

THE UNIVERSITY OF MANITOBA

AN ANALYSIS OF PATIENTS DISCHARGED FROM THE PUBLIC WARDS  
OF THE WINNIPEG GENERAL HOSPITAL, NOVEMBER, 1956, WITH  
RESPECT TO MULTIPLE ADMISSIONS AND THE FACTORS WHICH  
ACCOMPANY THEM.

Being the Report of a Research Project  
Submitted in Partial Fulfillment of the  
Requirements of the Degree of Master of  
Social Work

by

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## CHAPTER I

### INTRODUCTION

Observation has shown "that a major share of hospital admissions are referable to the repeaters."<sup>1</sup> Because it has been found that repeaters contribute so heavily to the hospital population, it was felt that this was an aspect of public ward care in Winnipeg which would repay further study.

The mounting costs of hospital treatment have concerned the patients and the medical profession, as well as private and public agencies providing hospital care. The presence of a group of patients requiring repeated care could seriously affect any plan. It was seen that a group such as this was a source of recurring expenditure and, therefore, any study which could clarify this problem would help to reduce the cost by better planning.

As a result of interest in planning for hospital service, a survey of public ward patients was carried out on the public wards of the Winnipeg General Hospital during November, 1956. Patients discharged during the month were

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1. M. I. Roemer, and G. W. Myers, "Multiple Admissions to Hospital," Canadian Journal of Public Health 47:481, November, 1956.

interviewed by the use of a prepared schedule.<sup>1</sup> The schedule was designed to obtain a fairly broad socio-economic picture of each patient.

The group of patients using the public wards depended upon the admitting procedures of the hospital. The patient's eligibility to use public ward facilities had already been established by the Admitting or Accounting Offices. To be eligible, a patient had to be classified as medically indigent. This meant that he was unable to meet the cost of medical treatment and ability to meet the hospital bill was questionable. In return for services, the patient agreed to make himself available to the medical staff for teaching purposes. These were the patients eligible to be on the public wards of the hospital.

The aim of this project was to study the patients in the public wards of the hospital in the light of multiple admissions. The characteristics of the public ward patients were grouped for convenience into several areas: social, economic, and medical services. Within these areas, the patients were studied to learn if frequency of admission could be related to any of the chosen items, for example, whether multiple admissions occurred more often with certain ages.

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1. See Appendix A for sample schedule.

Patients were generally co-operative in responding to the schedule but certain areas provoked more resistance than others. Financial matters of a personal nature, particularly savings, were found to create anxiety during the interview. The use of skilled interviewers helped reduce anxiety and suspicion and thus, more reliable and valid responses were obtained.

The survey resulted in 371 completed schedules. This number did not include newborn infants or deaths. The findings then have been based on this group of 371 completed schedules.

There were some specific limitations in the study of multiple admissions. In an attempt to discover the characteristics of multiple admissions, it was necessary to choose a time period. Question (21) was worded in such a way as to demand the patient's memory recall over a five year period. No attempt was made to verify the accuracy of the patient's memory response. Former admissions to the Winnipeg General Hospital were obtained by referral to hospital records. This procedure did not account for admissions to other hospitals during the five year period, and in effect, the minimum number of admissions was obtained for this group of patients. The multiple or repeated admissions frequently referred to, did not

necessarily take place in a public ward and may have occurred in any number of different hospitals.

The total group of patients discharged during the month of the survey will be grouped according to the number of admissions to hospital. This will be the basic method of analyzing the results. The characteristics of the patients, previously referred to, will then be observed for each multiple admission group. It was felt that a frequency distribution such as this would lend itself to the observation of related variables.

In Chapter II, a brief survey of the problem of repeated admissions will be attempted. Several recent studies will be reviewed in an attempt to indicate the importance which this subject has assumed in the past few years.

Chapter III will describe the exact method which is used in the analysis of the schedule material. Some of the limitations encountered during the analysis will also be elaborated. In addition, the questions to be answered by the study have been outlined.

The analysis of the material on multiple admissions has been confined to Chapter IV. The questions posed in

Chapter III are considered and the results of the study presented in the form of frequency and per cent distribution tables.

Chapter V summarizes the findings of the study related to multiple or repeated admissions. Also included in this chapter are several suggestions for future study.



## CHAPTER II

### REVIEW OF SOME STUDIES

In a study by Ferguson and MacPhail,<sup>1</sup> the problem of mounting hospital costs with recurrent illness has been recognized. It was believed that expenditures could be substantially reduced by a better understanding of the social and environmental factors of patients under treatment. The aim of their study was to provide material for intelligent evaluation of the problem so that effective use of hospital resources might result.

The material which served as the basis of their study was actually obtained from two separate studies, both taking place in Scotland. The first study was that of two Scottish counties with a combined population of half a million. This study included both male and female patients. The second study was the major one, and took place in "medical units in the west of Scotland - two in teaching units in city hospitals, two in key provincial hospitals."<sup>2</sup> In the latter study, 705 males were interviewed following treatment and discharge. This took

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1 T. Ferguson, and A. N. MacPhail, Hospital and Community. London: Oxford University Press, 1954.

2 Ibid., p. v.

place between 1950-1. Patients were interviewed three months and again two years after discharge so that the total study took place between 1950 and 1953.

The patients using hospital facilities were considered to be of two types. The first group of patients were those with incurable and often advanced illnesses which could be expected to recur from time to time. Hospital care for these patients was often on an emergency basis and gained precedence over the second type. The second type of patient was one with a curable illness. Unlike the first type, demand for further hospital care for the same illness was not considered significant.

Attempts were made to discover the factors leading to health breakdown and the need for repeated hospital care. "Economic pressure, faulty environmental conditions - especially bad housing - and, particularly between the ages of 45 and 54, factors associated with work were all found to have played a part in causing breakdown; and often the interplay of such factors with illness created a vicious circle."<sup>1</sup>

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<sup>1</sup> Ibid., p. 131.

Some of the factors responsible for health breakdown and return to hospital were considered to be preventable in about 25 per cent of the cases. This figure included 10 per cent of the cases where return to hospital was based on clinically preventable factors and 14.6 per cent of the cases where preventable social and environmental factors existed.<sup>1</sup>

Although the authors recognized the existence of preventable factors in recurrent illness they were cautious in assuming complete co-operation of the patients. "Some of this recurrent invalidity could be prevented, given the co-operation of the patient; but it has been shown that in about one-third of the cases the men were unable, or unwilling, to take the action that would have rendered less likely the probability of relapse."<sup>2</sup>

The rate of relapse was established by studying hospital care received, both in-door and out-door, during the five years immediately preceding the initial interview of the patient. Of the patients studied, prospect for relapse existed in 40 per cent of the cases treated.<sup>3</sup> One patient in every three studied had been in hospital at least once during the previous five years.<sup>4</sup> Thus multiple

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1 Ibid., pp. 125-26.

3 Ibid., p. 126.

2 Ibid., p. 140.

4 Ibid.

admissions were found to create a considerable demand upon hospital facilities.

The men found to contribute most heavily to multiple hospital admissions were those in less fortunate social and environmental circumstances, notably unskilled laborers from poor homes.<sup>1</sup> Frequency of admission was also governed by the patient's illness. For example, patients suffering from alimentary disease were more common among the repeaters than those with a respiratory disease.<sup>2</sup>

Age of the men studied was found to be significant. Over the age of forty-five, the proportion of male patients was greater than usually found in the general population. As opposed to the provincial hospitals, the study established that teaching hospitals treated an older group of men<sup>3</sup> and that duration of stay in teaching hospitals was also longer than average.<sup>4</sup>

In the study of two counties in the west of Scotland, the authors observed the relationship which pregnancy

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1 Ibid., p. 137.

2. Ibid., pp. 131-32.

3 Ibid., p. 123.

4 Ibid., p. 124.

had upon the female hospital population. They concluded that approximately "one-third of the total number of female patients who received in-patient treatment were admitted for childbirth or its complications, or for diseases of pregnancy."<sup>1</sup> This fact is interesting in a comparative way with the Winnipeg General Hospital findings which also included males and females in the study.

Ferguson and MacPhail concluded from their study that a small group of patients with histories of recurrent illness were responsible for using a considerable portion of the hospital services. They further concluded that recurrent illness, resulting in repeated hospital care, could be lessened by appropriate measures directed at the causative social and environmental factors.

Another series of studies<sup>2,3</sup> treating the problem of hospital utilization has resulted in a specific study of Multiple Admissions to Hospital<sup>4</sup>. These studies took

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1 Ibid., p. 122 .

2 G. W. Myers, "Hospitalization Among Residents of Urban and Rural Communities," Canadian Journal of Public Health, 44: 43-50, February, 1953.

3 F. B. Roth, and others, "Some Factors Influencing Hospital Utilization in Saskatchewan," Canadian Journal of Public Health, 46: 303-323, August, 1955.

4 M. I. Roemer, and G. W. Myers, "Multiple Admissions to Hospital," Canadian Journal of Public Health, 47:469-481, November, 1956.

place in Saskatchewan between 1950 and 1954, under the Saskatchewan Hospital Services Plan.

The study of Multiple Admissions to Hospital by M. I. Roemer and G. W. Myers covered those males who were twenty-one years of age and over, at the time of their admission to hospital during 1954. Of the 165,000 admissions during 1954, 27,746 patients met the above conditions and were the patients analyzed in the study.

The study of multiple admissions was made because of the differences observed in rates of hospital utilization. Some areas in Saskatchewan were recognized as having high utilization rates and other areas as having low rates. It was also observed that the areas of high utilization had a greater percentage of repeaters among the admissions. This fact encouraged the authors to examine the problem of multiple admissions more closely to learn some of the characteristics of the hospital-repeater as applied to the province as a whole.

The patients in the study were grouped according to the number of times in hospital during the previous five years. With this basic grouping, such factors as age, place of residence, marital status, diagnoses and length of hospital stay, were analyzed by the use of fre-

quency distribution tables.

The authors recognized that both frequency and length of stay in hospital increased with advancing years. They questioned the contribution made by the hospital-repeater to this increase and found "that the impact of repeated hospital admissions on the total volume of hospital services is progressively greater with advancing years."<sup>1</sup> They also found that the average length of stay tended "to be greater among the hospital repeaters, in rough proportion to the extent of re-admission."<sup>2</sup>

Roemer and Myers discovered as did Ferguson and MacPhail (page 7) that the hospital population could be divided roughly into two groups. In the one group were patients with curable illnesses and in the other group were the patients with chronic, incurable advanced illnesses. The latter group were found to be the patients with the higher multiple admissions and it was concluded that a patient's illness determined the frequency of hospital care required.<sup>3</sup>

Closely related to the age and illness of the

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1 Roemer and Myers, op. cit., p. 475.

2 Ibid., p. 472.

3 Ibid., pp. 477-78.

patient in determining frequency of admission, Roemer and Myers studied the marital status of the patient. The study included only male patients above the age of twenty-one. They found that admission rates and frequency of admission were less in the cases of married men than they were for those who were single, divorced, separated or widowed. They came to the conclusion that being married provided some protection against frequent hospital admissions.<sup>1</sup> More favorable home and living conditions were believed to operate in the reduction of hospital care required.

In the study of residence, the classifications used in a previous study were continued.<sup>2</sup> When the multiple admissions were compared with residence by cities, rural areas and towns and villages, they were found to occur most frequently in the areas where the volume of hospital care was high. Thus frequency of hospital admission was found to be associated with the place of residence, occurring most often in towns and villages, and least often in cities. Lack of health care facilities in small towns and villages, combined with the migration of older citizens to these centers have been suggested as the factors causing more frequent admissions.

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1 Ibid., p. 476.

2 Myers, op. cit., pp. 43-50.

3 Roemer and Myers, op. cit., p. 480.



As a result of their study of multiple admissions, Roemer and Myers concluded that "a major share of hospital admissions are referable to the repeaters."<sup>1</sup> They suggested that the problem is an increasing one and like Ferguson and MacPhail have recommended that more attention be paid to the factors contributing to repeated admissions.

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<sup>1</sup> Ibid., p. 481.

### CHAPTER III

#### THE STUDY METHOD

The material for this report was prepared from the 371 schedules obtained during a survey of public ward patients. Question (21) of the schedule, dealing with number of admissions to hospital, has been selected as the basis for this present report.

The survey took place during the month of November, 1956, when patients discharged from the public wards of the Winnipeg General Hospital were interviewed. The month of November was chosen as an average month in which to make such a survey.

The nine full time students in second year at the Manitoba School of Social Work participated in the interviewing procedure and were assisted by several graduate social workers and staff members of the Social Service Department of the hospital. The interviews were facilitated by the use of a prepared schedule. The schedule attempted to obtain a social-medical-economic picture of the patients using the public wards.

As stated in Chapter I, the main focus of this report will be to study factors which seem to be associated with

multiple admissions. These factors will be grouped under three main headings: social, economic and medical services.

### Limitations

Some limitations concerning the survey have already been discussed in Chapter I. In considering the multiple admission patient, it was necessary to limit the number of years in which multiple admissions took place. For this reason, a five year period was arbitrarily chosen. In question (21) the interviewer was asked to record the number of times the patient had been in hospital "in the last five years". This question was open to different interpretations. To gain a measure of uniformity, any admission recorded for the year 1951 has been ignored when replies to this particular area of the schedule were tabulated.<sup>1</sup> This decision resulted in a consideration of hospital admission for the period January 1952 to November 1956 inclusive. Although it was realized that the time interval was actually four years and eleven months instead of five years, a more accurate approximation was achieved by the elimination of 1951 entries. The period from January 1, 1952 - November 30, 1956, has been referred to as "the five year period" or the "study period".

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<sup>1</sup> The questions referred to were (21) - (32) inclusive.

In cases where a patient had more than one hospital discharge during the month of November, 1956, an interview schedule was completed for each discharge. The replies to question (21) in such cases would have increased by one, with each succeeding admission during the month. In some cases, this increase was not recorded. For example, one expectant mother had four recorded admissions during the month of November but the number of previous admissions were recorded the same on each schedule. This resulted in having four patients recorded with a similar number of admissions when in fact, four patients with increasing numbers of admissions should have been the result. Since it was impossible to locate every such case, no attempt was made to correct the discrepancies observed. If the cases had been located and the errors corrected, the effect would have been to "smooth out" the multiple admission figures.

#### Method of Grouping

It has been decided to analyze the material obtained from the schedule by using the number of admissions during a five year period as the constant variable. The material in the social, economic and medical services area, has been grouped against the constant variable in a frequency distribution to learn if a direct or inverse relationship exists.

Patients were grouped on the basis of their replies to question (21) which asked for the number of times a patient had been in hospital during the five year period. Thus a reply of "0" acknowledged the present admission but denied previous admissions. A reply of "1" indicated that the patient had one previous admission, a reply of "2" that the patient had two previous admissions and so on.

Of the 371 patients, a group of 11 could not be classified into one of the admission groups. This group has been designated as an unstated "U" group in the frequency tables. Among this group were patients who refused to participate in the interview as well as patients unable to participate because of physical or mental impairment.

#### Earlier Method of Grouping

Thought was given to a study of the 371 patients by the comparative method. That is, the total patient group would have been divided into two groups, repeaters and non-repeaters. This method would have established the presence or absence of certain factors in each group but would not have provided an opportunity to study the interdependency which was presumed to exist with increasing admissions. The present method allows for the study of the patients on the basis of frequency distribution.

### Social Area

Within the social area, the factors of sex, age, and location of residence at time of interview, have been considered.

Question (2) of the schedule provided the information as to the sex of the patient. This topic was chosen for study to learn if the sex of the patient had any relationship to the frequency of admission. Sex was also related to age level and admissions to learn if the sex of the patient, at certain age levels, contributed to increased admissions.

The age of the patient at the time of discharge was obtained from question (6) of the schedule. This was important in learning whether age, especially increasing age, was a factor accompanying increased admissions. There was also a question whether certain age groups contributed more heavily to multiple admissions than other age groups. In the presentation of ages, the five year grouping as employed by the Dominion Bureau of Statistics will be followed. Certain of these groups will be combined for ease in presentation of results.

Place of residence at time of interview was obtained from question (5) of the schedule. The residence of the

patient was classified as one of the following: Winnipeg, Manitoba, or Other. To qualify as a "Winnipeg" resident, residence within the city limits was necessary. "Manitoba" referred to patients resident within the provincial boundaries, excluding Winnipeg city patients. Patients who gave their place of residence as outside the province of Manitoba have been classified as "Other". The method of grouping patients according to these definitions allowed for a comparison with Winnipeg General Hospital statistics. As well, it was believed that nearness to hospital might determine the frequency of use. This breakdown also permitted a study of admissions as related to residence or nearness to hospital.

#### Economic Area

When considering the effect of economic factors upon multiple admissions, it was not felt that income alone could be used as the basis of comparison. Adequacy of income was known to be a function of many variables including such items as number of dependents, savings, debts, health, etc. Because of the complexity of the income picture and the limitations in time for this project, only a limited study of the economic area was possible. Therefore, instead of trying to relate multiple admissions to different income levels, one particular income level was selected for this study. This was accomplished by the use of question (42) on the interview schedule. All patients in receipt of public

assistance were grouped according to their hospital admissions. It was known for example, that all public assistance recipients must have passed a "means test" and, therefore, had a comparable minimum income.

The frequency distribution of admissions with public assistance recipients was studied to see if a greater percentage of patients were in receipt of public assistance when the number of admissions increased.

Another method of assessing the economic situation was believed to exist in replies to question (64). This question dealt with payment of the hospital account by the responsible person and required an evaluation by the patient or informant as to how much would be paid privately. However, the reliability of the reply is questionable since the informant's response may have been colored by his feelings of inadequacy, or conversely, his need to appear adequate. The replies to question (64) were compared with multiple admissions to learn the nature of the relationship. It was thought that a person might tend to lose initiative in paying the hospital bill as the number of admissions increased.

### Medical Services

The third area to be considered in the study of multiple admissions was the area of medical services. In



this connection, question (25) dealing with type of ward accommodation previously used, was analyzed to learn if choice of accommodation was related to frequency of admission.

To discover if choice of accommodation and frequency of admission were related, the group of patients who had used accommodation "other than public" at some time in the past was studied. This was the group of patients in which choice of accommodation changed. It was believed that if frequency of admission and choice of accommodation were related, this group would indicate such a relationship.

A second factor of significance in the medical services area was considered to be the length of hospital stay in relation to multiple admissions. It was of interest to know whether length of stay increased with multiple admissions. To have found the answer to this question would have required more cases than we had at our disposal, as well as more time than was available in this study. The method would have been to select each of the multiple admission groups in turn, for example, "1 group" and calculate the average days of stay for this group for each of the five years. This procedure would have been repeated for each succeeding admission group. If the average days of stay had

increased as the number of admissions increased, then we could have concluded that they were positively related.

As stated, this would have demanded a larger patient population and more time than was available in this study. For these reasons, this important aspect of the multiple admission study had to be omitted.

## CHAPTER IV

### ANALYSIS OF THE FINDINGS

#### General Introduction

Table I, page 25, indicates that among the 371 patients interviewed during the study, 116 patients had not required hospitalization during the previous five years. A small group of 11 patients could not be classified as to previous admissions and have been referred to as having an unstated number of admissions. The remaining 244 patients had one or more admissions and among them reported a total of 568 admissions during the study period. Patients with one or more previous admissions made up 65.8 per cent of the total study group.

Patients reporting less than five previous hospitalizations were 90.8 per cent of the total study group while patients reporting five or more were only 6.2 per cent of the total. The remaining 3.0 per cent of the study group were patients with an unstated number of admissions. Because of the small number of patients reporting five or more multiple admissions, it was impossible to observe significant trends for those patients when studying the selected social, economic and medical topics.

TABLE I  
NUMBER AND PERCENTAGE DISTRIBUTION OF  
PATIENTS BY MULTIPLE ADMISSIONS DURING  
1952 - 56

Multiple Admissions	Patients	Percentage Distribution
Total	371	100.0
0 <sup>a</sup>	116	31.3
1	104	28.0
2	55	14.8
3	34	9.2
4	28	7.5
5	8	2.2
6	11	3.0
7	0	0.0
8	2	0.5
9	2	0.5
U <sup>b</sup>	11	3.0

<sup>a</sup> No previous admissions.

<sup>b</sup> Previous admissions unstated.

## SOCIAL AREA

Age

As will be recalled, a previous study has indicated that "the impact of repeated admissions on the total volume of hospital services is progressively greater with advancing years."<sup>1</sup> The earlier study was conducted for 27,746 males above the age of twenty-one, whereas the present study group was made up of 371 males and females of all ages. Despite the obvious differences, it was desired to learn if our study corroborated the findings of the earlier study.

To discover if our findings confirmed the earlier findings, the information contained in Table II, page 29, was used to establish the percentage distribution of ages as found in Table III, page 30. Table III presents the findings for the study group as well as for the male patients alone.

As observed in the study group, there does appear to be a trend of increasing admissions with increased age. This trend is observed for both the "0" and the "1" multiple admission groups. For example, in the "0" and "1" groups

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<sup>1</sup> Roemer and Myers, op. cit., p. 475.

it may be observed that, as the ages of the patients increase, the percentage of patients in each group also increase. The one exception to this trend may be seen in the "0" group for patients over the age of seventy.

Since the earlier study was confined to males only, it was thought that the comparison would be much closer if the males in the present study were considered. However, as noted from Table III, there were two exceptions to the trend of increasing admissions with advancing age when the "0" and "1" multiple admissions were considered. The first exception to the trend may be observed for the "0" group in the age range 25-44, and the second exception may be observed in the age range 45-64 of "1" group.

The absence of an observable trend in the higher multiple admission groups may be accounted for in the limited number of patients in the study. If the number interviewed had been increased, the discrepancies in the trend might have disappeared. However, the results obtained do suggest that repeated admissions to hospital occur more frequently with advancing age.

From Table II, it may be observed that the aged group (65 and over) were represented by 99 patients, or 26.7 per cent of the patient population. This was considerably greater

than 8.4 per cent<sup>1</sup> for the same age group in the general population of Manitoba.

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<sup>1</sup> Census of Canada, 1951. Population, Vol. II.  
Ottawa: Dominion Bureau of Statistics, 1953.

TABLE II

AGE AND SEX OF PATIENTS BY MULTIPLE ADMISSIONS DURING 1952-56

Multiple Admissions	Total	Total	Under 25		Total	25-44		Total	45-64		Total	65-69		Total	70 +	
			M	F		M	F		M	F		M	F		M	F
Totals	371	69	27	42	119	37	82	84	44	40	25	11	14	74	50	24
0 <sup>a</sup>	116	29	11	18	28	16	12	25	13	12	9	4	5	25	20	5
1	104	20	7	13	26	8	18	26	14	12	8	3	5	24	15	9
2	55	7	4	3	27	6	21	13	4	9	2	1	1	6	4	2
3	34	5	1	4	16	1	15	5	5		3	1	2	5	4	1
4	28	4	1	3	8	2	6	8	3	5	3	2	1	5	3	2
5+	23	1	1		14	4	10	5	4	1				3	2	1
U <sup>b</sup>	11	3	2	1				2	1	1				6	2	4

<sup>a</sup> No previous admissions.<sup>b</sup> Previous admissions unstated.



TABLE III

PERCENTAGE DISTRIBUTION OF PATIENTS BY  
AGES AND BY MULTIPLE ADMISSIONS DURING  
1952-56

Multiple Admissions	PERCENTAGE DISTRIBUTION BY AGES			
	25-44	45-64	65-69	70 +
STUDY GROUP				
Total	100.0	100.0	100.0	100.0
0	23.5	30.1	36.0	33.9
1	21.8	31.3	32.0	32.4
2	22.7	15.7	8.0	8.1
3	13.4	5.9	12.0	6.7
4	6.7	9.5	12.0	6.7
5 and over*	11.9	7.5	0.0	12.2
MALES ONLY				
Total	100.0	100.0	100.0	100.0
0	43.2	29.5	36.3	40.0
1	21.6	31.8	27.3	30.0
2	16.1	9.1	9.1	8.0
3	2.7	11.4	9.1	8.0
4	5.4	6.8	18.2	6.0
5 and over*	11.0	11.4	0.0	8.0

\* Patients with an unstated number of admissions have also been included.

Sex

From Table II, page 29, a study of the relation between the sex of the patient and multiple admissions indicated that as the number of admissions increased, up to the third re-admission, a greater percentage of the patients were found to be female. The following results were derived from Table II to illustrate this fact:

Multiple Admissions	Patients			Percentage Distribution		
	Total	Male	Female	Total	Male	Female
0	116	64	52	100.0	55.2	44.8
1	104	47	57	100.0	45.2	54.8
2	55	19	36	100.0	34.6	65.4
3	34	12	22	100.0	35.3	64.7
4	28	11	17	100.0	39.3	60.7

It was observed that female patients outnumbered the male patients by 202 to 169. An interesting relationship was found to exist when the age group and the sex of the patients were studied for the total group. The female patients increasingly outnumbered the male patients up to the age of 45. However, at this age, the trend reversed itself and the number of male patients in hospital progressively outnumbered the female patients. This has been illustrated by the following information derived from Table II:

Age in Years	Total	Male	Female
Total	371	169	202
Under 25	69	27	42
25 - 44	119	37	82
45- 64	84	44	40
above 65	99	61	38

One possible explanation of this phenomena lies in the effects of maternity and related illnesses. There were found to be fifty-two patients with an obstetrical diagnostic classification below the age of forty-five and none above this age. Also below the age of forty-five, there were twenty-four patients in receipt of gynecological care whereas above this age, there were only ten patients. Thus, the reversal in male-female proportions at the age of forty-five appears to be closely associated with the part played by maternity and the diseases or illnesses related to it.

#### Residence

Place of residence appeared to bear some relationship to use of hospital facilities. From Table IV, page 33, the following table was derived to illustrate that a trend did exist when residence and multiple admissions were compared:

Multiple Admissions	Total	Percentage Distribution		
		Winnipeg	Manitoba	Other
0	188.0	69.8	29.3	0.9
1	188.0	80.8	18.3	0.9
2	100.0	78.2	20.0	1.8
3	100.0	70.6	29.4	0.0
4	100.0	67.9	32.1	0.0

Discounting patients without a previous admission, it was observed that Winnipeg patients, and therefore those living close to the source of treatment contributed a decreas-

TABLE IV  
RESIDENCE OF PATIENTS BY MULTIPLE  
ADMISSIONS DURING 1952-1956

Multiple Admissions	Total	Residence		
		Winnipeg	Manitoba	Other
Total	371	275	91	5
0	116	81	34	1
1	104	84	19	1
2	55	43	11	1
3	34	24	10	
4	28	19	9	
5 /	23	15	7	1
U	11	9	1	1

ing number of patients as the number of admissions increased. Rural patients contributed an increasing percentage of the total admitted with each succeeding admission.

Winnipeg patients numbered 275 as compared with 91 for Manitoba and 5 from outside the province. Thus Winnipeg patients comprised 74.1 per cent of the total study group. The accuracy of the study method was checked by a comparison with Table III and hospital records,<sup>1</sup> resulting in the following percentage distribution:

Source of Information		Winnipeg	Manitoba	Other
Survey, November, 1956	100.0	74.1	24.5	1.5
November, 1956 *	100.0	76.3	22.1	1.6
Annual Report, 1955	100.0	75.6	23.6	0.8

\* Based on the Winnipeg General Hospital Daily Record of Occupancy which indicated the following: Total 452, Winnipeg - 346, Manitoba - 100, and other - 6.

Although the results were not identical, the separate sources did indicate a measure of reliability in the method of the study for this item on the schedule.

The characteristics of the five patients, recorded as having residence outside Manitoba proved interesting. Of the five interviewed, all were males. With the exception of one patient who was separated from his wife, all were single.

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<sup>1</sup> Winnipeg General Hospital, "Daily Record of Occupancy, 1956."

One patient's age was under twenty-four, another thirty-two and the remaining patients in their fifties.

The population figures for the province of Manitoba and the city of Winnipeg were reported to be 850,040<sup>1</sup> and 256,683<sup>2</sup> respectively. These Winnipeg city residents made up 30.2 per cent of the provincial population and 74.1 per cent of the patients in our survey. Thus, persons living closest to the source of treatment were the greatest users of that service.

#### ECONOMIC AREA

##### Public Assistance

The part which economic factors play in the multiple use of public ward accommodation is extremely difficult to estimate with a high degree of accuracy. However, from Table V, page 36, it is fairly safe to assume that 101 patients of the 371 patients will not be expected to meet the hospital bill. These are the patients who were in receipt of public assistance at the time of the survey. Because receipt of public assistance indicates an inability to meet current food, shelter and clothing costs, or some part of

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<sup>1</sup> Census of Canada, 1956. Population of Electoral Districts. Ottawa: Dominion Bureau of Statistics, February 2, 1957.

<sup>2</sup> Census of Canada, 1956. Preliminary Population Totals. Ottawa: Dominion Bureau of Statistics, November 28, 1956.

TABLE V  
PUBLIC ASSISTANCE STATUS OF PATIENTS BY  
MULTIPLE ADMISSIONS DURING 1952-1956

Multiple Admissions	Total	Public Assistance Status *		
		A	B	C
Total	371	6	264	101
0	116	2	89	25
1	104	1	76	27
2	55		35	20
3	34		20	14
4	28		23	5
5 /	23		16	7
U	11	3	5	3

\* A : Receipt of public assistance unknown.  
B : Patients not in receipt of public assistance.  
C : Patients in receipt of public assistance.

these, the patient will be unable to meet the hospital bill. Patients in this group made up 27.2 per cent of the public ward population.

It would be incorrect to assume that the remaining 71.2 per cent of the public ward patients were able to meet the costs of health care. From Table V, it is also seen that 264 patients used public ward accommodation without the benefit of having their health care needs automatically underwritten as is the case with the public assistance group. Within the group of 264 patients are found individuals who have not qualified to receive public assistance. However, the problem of meeting the unexpected costs involved in health care, may be just as significant for this segment of the public ward patients.

The possibility that persons within the non-assistance group are living on marginal incomes and are unable to meet health care costs may be deduced by observing a group of patients in the non-public assistance category. The patients referred to are over seventy years and are compared with the patients from sixty-four to sixty-nine as follows:

Age Group	Total	Non-Public Assistance	Public Assistance
70 and over	74	59	15
65 - 69	25	9	16



At the age of 70, persons become eligible for Old Age Security which is not considered a form of public assistance because a "means test" is not required. It would appear that patients transfer from the public assistance to the non-public assistance group at the age of 70. For example, at 70 years of age, only 20.3 per cent report receipt of public assistance whereas 64.0 per cent reported public assistance before this age. It is highly unlikely that patients, on reaching the age of seventy, are any more capable of meeting hospital care costs than they were before. Thus it would appear that the effect of Old Age Security is to remove some patients from the public assistance rolls. This however, still leaves them in the position of being unable to meet their health care costs. Thus it may be seen that the group unable to meet hospital costs is certainly in excess of the 27.2 per cent found in the public assistance group. In spite of this, a trend was apparent when public assistance (as an economic level) was compared with multiple admissions.

Table V was used to derive the following percentage distribution figures relating public assistance and multiple admissions:

Multiple Admissions	Percentage Distribution *			
	Total	A	B	C
Total	100.0	1.6	71.2	27.2
0	100.0	1.7	76.7	21.6
1	100.0	1.0	73.1	25.9
2	100.0		63.6	36.4
3	100.0		58.8	41.2
4	100.0		82.1	17.9

\* A: Receipt of public assistance unknown.  
 B: Patients not in receipt of public assistance.  
 C: Patients in receipt of public assistance.

It may be seen that up to the third re-admission, as the number of admissions increased the per cent of patients in receipt of public assistance also increased. That is, more of the patients were in need when admissions increased and had to resort to public assistance programs. Thus multiple admissions and indigency appear to be directly related. This may mean that illness encourages indigency or conversely indigency encourages illness.

#### Payment of Hospital Bill

In an attempt to learn if patients considered themselves less able to meet hospital costs when faced with increasing admissions, the replies to question (64) were related in question (21) as in Table VI, page 40. If repeated admissions had been the only factor influencing the patients' replies to question (64), then one might have expected an increasing number of patients indicating an in-

TABLE VI  
 PAYMENT OF HOSPITAL ACCOUNT BY  
 MULTIPLE ADMISSIONS DURING  
 1952-56

Multiple Admissions	Expecting to Pay Hospital Account				
	Total	In Full	In Part	None	Unstated
Total	371	94	48	224	5
0	116	38	18	59	1
1	104	28	4	72	
2	55	18	9	28	
3	34	3	8	23	
4	28	4	5	19	
5	8		2	6	
6	11	3	1	7	
7					
8	2			2	
9	2		1	1	
10	11		7	4	

ability to pay with each successive admission. No such trend was observed and it might be assumed that a simple direct relationship does not exist where these two factors are concerned.

## MEDICAL SERVICES

### Previous Ward Accommodation

The patients studied were those using hospital care "other than public", at some time in the previous five years. There were forty-nine patients in this group. Thus 14 per cent of the patients<sup>1</sup> had used private or semi-private care at some time during the five year period.

The group of forty-nine patients were observed to learn the basis for the present use of public ward care. In forty-five cases, lack of financial resources to pay treatment costs was considered to be one of the reasons for using public ward accommodation. This fact was established on the basis of replies to question (17) of the schedule. In addition, if the patient had utilized out-patient facilities of the hospital, question (20), lack of financial ability to meet treatment costs was also considered to exist. In the

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<sup>1</sup> This particular study group consisted of 364 patients. Seven of the 371 schedules had to be discarded since mutually exclusive replies existed in questions (21) and (25).

remaining four cases, inability to meet treatment costs could not be established by means of questions (17) and (20). Use of public ward facilities could not be attributed to financial indigency. However, in three of these cases, the patients were brought to the hospital by the police and the fourth was an inmate of a jail.

It cannot be assumed, however, that all of the forty-nine patients were totally indigent. Within this group were found three patients who did have hospital insurance but required municipal assistance to pay the remaining hospital account. Some of the patients expressed a willingness to pay a portion of their own hospital accounts, but because total payment for treatment could not be ensured the patient was admitted to public service.

To discover if choice of accommodation was related to frequency of admission, the group of forty-nine patients was first considered. Since it was discovered that some of these patients had just recently changed accommodation and still others had made the change at some undetermined time in the previous five years, a further limitation had to be imposed. Therefore, only those patients who had, on their last admission to hospital, used private or semi-private care were considered. Thus we were left with a group of thirty patients who were using public facilities at the time of the interview

and on the previous admission had used private or semi-private hospital accommodation. Thus 8.2 per cent of the patients had changed from private or semi-private care to public care since their last hospital admission.

When the thirty patients were considered in the light of repeated admissions, the following relationship was found to exist:

<u>Multiple Admissions</u>	<u>Patients</u>	<u>Percentage</u>
<u>Total</u>	<u>30</u>	<u>100.0</u>
1	17	56.6
2	9	30.0
3	2	6.6
4	1	3.4
5	1	3.4

Seventeen patients left private and semi-private care in favor of public ward care after one previous admission. A further nine patients left private and semi-private care after two previous admissions. Thus 86.6 per cent of the patients, joining the ranks of the public ward patients from the private wards, did so after a maximum of two re-admissions.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

Of the 371 patients interviewed during November, 1956, approximately 65 per cent had one or more previous admissions during the preceding five years.

The present study corroborated the findings of Roemer and Myers relating repeated admissions and advancing age. Within the limitations of the study, it was found that repeated admissions did increase with advancing age. It was also learned that the aged group (65 and over), was approximately three times greater in the hospital population than in the general population. This tends to support the theory that chronic illness which frequently occurs with advancing age, is a very common cause of repeated admissions.

When the sex of the patient was considered as a factor in multiple admissions, it was found that, as the number of admissions increased, the percentage of females in each admission group also increased. This trend was observed up to, and including, the third re-admission. Or expressed in a different way, when males and number of admissions were considered, they were found to bear an

inverse relationship. That is, as the number of admissions increased, the proportion of males decreased.

In our study, female patients were found to outnumber male patients by 202 to 169. When sex and age of the patients were compared, females were in the majority up to the age of forty-four. After the age of forty-five, male patients gradually outnumbered the female patients. From replies to question (33) of the schedule, pregnancy and its related illnesses were seen to account for the preponderance of females in age ranges before forty-five.

For patients with previous admissions, it was found that, as the admissions to hospital increased, more and more of the patients came from outside Winnipeg. Since the proportion of patients coming from outside Winnipeg increased with each successive admission, one might speculate that the more serious cases tended to seek the more specialized treatment facilities available in a teaching hospital.

Patients living nearest the source of treatment accounted for the major share of the admissions. Although Winnipeg residents made up 30.2 per cent of the Manitoba population, they accounted for 74.1 per cent of the hospital admissions. Thus, proximity to hospital appears to be associated with its use.



When multiple admissions to hospital and receipt of public assistance were compared, it was found that the number of persons in receipt of public assistance increased with increasing admissions to hospital. The possibility that low or marginal income might provide a similar relationship was also considered feasible. Indigency and illness appeared to be directly related. The relationship existing between these two factors might profitably be investigated further. Efficient operation of any health care program dictates a complete understanding of the relationship between indigency and illness.

A study of the patient's ability to pay the hospital account, as established by the patient or informant, did not appear to bear a simple direct relationship to repeated admissions. An attempt to measure an attitudinal response such as this in a future study might successfully employ a rating scale technique. For example, the patient might have been asked to rate his own ability to pay by use of a scale. The replies to this question would have been more valid still, if the patient had been informed of his hospital account before recording his response.

The group of patients displaying a change in ward care during the previous five years was 14 per cent of the study group. However, the group of patients using public

ward care at the time of the interview, and who had used private or semi-private care just previous to the present admission was only 8.2 per cent of the total. In this latter group it was found that 36.6 per cent of the patients changed from private or semi-private to public ward care when they had experienced two or less hospital admissions during the five-year study period. An intensive socio-economic study of this latter group at some future time might possibly establish the basis for a change of ward accommodation. This would be particularly interesting in view of recent trends toward government support of public ward accommodation.

In Chapter II, some of the factors accompanying repeated admissions to hospital were considered. Many of the factors leading to physical breakdown were found to exist in the social and environmental milieu. A follow-up study of the patients in this study could possibly provide such information. A later study of the medical history to see if the same people continue to be re-admitted, could be made from the hospital records. If the study were limited to Winnipeg patients, a review of the social and environmental factors - even home visitation would be possible. As an outgrowth of the findings, a program of social and environmental rehabilitation might be attempted.

Repeated admissions to hospital are on the increase,<sup>1</sup> Any program intended to meet the health care needs of the people must devote adequate attention to the social and environmental factors creating the need for repeated hospital admission.

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<sup>1</sup> Annual Report of Hospitals, Vol. I, (Ottawa: Dominion Bureau of Statistics, 1954), p. 48.

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## APPENDIX A

STUDY OF PATIENTS IN THE PUBLIC WARDS  
OF THE WINNIPEG GENERAL HOSPITAL

November, 1956

Interviewer:

Surname \_\_\_\_\_

Sex \_\_\_\_\_

Lenth of Interview \_\_\_\_\_

Date \_\_\_\_\_

I. Identifying Information

1. Code Number \_\_\_\_\_ 2. Sex \_\_\_\_\_ 3. S.M.W.D. Sep. \_\_\_\_\_  
 (of patient)
4. Address \_\_\_\_\_ 5. \_\_\_\_\_  
 (street or P.O. address) (municipality)
6. Age at last birthday \_\_\_\_\_
7. Relationship to patient of person interviewed \_\_\_\_\_
8. Relationship to patient of person responsible \_\_\_\_\_
9. Address \_\_\_\_\_ 10. \_\_\_\_\_  
 (Street or P.O. address) (Municipality)

Note Sections II, IV, V, VI apply either to the patient or to the person responsible for his expenses, if this is someone other than the patient.

II. FAMILY

11. Number of dependent children \_\_\_\_\_
12. Number of other dependants \_\_\_\_\_

\_\_\_\_\_ (give relationship)

For single person: 13. Living with relatives \_\_\_\_\_

14. Rooming \_\_\_\_\_ Boarding \_\_\_\_\_ in Institution \_\_\_\_\_

Other \_\_\_\_\_ Describe \_\_\_\_\_

15. Has hospitalization necessitated any special arrangements at home?

Describe \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



### III. Medical

16. Patient referred by \_\_\_\_\_  
( include name of physician or agency)

17. Why is patient using the Public Ward?

18. Has patient a family physician

19. Has he ever had

20. Does patient or his family usually receive medical care from O. P. D. here?

21. No. of times patient has been in hospital in last 5 years

22. <u>Year</u>	23. <u>Type of Illness</u>	24. <u>Approximate Stay in days</u>	25. <u>Type of Accom.</u>	26. <u>Name of Hospital</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

27. How many times have members of the patient's family been in hospital in the last 5 years:

[illegible]

(Answers to questions 33 to 39 not to be secured from the patient)

33. Diagnosis \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

34. Cost of Medical Treatment \$ \_\_\_\_\_

35. Drugs \$ \_\_\_\_\_

36. Other \$ \_\_\_\_\_  
(Specify)

37. Length of stay in hospital \_\_\_\_\_ days. 38. Cost \$ \_\_\_\_\_

39. Prognosis: Complete recovery \_\_\_\_\_ handicapped \_\_\_\_\_

Illness likely to recur \_\_\_\_\_

IV. Employment

40. Last occupation before entering hospital \_\_\_\_\_  
\_\_\_\_\_
41. Employed: full time \_\_\_\_\_ part time \_\_\_\_\_ casual \_\_\_\_\_  
seasonal \_\_\_\_\_ retired \_\_\_\_\_ unemployed \_\_\_\_\_
42. Is he in receipt of public assistance \_\_\_\_\_  
(name of program)
43. Can he return to the same job \_\_\_\_\_
44. Can he return to another job in the same firm \_\_\_\_\_
45. Name of firm where he is employed \_\_\_\_\_  
(please print)
46. About how many employees are there \_\_\_\_\_
47. Is there a union in the firm \_\_\_\_\_
48. Is there any kind of group insurance for hospital care \_\_\_\_\_
49. Is there any kind of group insurance for medical care \_\_\_\_\_

V. Financial Status

50. Does person responsible own his own home \_\_\_\_\_
51. business \_\_\_\_\_ 52. farm \_\_\_\_\_
53. What is the amount of the unpaid mortgage \_\_\_\_\_
54. What is the amount of the monthly mortgage payments \_\_\_\_\_
55. Amount of money owing for hospital \_\_\_\_\_  
medical \_\_\_\_\_  
furnishings \_\_\_\_\_  
groceries \_\_\_\_\_  
car \_\_\_\_\_  
Other \_\_\_\_\_  
(specify) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
56. Total Debts \$ \_\_\_\_\_  
\_\_\_\_\_

57. Have any of these debts been amalgamated through a finance company \_\_\_\_\_
58. Amount owing monthly to finance company \_\_\_\_\_
59. How much did he pay last month on these \_\_\_\_\_  
(or last month before entering hospital)
60. Amount of savings \_\_\_\_\_ 61. bonds \_\_\_\_\_
62. Other assets (specify) \_\_\_\_\_
63. Number of bushels and type of grain in storage \_\_\_\_\_  
\_\_\_\_\_
64. Does he expect to be able to pay the hospital bill  
in full \_\_\_\_\_ in part \_\_\_\_\_
65. Does he expect to get help in paying it from:  
children \_\_\_\_\_ relatives \_\_\_\_\_  
municipality \_\_\_\_\_ Other \_\_\_\_\_  
(specify)  
\_\_\_\_\_

VI. Earnings and Income

66. Amount of earnings in last 12 months \$ \_\_\_\_\_  
(including those of spouse)

67. Amount of last month's income from:

earnings \_\_\_\_\_

old age security \_\_\_\_\_

annuity or pension \_\_\_\_\_

public assistance \_\_\_\_\_

rental of property \_\_\_\_\_

roomers and/or boarders \_\_\_\_\_

children or relatives \_\_\_\_\_

other sources  
(describe) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

68. Total Income \$ \_\_\_\_\_  
\_\_\_\_\_

VII. Insurance

69. Is there any kind of insurance which will help pay for hospital care \_\_\_\_\_ 70. medical care \_\_\_\_\_

	<u>Name of Insurance Company</u>	<u>No. of Policy</u>
71. Individual _____		
72. Group _____		

If there is an insurance policy, record name and initials of holder \_\_\_\_\_

73. If patient is in hospital through a car accident, does he expect that his expenses will be paid through car owners policy \_\_\_\_\_

Name & initials of policyholder \_\_\_\_\_

Name of Insurance Company \_\_\_\_\_

No. of Policy \_\_\_\_\_

VIII. Health Organizations

74. Do you expect to get help from any of the following organizations:

S.C.A.A. \_\_\_\_\_ Red Cross \_\_\_\_\_ Cancer R.R.I. \_\_\_\_\_

C.A.R.S. \_\_\_\_\_ M.S. Society \_\_\_\_\_

If any of the above organizations are helping, record patients name and initials

\_\_\_\_\_

75. or from:

government insitution \_\_\_\_\_  
(specify)

municipality \_\_\_\_\_

IX. General

76. Note any special circumstances which would affect the person's ability to pay his hospital bill:

77. Note any circumstances which you believe may have affected the interview.