital Calls	15.7	
Cytological Smears	12.6	
History and Physical Exam	11.3	
Office Calls (initial)	8.6	
Consultations	3.8	15.8
Anaesthetic (all types)		67.5
Other	<u>15.6</u>	<u>16.7</u>
Total	100.0	100.0

The absolute physical number of services received per patient is indicated in Table 4-9.

Table 4-9

AVERAGE PHYSICAL UNITS OF SERVICES RECEIVED PER PATIENT

Office Calls (subsequent)	.54
Hospital Calls	.26
Cytological Smears	.21
History and Physical Exam	.19
Office Calls (initial)	.14

Summary

The most significant conclusion to be made from the analysis of teaching doctors is the dominant role of hospital calls as an un-referred service for the general practice and internal medicine blocs. If the distribution of services is used as a gauge of the allocation of teaching time in a practical setting, the learning environment associated with hospitalized patients is a more important teaching device than the clinic setting for at least these two blocs of practice. This is especially true for the general practice teaching physicians where hospital calls accounted for 84.2% of all un-referred services rendered. Each hospitalized patient under the care of a University-employed general practitioner received an average of 5.45 hospital calls.

Doctors specializing in internal medicine generated 56.5% of their total un-referred services through hospital calls. Office visits and histories and physicals accounted for 38.9% of the total.

Due to the nature of the specialty and possibly since Obstetrics and Gynaecology have a separate out-patient facility at the Winnipeg General Hospital, hospital calls show lesser relative importance for this bloc. Hospital calls account for 15.7% of all un-referred services which amounts to approximately one hospital call for each four patients under the care of a Medical School obstetrician-gynaecologist. Nevertheless, as reference to Chapters 2 and 3 indicate, the hospital based physicians in this bloc make substantially more un-referred hospital calls compared to their private practice colleagues.

From the analysis to this point, it is reasonable to assume that the lack of adequate ambulatory facilities is a major factor contributing

to the high relative incidence of hospital calls for the teaching physicians studied.

Chapter 5

A COMPARATIVE ANALYSIS OF MEDICAL PRACTICE IN GROUP, SOLO AND, TEACHING FACILITIES

Productivity of physicians, the incidence of unreferred services, and the incidence of referred services are compared for physicians practicing in solo, group and teaching facilities. The data used in the tables was previously generated in Chapters 2, 3 and 4.

In order to make the comparisons possible, the following assumptions are necessary:

1. Physicians are assumed to spend approximately the same amount of time working in their private place of practice.

Average values for the doctors of a given setting are used. Consequently, inaccuracies as a result of doctors who are working fewer hours due to holidays, sickness, other commitments, et cetera, are minimized.

Some doctors, in all blocs of practice are employed by the University of Manitoba. The percentage of doctors falling in this category for each of the blocs and facilities considered, are given. Thus, results can be modified in light of this occurrence.

2. One assumes that the type and complexity of the malady treated is reasonably uniform between physicians practicing in different facilities. Physicians provide care for equally complex medical problems irrespective of the setting of practice.

3. The period of time chosen is typical of the results which would be apparent for a longer time period. Due to the large volume of claims processed in any given month, the results are reasonably indicative of any one year's analysis.
4. Productivity of physicians may be estimated by using a combination of the measures of volume of patients treated in the given time period, the unreferral services rendered per doctor and received per patient, and the absolute units of services rendered per physician.
5. The raw data used did not differentiate between patients who may have visited more than one doctor in the same group. Thus, the patients per doctor value is not entirely accurate since a patient may have been seeing several doctors in the same group. This is of little consequence to the productivity analysis since one is interested in the number of patient-doctor contacts irrespective of whether or not the patient visited or was referred to a colleague in the same group.
6. The incidence of a service in the given time period is used as a measure of the use made of that service. For example, from a high incidence of hospital calls per patient and/or per doctor, one concludes a high rate of hospitalization for the patients of those doctors practicing in the given facility.

From the point of view of saving scarce resources, a low rate of hospitalization is certainly a desirable occurrence. The success in terms of economies of the Kaiser plans in California may be attributed in large part as a result of its lower requirements for hospital beds and its lower per member cost of hospitalization while maintaining a high standard of care.

Lower admission rates are the primary source of Kaiser's relative economy in the hospital areas. The average Kaiser member (in northern California) spent only 69% as many days in the hospital as did the average Californian (on an age-adjusted basis), and since Kaiser's average length of stay exceeded the State's, Kaiser savings in hospital use was entirely the result of lower admission rates.¹

A. General Practice

For this bloc, comparisons are made between the practices of solo physicians, physicians in three different group practices and physicians fulfilling their duties at teaching hospitals as staff members of the University of Manitoba Medical School.

All figures used in the tables for the solo general practitioners represent the average patients and services of a random sample of fifty-three physicians. As noted in Chapter 3, only two of the fifty-three doctors submitted claims for services rendered in a teaching capacity during the time period. The three groups are those analyzed for the general practice bloc in Chapter 2. The data represents average values for the practice of the five general practitioners in the large multi-specialty group, the seven general practitioners of the medium multi-specialty group and the eight physicians of the small single specialty general practice group. None of the doctors in these groups

¹Excerpt from The Report of the National Advisory Commission on Health Manpower, Volume II, November 1967, p. 210.

submitted claims for services performed as teaching doctors during this time period. The results of the seventeen teaching physicians of the general practice bloc are those previously generated in Chapter 4.

(i) Productivity

In terms of the average number of patients seen per doctor, the general practice physicians of the small single specialty group are the most productive for the one month period considered. From Table 5-1, these doctors are providing services to ninety-six more patients than the general practitioners of the medium-sized multi-specialty group.

It is also apparent that the average solo physician, rather than the physician of the small single specialty group, is providing a greater number of unreferred services per patient. To consider this result in the light of productivity, Table 5-2 shows the number of unreferred services for the average physician practicing in various facilities. The absolute number of physician patient contacts is an additional indicator of the work achieved in a given time period. The four services listed represent the most common type of physician-patient contact for the data analyzed. Office calls, history and physical, and hospital calls constitute approximately 74.2%, 76.4% and 86.2% respectively, of all unreferred services for the small, medium and large groups. For the average solo general practitioner, these services account for 63.2% of the total unreferred services. For solo doctors, short laboratory tests occupy a substantial portion of total unreferred

services (17.9%). The average number of surgeries, of all types, is also included in Table 5-4 since this service probably represents the most time consuming item of a doctor's itinerary.

Table 5-1

AVERAGE UNREFERRED SERVICES AND REFERRED SERVICES PER
GENERAL PRACTITIONER AND PER PATIENT FOR PHYSICIANS IN
SOLO, GROUP AND TEACHING FACILITIES

Physicians	Patients per Doctor	Unreferred Services per Doctor	Unreferred Services per Patient	Referred Services per Doctor	Referred Services per Patient
Solo Practice	187	430	2.30	154	0.82
Small Single Specialty Group	413	678	1.65	796	1.93
Medium Multi- Specialty Group	317	523	1.65	557	1.76
Large Multi- Specialty Group	182	251	1.38	856	4.70
Teaching Physicians	43	276	6.50	4	-

Table 5-2

AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN IN VARIOUS FACILITIES

	<u>Solo</u>	<u>Small Single Specialty</u>	<u>Medium Multi- Specialty</u>	<u>Large Multi- Specialty</u>
Initial Office Calls	107	242	152	53
Subsequent Office Calls	90	113	136	98
History and Physicals	29	76	82	63
Hospital Calls	46	72	30	3
Surgeries	16	27	20	1

The five services listed in Table 5-2 indicate that the average general practice physician of the small single specialty group renders the highest absolute number of services for the time period. The discrepancy between the high value of unreferred services per physician for solo general practitioners and the results of Table 5-2, probably occur because of the high incidence of short laboratory tests as an unreferred service for the average solo physician. For the group practice doctors generally, this service is totally a referred service.

General practice physicians practicing privately in a single specialty setting have shown a high level of productivity. In contrast to the initial assumptions of this chapter, this may result from the sameness of maladies treated among general practitioners. If so, health personnel performing tasks in a general practice setting are fulfilling more specialized functions. With the apparent trend towards continuous comprehensive family care with

the general practitioner as the focal point of the system, it would be idle speculation to consider the general practice physician as one who performed only routine tasks. Nevertheless, over the years, the specialist has become a more prominent figure in his profession, and his status and special skills have been enhanced in the eyes of the public seeking health care. Perhaps this has resulted in the general practitioner caring for less complex illnesses. Upon initial diagnosis, the more difficult cases requiring specialized treatment are referred to specialists.

These observations are supported by the higher incidence of initial office calls as an unreferred service relative to the incidence of this service for doctors practicing the specialties of internal medicine and obstetrics. The analysis to follow indicates that general practice physicians practicing in each of the facilities considered, record more initial office visits compared to their colleagues in internal medicine and obstetrics. This service is especially prominent for the practitioners of the small single specialty group where 35.7% of unreferred services were initial office calls.

Using the adopted measure of productivity, the general practitioners of the large multi-specialty group saw fewer patients and rendered a lesser absolute number of unreferred services. This is in contrast to the results of the analysis of internists and obstetrician-gynaecologists of the large multi-specialty group who exhibited the highest levels of productivity in their respective blocs.

If one considers the total services, both unreferred and referred rendered by these physicians, then each patient is receiving a most intensive care (Tables 1-1 to 1-5). This is further substantiated by the higher incidence of subsequent office calls for the large multi-specialty general practitioners.

Although fewer patients are seen and fewer unreferred services are rendered, perhaps each patient is receiving a more thorough treatment from the general practitioners working in this facility. Is the low incidence of hospital calls recorded by the latter physicians a result of greater success in treating patients on an ambulatory basis relative to the success of other general practitioners considered or are they confining their practice to the less complex maladies due to the proximity of a wide range of highly specialized colleagues? If the former reason is correct, the extra costs involved in prescribing more ancillary care in the form of referred services is probably considerably less than the real and money costs of hospitalizing patients.

(ii) Incidence of Unreferred Services

Table 5-3 indicates the percentage distribution of unreferred services for the general practitioners considered in the given time period.

Table 5-3

PERCENTAGE DISTRIBUTION OF UNREFERRED SERVICES FOR GENERAL
PRACTITIONERS PRACTICING IN SOLO,
GROUP AND TEACHING FACILITIES

Unreferred Service	Solo	Small Single Specialty	Medium Multi- Specialty	Large Multi- Specialty	Teaching
Initial Office Calls	24.8	35.7	29.1	21.0	3.5
Subsequent Office Calls	21.0	16.7	26.0	39.1	6.4
History and Physical	6.7	11.2	15.6	25.1	3.5
Hospital Calls	10.7	10.6	5.7	1.0	84.2
Consultations	-	-	-	3.4	-
House Calls	4.9	1.7	5.0	1.3	-
Short Laboratory	17.9	-	-	-	-
Injections and Immunizations	-	7.0	7.5	-	-
Other	<u>14.0</u>	<u>17.1</u>	<u>11.1</u>	<u>9.1</u>	<u>2.4</u>
Total	100.0	100.0	100.0	100.0	100.0

Subsequent Visits

The medium multi-specialty and the large multi-specialty group physicians show the highest percentage values for subsequent visits, 29.1% and 39.1% respectively. As indicated in Table 5-4, this result does not necessarily mean that these physicians have the greatest number of patients making return visits. The incidence

of return visits per patient is fairly uniform for physicians practicing in all facilities except those of the small single specialty practice. For patients visiting all facilities, except the small practice, approximately one of every two patients is making a return call. For patients visiting the small single specialty practice, approximately one of every four patients is making a return visit.

Table 5-4

UNREFERRED SERVICES RECEIVED PER PATIENT FOR GENERAL
PRACTITIONERS PRACTICING IN VARIOUS FACILITIES

Services	Solo	Small Single Specialty	Medium Multi- Specialty	Large Multi- Specialty	Teaching
Initial Office Calls	.57	.54	.48	.29	.22
Subsequent Office Calls	.48	.27	.43	.54	.41
Hospital Calls	.25	.17	.09	.02	5.45
History & Physical	.16	.18	.26	.35	.23

Hospital Calls

For teaching physicians, hospital calls represent 84.2% of the total unREFERRED services rendered. From Table 5-4 each patient under the care of a teaching general practitioner receives an average of 5.45 calls.

If the incidence of hospital calls per patient is used as a measure of the use made of hospitalizing patients, the physicians of the single specialty group and the sample of solo physicians

would show the highest values. For the solo doctors, one of every four patients is receiving care in the form of a hospital call.

History and Physical, House Calls and Laboratory Services

The incidence of history and physicals increases with the increasing size of the practice. This is probably a result of the greater specialization of tasks which occurs in larger practices. Perhaps the general practitioners are handling the bulk of history and physicals with the specialists caring for the more specific cases.

For physicians of the general practice bloc, house calls represent a relatively insignificant unreferred service. Differences among physicians practicing in various facilities are slight.

The solo general practitioners are the only physicians sampled who submit claims for unreferred short laboratory services. For the group physicians, this service is generally referred.

(iii) Incidence of Referred Services

The referred services of laboratory tests and x-rays account for slightly over 90% of total referred services for the medium and large groups. The corresponding values for the small single specialty group and the sample of solo doctors is 85.6% and 77.5% respectively. The lower percentage recorded for the solo general practitioners is indicative of the fact that these doctors perform a large portion of short laboratory services as an unreferred service.

Table 5-1 indicated that the large multi-specialty group practitioners showed the highest number of referred services per doctor (856) and referred services per patient (4.70). For this large segment of referred services, Table 5-5 gives the values for the average units of referred services rendered per physician and received per patient for the various private delivery systems. Since referred services of laboratory and x-ray were not included on the claims of teaching doctors analyzed, only referrals of physicians in private facilities are considered.

Table 5-5

AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN AND RECEIVED PER PATIENT FOR GENERAL PRACTITIONERS*

Referred Service	Solo**	Small Single Specialty	Medium Multi- Specialty	Large Multi- Specialty
Short Laboratory	60 (.32)	315 (.76)	200 (.63)	332 (1.83)
Long Laboratory	33 (.18)	171 (.41)	83 (.26)	186 (1.02)
X-rays	60 (.32)	196 (.48)	19 (.06)	266 (1.46)

* Units of Services received per patient are shown in ().

** The values for all short laboratory services, referred and unreferred are 103 (.55).

The large multi-specialty group physicians show the highest values for the three referred services considered for both services rendered per physician and services received per patient. The values of 332 short laboratory services, 186 long laboratory

services and 266 x-rays prescribed on the average by the general practitioners of the large multi-specialty group are most apparent when compared to the one hundred short laboratory services, thirty-three long laboratory services and sixty x-rays prescribed by the solo general practitioners in the given time period. For the practitioners of the large group, the incidence of the three services per patient is consistently greater than twice that of the values for the next highest group, the small single specialty.

The high relative incidence of referred services indicated by the general practitioners (and internists in the subsequent analysis) of the large multi-specialty practice, may occur as a result of at least two reasons.

Firstly, a higher level of referred services may be synonymous with a high quality of care. This led to the hypothesis previously considered that the higher quality care led to a lower rate of hospitalization for the patients of these general practitioners.

Secondly, the availability of more equipment per employee in large groups as Dr. Boan observed in his Royal Commission study, leads to a greater utilization of equipment. Dr. Boan concluded that the higher incomes observed for group physicians generally were a result of higher medical productivity. For the isolated case at hand, this conclusion has not been substantiated. Since the volume of patients and prescription of unreferred services of the large multi-specialty practitioners is lower than the others considered, resulting higher incomes of the former could not be

attributed to the phenomenon of higher medical productivity. In this case, a higher income would be more a result of the high prescription of ancillary services. This explanation is not entirely applicable to the internists of the large multi-specialty group since both their level of medical productivity and their incidence of referred services are high.

B. Internal Medicine

For this bloc, comparisons are made between the practices of solo physicians, physicians practicing the specialty of internal medicine in three different group practices of varying size, and doctors of internal medicine fulfilling their duties at teaching hospitals as staff members of the University of Manitoba Medical School.

The values computed from the data and subsequently used in the following tables, represent average services and average numbers of patients for physicians practicing in the chosen settings. The analysis for the solo and group physicians represents only that portion of their work performed in the given time period at their private place of practice. For the teaching physicians, the data analyzed only represents that portion of their work performed at the teaching hospitals.

The twenty solo internists considered in this study represent the total number of physicians in this bloc of practice who submitted claims for this period. The three group practices are those previously considered in Chapter 2. Average values are computed for work performed by the physicians of internal medicine practicing in small, medium and large sized multi-specialty practices. The values derived for teaching

doctors are a result of the analysis of all seventy-one internists who submitted claims for the given period.

A large portion of the private practice physicians also submitted claims from teaching hospitals as Medical School staff members. Eighty percent of both solo doctors and doctors practicing in the large multi-specialty group are in this category. Thirty-three percent of the small and medium sized multi-specialty group physicians were also performing teaching duties.

(i) Productivity

Table 5-6 shows the relevant data for comparing the productivity of internists practicing in different facilities.

Table 5-6

AVERAGE UNREFERRED SERVICES AND REFERRED SERVICES
PER INTERNIST AND PER PATIENT FOR PHYSICIANS IN
SOLO, GROUP AND TEACHING FACILITIES

Physicians	Patients per Doctor	Unreferred Services per Doctor	Unreferred Services per Patient	Referred Services per Doctor	Referred Services per Patient
Solo	213	438	2.1	273	1.29
Small Multi-Specialty Group	212	330	1.6	447	2.10
Medium Multi-Specialty Group	133	232	1.7	319	2.40
Large Multi-Specialty Group	254	440	1.7	1,082	4.30
Teaching Physicians	34	89	2.7	-	-

In terms of the total number of patients seen, the physicians of the large multi-specialty group seem the most productive of the private practices. When considering the total number of unreferred services per doctor irrespective of the type of service rendered, the solo and large group physicians record similar values of 438 and 440 respectively. The unreferred services per patient value of approximately 1.7 for all the group physicians is less than the 2.1 value for solo doctors.

The absolute number of the more prominent unreferred services is shown in Table 5-7.

Table 5-7

AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN
IN VARIOUS FACILITIES

	Solo	Small Multi- Specialty	Medium Multi- Specialty	Large Multi- Specialty
Initial Office Calls	37	63	23	37
Subsequent Office Calls	94	74	80	120
History and Physicals	36	53	15	70
Hospital Calls	108	67	80	106
Consultations	26	4	24	25

With the exception of subsequent office calls and histories and physicals, the physician-patient contacts are reasonably similar. The higher number of services rendered for internists in large groups, as indicated in Table 5-7, contradicts the

relatively higher value of unreferred services per patient for solo internists stipulated in Table 5-6. This result probably occurs because of the relative importance of heart tracings as an unreferred service for solo internists (15.9%) whereas this is almost totally a referred service for the physicians practicing in the groups considered.

In contrast to the results of the general practice bloc, the internists of the large multi-specialty practice record the highest level of productivity. Of all practices considered, the large multi-specialty practice is large enough to use the optimum number of para-medical personnel per physician and to own medical equipment which is liable to be more fully utilized. This specialization, division of labor, and fuller use of time and resources is apt to account at least in part for the higher medical productivity of these physicians. This result contradicts the conclusion of Dr. Bailey's study of San Francisco internists cited in Chapter 2. He found that in terms of weighted patient contacts with a doctor per hour, there was no greater productivity with size of practice. The results generated in this study indicating that the internists of the largest group practice record the highest relative output both in terms of the total patient contacts and prescriptions of referred services, are in contrast to those of Dr. Bailey.

Apart from the resulting higher productivity of the largest practice, there is no apparent trend of increasing values for volume of patients and unreferred services rendered, for practices

of increasing size. From this observation, one might forward the hypothesis that the size of practice is less relevant than the abilities and nature of the individual physician, in accounting for higher levels of medical productivity. With the exception of referred services and the absolute level of histories and physicals, the solo internists and the large multi-specialty internists demonstrate the more similar patterns of practice. Perhaps this occurrence may be explained in part by the high portion of doctors in each of these categories who are also employed in a teaching capacity with the University of Manitoba Medical School.

(ii) Incidence of Unreferred Services

Tables 5-8 and 5-9 indicate the percentage distribution of unreferred services and the incidence of unreferred services received per patient for those patients seeking medical care from the doctors of internal medicine practicing in the various facilities.

Table 5-8

PERCENTAGE DISTRIBUTION OF UNREFERRED SERVICES FOR
SPECIALISTS OF INTERNAL MEDICINE PRACTICING IN
SOLO, GROUPS, AND TEACHING FACILITIES

Unreferred Service	Solo	Small Multi-Specialty	Medium Multi-Specialty	Large Multi-Specialty	Teaching
Initial Office Calls	8.4	19.0	9.8	8.3	7.5
Subsequent Office Calls	21.4	22.3	34.3	27.2	22.4
History and Physical	8.2	16.0	6.6	16.0	9.0
Hospital Calls	24.6	20.3	34.3	24.0	56.5
Consultations	5.9	1.2	10.3	5.6	-
House Calls	2.0	2.8	0.7	0.8	-
Heart Tracings	15.9	13.5	-	-	-
Short Laboratory Tests	5.6	-	-	-	-
Other	<u>8.0</u>	<u>4.9</u>	<u>4.0</u>	<u>18.1</u>	<u>4.6</u>
Total	100.0	100.0	100.0	100.0	100.0

Table 5-9

UNREFERRED SERVICES RECEIVED PER PATIENT FOR SPECIALISTS OF
INTERNAL MEDICINE PRACTICING IN VARIOUS FACILITIES

Services	Solo	Small Multi-Specialty	Medium Multi-Specialty	Large Multi-Specialty	Teaching
Initial Office Call	.17	.30	.17	.15	.20
Subsequent Office Calls	.44	.35	.60	.47	.59
History and Physical	.17	.25	.11	.28	.24
Hospital Calls	.51	.32	.60	.42	1.5

Subsequent Visits

For private practice, the small multi-specialty internists show the lowest incidence of return visits per patient. One of every three patients makes a subsequent visit to the specialists in this group. This compares with the highest incidence of subsequent visits recorded by the medium multi-specialty physicians whose patients average .60 return visits to these doctors.

Hospital Calls

It is evident that care rendered to in-patients is the most dominant method of teaching in a practical setting. For teaching physicians, hospital calls represent 56.5% of the total unreferred services rendered. Each patient under the care of a teaching specialist of internal medicine receives an average of 1.5 hospital calls.

For all facilities considered, the incidence of patients receiving hospital calls under the care of internists exceeds the comparable values for the practices of general practitioners. For doctors practicing in the private facilities, the patients receiving care from the medium-sized group and from the solo internists show the highest incidence of hospital calls.

Physicians practicing in solo and in small multi-specialty groups record values of 15.9% and 13.5% respectively for unreferred heart tracings. For the other physicians considered this service is almost entirely referred.

House calls again represent an insignificant portion of total services rendered.

Consultations account for a relatively higher portion of un-referred services for the physicians of the medium multi-specialty group (10.3%). Contrary to what might be expected, the physicians of the small multi-specialty setting have a lower percentage value for consultations (1.2%) than the physicians practicing in solo (5.9%). The former physicians used the consultation an average of four times each in the given time period, compared to an overall average of twenty-five consultations for physicians in all other practices considered.

(iii) Incidence of Referred Services

The referred services of laboratory tests and x-rays account for more than 76% of the total referred services for physicians practicing in all of the facilities considered.

Table 5-6 indicated that the large multi-specialty group internists showed the highest number of referred services per doctor (1,082) and referred services per patient (4.30). Solo internists average 273 referred services per doctor which amounts to 1.29 referred services per patient. These latter values represent the minimum referred services for the physicians and facilities considered. Table 5-10 gives the values for the average units of referred services rendered per physician and received per patient for this bloc of practice.

Generally, as the size of practice increases, both the absolute number of laboratory tests prescribed and the incidence of laboratory tests per patient increases.

Table 5-10

AVERAGE UNITS OF REFERRED SERVICES RENDERED PER PHYSICIAN
AND RECEIVED PER PATIENT FOR INTERNISTS*

Referred Service	Solo**	Small Multi-Specialty	Medium Multi-Specialty	Large Multi-Specialty
Short Laboratory	45 (.21)	153 (.73)	108 (.81)	406 (1.6)
Long Laboratory	97 (.46)	89 (.42)	75 (.56)	335 (1.3)
X-rays	86 (.41)	159 (.75)	59 (.44)	261 (1.0)

*Units of services received per patient are shown in ().

**The values for all short laboratory services, referred and unreferred are 69 (.32).

C. Obstetrics and Gynaecology

For the Obstetrics and Gynaecology bloc, comparisons are made between the practices of physicians in solo, group and teaching facilities. Again, the values used in the tables are averages for all physicians of the specific bloc of practice who conduct their private work in that setting.

The ten solo physicians considered in this study represent the total sample submitting claims during this period. All of these doctors also were employed as teaching doctors and submitted separate claims for work done in this capacity.

The four group practices are those previously considered in Chapter 2. All of the physicians practicing under this bloc in the large group performed teaching duties during this period. From 60% to 75% of the physicians in the other groups also were employed in this capacity and submitted claims for work done.

The values derived for teaching doctors are a result of the analysis of the twenty-nine doctors considered in Chapter 4.

Table 5-11

AVERAGE UNREFERRED SERVICES AND REFERRED SERVICES PER OBSTETRIC-GYNAECOLOGY SPECIALIST AND PER PATIENT IN SOLO, GROUP AND TEACHING FACILITIES

Physicians	Patients per Doctor	Unreferred Services per Doctor	Unreferred Services per Patient	Referred Services per Doctor	Referred Services per Patient
Solo	183	343	1.9	189	1.03
Small Single Specialty	203	448	2.2	104	.50
Small Multi-Specialty	152	214	1.4	411	2.70
Medium Multi-Specialty	155	242	1.6	330	2.10
Large Multi-Specialty	210	338	1.6	250	1.20
Teaching	22	36	1.7	-	-

(i) Productivity

Table 5-11 shows the volume of patients and unreferred services per doctor and per patient relevant to the measures of productivity used in this study.

In terms of the volume of patients treated per physician, the specialists practicing in the large multi-specialty group show the highest value for this given time period (210). This compares with

the next highest value of (203) treated by each of the physicians practicing in the small single specialty group. In terms of the average unreferred services per doctor and per patient, the doctors of the small single specialty practice show the highest value of

Table 5-12

AVERAGE UNITS OF SERVICES RENDERED PER PHYSICIAN IN
VARIOUS FACILITIES FOR THE OBSTETRIC-GYNAECOLOGY BLOC

Services	Solo	Small Single Specialty	Small Multi- Specialty	Medium Multi- Specialty	Large Multi- Specialty
Initial Office Calls	37	22	43	33	65
Subsequent Office Calls	29	25	32	18	19
History and Physical	63	97	32	59	75
Cytological Smears	82	94	47	65	117
Consultations	21	13	24	19	9

448 services followed by the solo doctors (343) and the large multi-specialty doctors (338). When considering the percentage distribution of unreferred services among physicians in various facilities, the unreferred services valued for the solo and single specialty physicians is perhaps inflated. For the latter physicians, short laboratory services occupy a substantial portion of total unreferred services. From Table 5-13, these percentages are 19.1% for solos and 32.1% for small single specialty obstetrician-gynaecologists. Even though laboratory services may be adding the same increments to total health care as other services, they are not indicative of doctor patient contacts, and are not considered important for productivity analyses.

Consequently, the initial result previously considered in terms of the volume of patients cared for, is verified in terms of the average units of services rendered portrayed in Table 5-12. Taking due account of the higher relative value of cytological smears recorded for the physicians of the large group, these physicians seem slightly more productive than the average physician practicing in the small single specialty group. One cannot proceed beyond this observation without further consideration of the difficulty of cases handled between physicians and the relative average time periods necessary to carry out the given services.

(ii) Incidence of Unreferred Services

Tables 5-13 and 5-14 show the relevant information for consideration of the incidence of unreferred services.

Subsequent Visits

Using the percentage distribution values and the value of unreferred services received per patient, the incidence of return calls to specialists in Obstetrics and Gynaecology is low generally for all private practice physicians, compared to the similar values computed for general practitioners and specialists of internal medicine.

Since teaching physicians in this bloc provide the major portion of care in a clinic setting rather than hospital calls, values of this facility are more comparable to the values

generated for the private practice physicians. Thus, one of every two patients attending the out-patient Obstetrics Clinic for the physicians studied, makes a subsequent visit. This compares with one of every five patients making subsequent visits to doctors in the small multi-specialty practice which represents the private facility showing the highest value for this service. Conclusions drawn from this observation are difficult to make due to the differing socio-economic status of the patients visiting private practice physicians and those patients visiting out-patient department clinics.

Table 5-13

PERCENTAGE DISTRIBUTION OF UNREFERRED SERVICES FOR
SPECIALISTS OF OBSTETRIC-GYNAECOLOGY PRACTICING IN
SOLO, GROUPS AND TEACHING FACILITIES

Unreferred Services	Solo	Small Single Specialty	Small Multi- Specialty	Medium Multi- Specialty	Large Multi- Specialty	Teaching
Initial Office Calls	10.8	5.0	19.9	13.7	19.2	8.6
Subsequent Office Calls	8.4	5.6	15.1	7.6	5.6	32.4
History and Physical	18.4	21.5	15.1	24.4	22.3	11.3
Cytological Smears	24.0	20.9	22.1	26.9	34.9	12.6
Consultations	6.2	2.8	11.1	7.9	2.7	3.8
Short Laboratory Tests	19.1	32.1	-	-	-	-
Other Total	<u>13.1</u> 100.0	<u>12.1</u> 100.0	<u>16.7</u> 100.0	<u>19.5</u> 100.0	<u>15.3</u> 100.0	<u>31.3</u> 100.0

With the exception of the incidence of cytological smears, the results for the other services rendered are fairly uniform. The physicians of the large multi-specialty practice make most use of this preventive device of medical care. The cytological smear test is least used by the teaching physicians.

Table 5-14

UNREFERRED SERVICES RECEIVED PER PATIENT FOR SPECIALISTS
OF OBSTETRIC-GYNAECOLOGY PRACTICING IN VARIOUS FACILITIES

Unreferred Services	Solo	Small Single Specialty	Small Multi-Specialty	Medium Multi-Specialty	Large Multi-Specialty	Teaching
Initial Office Calls	.20	.11	.28	.22	.31	.14
Subsequent Office Calls	.16	.12	.21	.12	.09	.54
History and Physical	.34	.47	.21	.38	.36	.19
Cytological Smears	.45	.46	.31	.42	.56	.21

(iii) Incidence of Referred Services

From Table 5-11, it is evident that the physicians of the small multi-specialty practice record the highest volume of referred services per doctor in the given time period (411), and show the highest incidence of referred services per patient (2.7). This result is contrary to that observed for the general practice and internal medicine analysis where the large multi-specialty physicians maintained the highest values for referred services.

The average units of referred services rendered per physician and received per patient are given in Table 5-15. As previously observed for the other blocs of practice, the solo physicians register the minimum values.

Table 5-15

AVERAGE UNITS OF REFERRED SERVICES RENDERED PER
PHYSICIAN AND RECEIVED PER PATIENT FOR
SPECIALISTS OF OBSTETRIC-GYNAECOLOGY*

Referred Service	Solo**	Small Single Specialty	Small Multi-Specialty	Medium Multi-Specialty	Large Multi-Specialty
Short Laboratory	34 (.18)	6 (.03)	220 (1.45)	136 (.88)	142 (.68)
Long Laboratory	24 (.13)	12 (.06)	38 (.25)	38 (.25)	16 (.07)
X-rays	13 (.07)	11 (.06)	43 (.28)	30 (.19)	13 (.06)

*Units of services received per patient are shown in ().

**The values for all short laboratory services, referred and unreferred for solo 99 (.54); for small single specialty 150 (.74).

Summary

The following significant observations are apparent as a result of this comparative analysis:

1. Physicians of the large-scale practice show the highest relative level of productivity for the internal medicine and obstetrics-gynaecology blocs. For the general practice bloc, physicians practicing in the small single specialty practice recorded the highest relative level of patients, unreferred services and

patient-doctor contacts.

2. There is no apparent trend of increasing productivity for increasing size of practice. Values for both the solo physicians and single specialty group physicians were close to the large group figures for the productivity analysis.
3. Internists and general practitioners of the large multi-specialty practice prescribe more laboratory services and x-rays relative to their colleagues in solo practice and in other groups. The small single specialty practice physicians recorded the highest incidence of referred services for the obstetrics-gynaecology bloc.
4. Teaching physicians, practicing general practice and internal medicine, show a high rate of hospital calls relative to the incidence of this service from private practice physicians.

Chapter 6

RECOMMENDATIONS FOR THE PROVISION OF AMBULATORY CARE FACILITIES IN WINNIPEG

Plans are being formulated for the construction of an ambulatory care facility in Winnipeg.¹ It is designed to fulfil the needs of those patients who can be effectively treated in an ambulant manner. In addition to the objective of servicing the community, the facility will provide an additional tool for teaching the science of medicine and for pursuing medical research. The new ambulatory facility will merge the present out-patient department, emergency department, and doctors' private offices into a single inter-related operation.

In light of this development and as a supplement to the analysis which preceded this chapter, visits were made to other western Canadian cities--Saskatoon, Edmonton and, Vancouver--in an attempt to explore the respective variants for the delivery of ambulatory health care and to provide greater insights into the possible economies accruing from these variants.

The impetus for the trend toward ambulatory care as opposed to hospital in-patient care is a result of several factors. Physicians

¹Report of the Task Force Committee on Emergency and Ambulatory Care for Winnipeg General Hospital and St. Boniface General Hospital, E. G. Brownell, M. D., Chairman. November 21, 1969.

feel that a large segment of the patients presently hospitalized could be cared for on an ambulatory basis given adequate treatment facilities. The proportion of patients who could conceivably be treated in this manner ranges from 20% to 30% or more of patients presently hospitalized.² Government authorities responsible for the provision and maintenance of health care are also interested in ambulatory care. They do not wish to provide the patient with an intensity of care greater than that warranted by the malady. Thus, ambulatory care not only represents an alternative to in-patient care in some instances but the cost efficiencies that arise due to this patient transfer could lead to significant health care expenditure savings. This potential area of cost saving was appreciated and emphasized in the recent Federal Task Force Reports.³

When a patient is admitted to a hospital for diagnosis or treatment the cost is high. When he visits other health facilities for the same things and then goes home after a few hours, a day or at most a night, the cost is a great deal less. Thus, very substantial savings can be achieved by organizing health resources to stress both the adequacy and economics of ambulatory care.

The centres visited--University Hospital, Saskatoon; University of Alberta Hospital, Edmonton; and, the Vancouver General Hospital, Vancouver--are generally in the infant stages of developing ambulatory

²The 30% figure was suggested by Dr. Brownell and the 20% value is that arrived at by the once-a-year survey of patients in the University of Alberta Hospital.

³Task Force Reports on the Cost of Health Services in Canada (Ottawa: Queen's Printer, 1966), p. 67, vol. 1.

care programs. Consequently, only rough estimates of the possible savings which may accrue as a result of treating some patients on an ambulatory basis as opposed to hospitalization are available.

The main objective in writing this chapter is to assess the feasibility of incorporating desirable features of other ambulatory facilities into the plans for the Winnipeg facility. The approach is primarily economic with the first consideration being the optimum use of scarce resources. Inevitably, final decisions must also be based upon medical and teaching considerations.

Hostel Facilities

One of the problems attendant with the establishment of an ambulatory care centre is accommodating those patients receiving ambulatory treatment. One alternative to in-patient care is the provision of a hostel to facilitate the accommodation requirements of visiting patients. A hostel is a facility designed to accommodate patients who require treatment but do not require a hospital bed. It is recommended that provision of this type of facility be given serious consideration.

This type of accommodation could be made available on a pilot program basis immediately without waiting for the completion of plans for the entire ambulatory complex. A pilot hostel program was initiated at the Saskatoon University Hospital using the vacated facilities of the former nurses' residence. A similar system has been considered at the University of Alberta Hospital. The objective of the pilot program is to assess the usefulness of the service and to measure the possible savings which accrue.

A similar program could be established in Winnipeg. The physical structure need not be elaborate and the labor requirements are minimal. In Saskatoon, a registered nurse supervised the operation eight hours daily where the capacity was twenty patients. Three hostel unit clerks, with no previous training, were on duty for eight-hour periods during each day.

There are a number of advantages that could accrue through initiating a hostel program immediately in lieu of deferring action until the completion of the overall ambulatory care plans. Firstly, if present vacant facilities are available, and suitably located, a pilot program could be embarked upon with a minimum expense incurred. Secondly, over a period of time, account could be taken of all operating costs incurred, the utilization of the facility, the types of patients accommodated and the estimated savings of the endeavor. Thirdly, one could observe physicians' use of the hostel. Physician co-operation is a necessary requisite to ensure the success of any health care program. There is little justification for designing more elaborate hostel units if a small scale pilot project proved unpopular with physicians.

Perhaps the most important outcome of such a project, is the assessment of the types of patients which can be accommodated in a hostel unit and a consideration of the alternatives available for treating these patients. With our present knowledge of the incidence of various diseases in Manitoba, plans for the size of future hostel units could be formulated with greater accuracy. If a pilot program indicates an appreciable saving in acute care hospital beds, the project should prove well worth the resources expended.

Although positive net benefits of a pilot project could justify operating the hostel on a full-time basis given the government health insurance program, concomitant problems could arise simultaneously. Would the stay in the hostel facility be fully insured, partially insured or not insured? If hostel costs to the patient were not to be included in the provincial health care program, the hostel could cease to be a legitimate alternative to in-patient treatment. Why should a patient accept ambulatory treatment at his own expense if he could be admitted to an active treatment facility where all expenses would be met? At least one other centre contemplating plans for the provision of hostel services has delayed action indefinitely as a result of the lack of suitable solutions to the "who pays" problem.

On the basis of economic reasoning it would appear that government authorities are justified in considering the hostel stay as an insured service. This statement is based on the following fundamental argument. Many patients currently receiving daily services but not requiring a hospital bed are presently being admitted as in-patients. As such, they probably are receiving an intensity of care greater than that justified by the severity of their illness simply because of the lack of suitable alternative facilities. The hostel would be one viable alternative to this patient misallocation since it would permit a realization of this patient cost saving.

There are, however, instances in which health care costs could conceivably rise. Rural patients may be visiting the city presently to receive similar treatments from physicians in private practice. Should the government health insurance agency pay for their stays in

privately-operated hotels? Is one justified in paying for one service and not for another, differentiating solely on the basis of hospital treatment as opposed to private practice treatment? The ultimate consequences of this problem could be exacerbated through hostel facility misuse by physicians who will be conducting their private practices from the new ambulatory facility. Although this consideration does loom as a possibility, in all probability, the advantages to accrue as a result of the establishment of an ambulatory centre will probably far outweigh the possible abuses that might arise as a result of preferential admission into the hostel facility. In other words the hostel is far more likely to be viewed as an alternative to active treatment than as an accommodation to private practice treatment.

In summary, issues such as the "who pays" problem and criteria for hostel admission must be satisfied as well as the estimation of the cost advantages to accrue through the use of this type of facility. However, the possible savings that could be realized through the use of a hostel do look promising.

Multi-test Facilities

Some health centres have adopted multi-test laboratories to supplement both in-patient and out-patient services.⁴ The objective in using such facilities is to save valuable time and money by using

⁴Morris F. Collen, M. D., "The Multitest Laboratory in Health Care of the Future", Hospitals, (May 1, 1967).

automation and computer techniques for administering various tests and analyzing the results. The examination procedure is organized on industrial engineering principles to ensure an operation of maximum efficiency. The following quote summarizes the aims of a multi-test program.⁵

More information, more accurately, on more people, in less time and at less cost--these are the goals of the automated multi-test laboratories.

In Winnipeg, one could consider the implementation of a program to improve the efficiency of the initial processing of both in-patients and out-patients. The results of a feasibility study, in Saskatoon, are applicable to such a consideration. The following benefits of the multi-test centre were predicted from the study.⁶

- (a) Centralized, efficient and uniform testing procedures will replace the present random patient routing through the various diagnostic departments scattered throughout a hospital.
- (b) All test results will be available the same day on a concise, standardized report.

⁵U. S. Department of Health, Education, and Welfare., "From Head to Toe", Public Health Service Publication No. 1808, 1968.

⁶Multiple Test Administration Centre, Report on Feasibility Study Being Conducted by Hospital Systems Study Group, July 31, 1970.

(c) There is an estimated reduction in the patient stay by one or possibly two days. Rapid results, available from the diagnostic admission tests, will enable the medical team to identify appropriate treatment on the day following admission.

(d) Cost saving may result as a consequence of both reduced paper work and effort in the ward area and in the service departments.

Although costs may rise in the short run due to the expense of implementing the program, its justification can be based upon the better use of existing resources and facilities through treatment of a greater patient load. There is also the possibility that the need for additional acute beds will be minimized due to reduced length of stay.

Implementation of a multi-test program educes several questions related to the sources of economy inherent in the system. Economies are realized from a high utilization of the service, but should each patient necessarily be given all the tests? Tests for everyone, irrespective of their need, will surely add to the costs of future health care. Apart from the benefits of higher quality care for the populace, the concept of using the multi-test facilities for population screening surely increases the public costs of operating the system.

In addition to this consideration, patient-doctor contact is still considered a necessity in providing adequate medical care. Will it be necessary for the physician to re-examine the patient on many points, re-asking questions where a yes-no computer facilitating answer from the patient is inadequate? Will the high rate of referred services presently prescribed by group general practitioners and internists be reduced?

In light of the proposed benefits of a reduced length of hospital stay and the resulting minimized need for acute beds, there is an additional consideration. The possibility exists that the increased volume of patients using the multi-test facilities are flowing mainly from private practices rather than from hospitals. Private practice physicians send their patients for initial diagnosis to the publicly-operated multi-test centre. More patients use the facilities which aids in the realization of the large volume economies of a multi-test centre. However, in this latter instance the demand for acute care hospital beds is maintained. The possible advantages are those of possible economies of scale in diagnostic testing and in quality of care improvements that will likely arise.

Day Care Hospital

The Day Care Hospital is an ambulatory facility which should be given serious consideration as a more suitable alternative to active treatment for a certain portion of patients. This facility is designed to accommodate those patients where treatment and/or surgery and recovery require twenty-four hours or less. Traditionally, this term has been used to describe psychiatric facilities where patients come in daily or at night to receive therapeutic treatment. Day care hospital now covers a much wider scope of operation where all specialties can make use of this facility.

Savings result since cases presently requiring treatment of twenty-four hours or less are admitted to acute care hospitals where a length of stay of two or three days is common. The day care hospital demands one day admission and discharge.

Day care surgical services have been provided as a British Columbia Hospital Insurance benefit since early 1968. Direct payments are made to hospitals for patients who require operating room or other specialized treatment facilities and who are discharged within twenty-four hours. A report prepared to analyze the experience of the first year of operation of the program shows the type of procedures that are being performed and indicates the potential use of day care surgery. Of a total of 13,450 procedures carried out on a day care surgery basis, Cystoscopies, Dilatation and Curettage, and Shock Therapy constituted nearly 40% of the total volume.⁷

It is possible that a day care hospital may not achieve the predicted objective of preventing the misutilization of active treatment hospitals. Certain controls may be necessary to effect the desired use of the day care facility. Firstly, without proper controls on use, physicians may begin to place patients in the day hospital to undergo previously unhospitalized treatments. Hospitalization for some present routine procedures or for observation may result. Consequently, the same flow of patients to acute care hospitals is maintained with a reduced flow of patients to private practice facilities. Secondly, the day care hospital should be provided with only that level of personnel and equipment sufficient to treat those patient maladies indicative of day care treatment. Then, economies due to the operation of a facility

⁷D. G. Adams, M. D., and D. S. Thomson, B. A., Report on Day Care Surgery, 1968 British Columbia. British Columbia Hospital Insurance Service, Victoria, B. C., p. 4.

providing a lesser intensity of treatment may be realized. If too much acute care equipment and/or nursing care is provided in the day hospital, the facility becomes another active treatment hospital.

In summary, the hostel, multi-test laboratories and the day care hospital represent possible savings in the future delivery of health care. Nevertheless, it is apparent that the individual physician has the most influence over the cost of medical care. It is he who determines how much and what kind of services each patient receives. Therefore, it is mandatory that those contemplating such developments survey the physicians and solicit their support for the proposed programs. If their patronage can be gained the success of these programs can be appreciable. The success of the Kaiser Health Plans in the United States, and in the Community Clinics in Canada, bear witness to this fact.

Chapter 7

CONCLUSIONS

The advantages of ambulatory care treatment, both in private practice and hospital care facilities rest upon productivity, cost efficiency, and physician convenience arguments. Chapters 2 through 5 examined the productivity differentials existing in the respective treatment facilities. Chapter 6 suggested possible cost efficiencies to be gained through the provision of ambulatory care centres, hostel facilities, multi-test laboratories and day care hospitals. It is the intent of this chapter to collate the conclusions of the preceding analyses in a manner that will facilitate an objective analysis of the new ambulatory care facility in Winnipeg.

Productivity of Physicians

Is the medical productivity of doctors enhanced when their work is performed in groups, in close association with their colleagues? Although the physicians practicing in the largest multi-specialty group were characterized by the highest average level of productivity for two of the three blocs of practice, it is not possible to conclude from this study that all group physicians show higher levels of output relative to their non-group colleagues.

In the sample of practices examined in the study, there was no apparent trend of increasing productivity with increasing size of

practice. The single specialty general practitioners showed outputs substantially higher than their associates practicing in other settings. Internists of the large multi-specialty group showed a level of productivity only slightly higher than solo internists. For physicians practicing the specialty of obstetrics-gynaecology, the large practice physicians proved only marginally more productive than the single specialty physicians. Thus, of the three specialties examined (general practice, internal medicine, and obstetrics-gynaecology) the small single specialty results for both the general practice and obstetrics-gynaecology blocs--the two blocs where a single specialty was considered--were also encouraging in terms of medical productivity.

From the results of these productivity considerations, a system of ambulatory care is possible which reaps the benefits of the two most productive settings--the large multi-specialty group and the single specialty practice. By definition, the ambulatory centre is designed to handle a wide spectrum of maladies and a large volume of patients. It is in effect a large multi-specialty practice. However, by organizing the overall system in terms of specialties it is possible to simulate the single specialty private practices and to realize the efficiencies which accrue from this type of organization. Thus, this setting can be very conducive to achieving optimum levels of productivity.

Referred Services

The results of this study, indicated that differences existed in the type and quantity of services prescribed among physicians practicing in various settings. The most striking anomaly was the high relative rate of prescription of referred services (especially laboratory tests and x-rays) rendered by general practitioners and internists of the largest group.

The question arises as to the improvement in the quality of care and/or index of health of the population occurring as a result of this type of practice. In Chapter 2 the difficulties inherent in objectively measuring differences in quality were considered briefly. The establishment of a set of norms in the delivery of medical care is a task for medical associations and is surely beyond the scope of this study.

At present, concern with differences in the incidence of referred services is considered only in light of its relation to the costs of providing medical care. Generally, the costs of care rise concomitantly with higher intensities of care.

Although placing direct controls over the levels of care is obviously an unacceptable solution, control over rising costs must be a concern of any health care delivery system. Since consumers have little direct control over either the prices charged or the intensity of care, administrators must bear the responsibility of ensuring the most cost-efficient system. It is evident that economy in the provision of medical care does not result automatically from organizing physicians in groups. Consequently, to promote the concept that physicians must be

made more responsible for health care costs, the following recommendations are forwarded.

Firstly, economy in the provision of care should be a specific objective, in addition to those of service, teaching and research, for the delivery of health care from the proposed ambulatory facility. Secondly, the objective should be supplemented by the employment of a manager competent in the techniques of cost control and budgeting. The anticipated savings resulting from the use of management science and computer techniques employed by the community clinics in Saskatchewan, are indicative of the benefits of this additional objective.¹

Teaching and Ambulatory Care

In the comparative analysis of solo, group and teaching physicians, it became apparent that general practitioners and internists employed by the University Medical School allot a high relative portion of their time to hospital calls. Whereas private practice general practitioners showed an average incidence of one hospital call for every

¹This conclusion is based on discussions with Mr. J. B. Brandejs, Management Information Systems Project Director for the Saskatchewan Community Clinics. The project is designed to improve the planning, control and efficiency of six sub-systems: operations; personnel; inventory; capital equipment; finance and accounting; information processing and communications.

ten patients, teaching physicians recorded an average of 5.5 hospital calls per patient. For internists, the incidence of hospital calls per patient were 1.5 and .5 for teaching physicians and private practice physicians respectively.

The high rate recorded for teaching physicians is undoubtedly a result of at least two factors. Firstly, the teaching of medical students has placed its main emphasis on in-patient care. Secondly, suitable facilities for adequate out-patient care comparable to that possible in private settings have not previously existed.

Although the pros and cons of placing greater emphasis on teaching in an ambulatory setting is left to medical authorities, several conclusions and recommendations can be forwarded as a result of the analysis and investigation emanating from this research.

1. Teaching physicians, general practitioners and internists constitute a major element in the demand for hospital beds.

2. The provision of an ambulatory care centre could be used as a vehicle for relieving many of the present demand pressures on active treatment hospitals. At present, a significant proportion of patients are receiving in-patient care who could be just as effectively treated in an ambulatory way. Estimates from the Economic Council of Canada suggest the cost of ambulatory patient care treatment can be as low as 25% of the costs of providing the same treatment on an in-patient basis.

3. The advantages of treating patients in an ambulatory care facility setting are considerable. The medical student can be effectively instructed in a large number of specialty areas since the proposed

ambulatory centre would house the complete spectrum of specialties. The advantages of this close proximity of treatment specialties are obvious. It is generally conceded, however, that in-patient care instruction will remain an integral part of the training program since the type and severity of treatment case will continue to be significantly different than that which can be accommodated in an ambulatory care centre. However, the advantages of each facility in the overall teaching curricula can be realized if each facility is available.

4. In light of these observations it would seem that the proposed ambulatory care centre can be justified on two main grounds. First, significant cost efficiencies can be realized as a result of patient transfers to the less expensive ambulatory setting, through cost advantages accruing to a centralization of specialty services and as a result of realizing productivity gains of group practice. In addition, the advantages of such a centre in a medical student-teaching program cannot be over-emphasized. The student not only experiences the treatment of a wide variety of cases within a single specialty but also is proximate to a number of other specialty treatments. This type of training is particularly important to the student since this is the setting that he will probably graduate into.

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