Further Studies in Hospital and Community

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Published for the Nuffield Provincial Hospitals Trust
by the Oxford University Press 1962

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The General Picture

I

THE three studies now presented stem naturally from *Hospital and Community*[1], a report which dealt with the histories of 705 men discharged after treatment in acute medical wards of four hospitals in the West of Scotland. One-third of these patients had already had one or more spells of in-patient treatment, or out-patient hospital care, for the condition responsible for their recent hospital admission, or for one closely related, within the 5 years immediately preceding the admission on which the study was based. Of the 705 men discharged, 10 per cent. died within three months of leaving hospital, 5 per cent. had been re-admitted and a further 10 per cent., seen in their own homes three months after discharge, had clearly deteriorated; so that about one-quarter of the men had gone downhill. Three hundred and seven of the original 705 had returned to work within three months of discharge from hospital, but about one-fifth of these were in unsuitable jobs. Nor was the picture any brighter 2 years after the men left hospital. By then a quarter of the original number had died, many after further spells of hospital treatment. It was estimated that of those still alive two-thirds had derived substantial and lasting benefit from hospital care, one fifth had not improved, and the balance (13 per cent.) were obviously worse than they had been on discharge. Twenty-seven per cent. of the survivors had had additional spells of in-patient hospital treatment, over a quarter of them more than one. Nearly one-third of the survivors had worked for less than one of the 2 years since leaving hospital; many had done no work during that period.

Many of the patients treated suffered from gross disease, sometimes responding dramatically to hospital treatment but prone to relapse when the patient returned home, so that in the aggregate a considerable proportion of the available beds in the best of our hospitals was occupied by a comparatively small number of patients, people who kept on breaking down in health at short intervals and requiring to be admitted again

and again to one hospital or another. Sometimes such breakdown was unavoidable from the very nature of the disease, but there seemed to be scope for reducing this mass of recurring invalidity. The clinicians who treated the men in hospital estimated (on medical grounds) that the breakdown in health responsible for admission should have been prevented in about 10 per cent. of cases, while subsequent domiciliary visits suggested that adverse social and environmental conditions were mainly responsible for a further 14 per cent. The men who had most frequent recurring spells of hospital treatment were, in the main, those drawn from the less privileged groups in the community, unskilled labourers from poor homes and, not surprisingly, they were the people who had the poorest work record after discharge from hospital. The proportion of men back at work three months after leaving hospital was more closely related to nature of employment and home conditions than to the estimate made by the medical staff at the time of the men's discharge from hospital. In many cases early recurrence of breakdown came of bad social and environmental conditions rather than of any inevitability on medical grounds.

It is clearly important—alike from social, economic and administrative considerations—to see whether anything can be done to obtain a greater measure of permanent benefit from hospital care. The difficulties are formidable. *Hospital and Community* recognised this; what, it asked, do we really want of our hospital service? While concluding grudgingly that 'it is doubtful whether results substantially better than those presented in this report can be obtained with things as they are', it stressed the importance of early treatment; it referred to the poverty of provision of rehabilitation centres in this country and to the need to develop the as yet embryonic after-care services. Pointing out that for most patients hospital care is but an episode in a very much longer tale of medical supervision, it laid emphasis on the importance of seeking to provide the benevolent home background that means so much to the family doctor in his efforts to keep a patient well; and on the urgency of forging firmer links between hospital and family doctor, and between both of these and the official machinery for helping disabled people to obtain suitable work.

The matter could scarcely be left there and it was decided to carry out further research on the subject in Glasgow, Aberdeen and Dundee. One object was to find out how far the unhappy findings reported from Glasgow held in other parts of the country and whether this wider experience suggested any promising lines of action. It was agreed at the outset that while research in each of the three centres should follow the broad lines of the earlier Glasgow study, each would be encouraged to develop its line of approach in the light of local circumstances.

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In Glasgow, where it had emerged in the earlier research that even such sources of social help—official and unofficial—as might have been expected to be available were not in fact being widely used, it was decided to study a further series of men, treated in similar hospital wards, to see whether better results could be obtained by energetic recourse to such social help as was available. Altogether 427 men were included in this second Glasgow study—175 consecutive patients of Glasgow domicile treated in an acute medical ward in one of the main teaching hospitals in the city and 100 from the other main teaching hospital, together with 152 from acute medical wards in another city hospital. While still in hospital these patients were seen with a member of the clinical staff and information was obtained about clinical aspects of their cases, as well as the clinician's estimate of prospects of early fitness for work. The intention was to visit these patients in their own homes over a period of 2 years after discharge to find out how they fared, as in the earlier study, but also—and this was new—to seek any help, usually of a social nature, that could be obtained from established agencies for such of them as appeared to require it.

The men in this second series were broadly comparable with those in the earlier, though they formed a slightly older group, weighted with rather more cardiovascular disease, but with less disease of the nervous system: their average stay in hospital was a little longer. Here, as before, within three months of discharge about 15 per cent. were either dead or back in hospital, though on this occasion 79 per cent. of the

survivors seen at home three months after leaving hospital were regarded as having maintained their improvement, against 65 per cent. in the first series. In both groups the non-manual workers were, in general, the men who had best maintained improvement; the unskilled labourers, the worst. Despite the apparently better clinical progress, the proportion actually back at work three months after discharge from hospital was lower in the present series than in the earlier; but, on the other hand, the proportion of those in unsuitable jobs was appreciably lower in this study, 9 per cent. against 21 per cent.

In both groups 24 per cent. of the men died within 2 years of leaving hospital and the proportion who had maintained their improvement at the end of 2 years was, if anything, lower than before, 45 per cent. against 47 per cent. Twenty-six per cent. of the men in this series seen 2 years after leaving hospital had done no work in the course of the 2 years; in the earlier study the corresponding figure was 22 per cent. Apart from the nature of the illness responsible for admission to hospital, the factors which most influenced work record after discharge were age, nature of employment, and the quality of home in which the men lived. The proportion with good records tended to diminish with age. Of men who had been engaged in non-manual work when they were admitted to hospital, 74 per cent. worked for at least 18 of the 24 months after discharge; but of unskilled labourers, only 56 per cent. As before, subsequent work performance was more closely related to nature of employment than to the clinician's estimate of future working capacity. And, in general, the better the patient's home, the better the prospect of his return to work.

The assistance offered to the men in this later survey was of many kinds. Sometimes it took the form of encouraging a reluctant patient to persevere with treatment, sometimes of arranging, with the agreement of his family doctor, for the patient's re-admission to hospital. More often the help was social rather than medical, its nature, as described in the body of the report, involving extensive contacts with the hospital almoner service, the Corporation Welfare Department, the local health authority and officers of the Ministry of Labour. These efforts undoubtedly made life less wretched for some of

the men and helped into stable employment a certain number who would almost certainly have been unable to attain it without help of this kind: there is scope in Scotland for the development of a wider range of effective after-care services.

But when the broad results obtained in the present study are compared with those obtained earlier, it is clear that the efforts made have scarcely influenced the overall picture, as measured either by the proportion who had at the end of 2 years maintained the improvement initiated in hospital or by the employment record of the men after discharge. The main reasons for failure are probably to be found in the fact that many of those included in the study exhibited gross pathology and often suffered from long-standing disease. Many of the pathological changes were irreversible and, similarly, much of the social pathology encountered was of long standing and largely also irreversible. It was realised in the earlier report that inevitably much devoted and highly skilled treatment could have little chance of restoring working capacity. Sometimes relapse was due to lack of intelligence or to the patient's unwillingness to adhere to lines of treatment, but too often, even where a reasonable degree of recovery was possible, permanence of benefit was curtailed by poor social environment, at home or at work. Unsuitable work was the largest single social factor in producing the breakdown that brought these patients to hospital and return to such work could be disastrous. Occupational factors seemed to press with special force on patients between the ages of 45 and 64 and contributed heavily to breakdown among those treated for disease of the respiratory and cardio-vascular systems.

The transition from hospital ward to ordinary living and working environment is often a severe test, yet, as in the former series, only 4 per cent. of those men discharged from acute medical wards enjoyed a spell in a convalescent home after leaving hospital. It was estimated that perhaps as many as one-third of the men would have benefited from a short period of organised convalescence at a 'fitness' or 'rehabilitation' centre; such a centre, working effectively with other social agencies, could do much to promote the wellbeing and working efficiency of many patients discharged from hospital.

Other points re-emphasised in this second study included the

importance of seeking to deal with the early stages of disability, while the prospect of functional recovery is still good; and the contribution to recovery made by a good home background and a reasonable level of housing. The most important new point to emerge was the failure to influence appreciably the long-term performance of these men by enlisting for their aid the existing range of social services. These services appear to be inadequate for the purpose. It would be unrealistic to expect too much in the way of long-continued improvement in view of the severe pathology encountered, social as well as clinical, but it should not be impossible to obtain better results than those here recorded—even given the existing type of case—by the development of efficient rehabilitation and after-care services, together with an intensified approach to the resettlement in work of disabled men.

3

In Dundee, the study embraced 400 patients, 300 male and 100 female. All the patients lived in or near an urban environment, the great majority in Dundee, but 53 of the males in Arbroath. One important difference from the Glasgow and Aberdeen studies was that this Dundee series included no one over the age of 60.

Twenty-seven per cent. of the patients were treated for respiratory disease, a proportion higher than in either of the other surveys; 24 per cent. for cardiovascular disease; 13·5 per cent. for disorders of the digestive system and the others for a wide range of conditions. Fully two-thirds suffered from diseases likely to be of a chronic or recurrent nature. More than half of them had already had one or more periods of in-patient treatment during the previous 7 years and among the female patients the proportion was even higher.

Relatively many of those treated in Dundee (27 per cent. of the males and 42 per cent. of the females) had a period of convalescence before returning home: this was usually of only one week's duration, rarely of two weeks. Some 20 per cent. of the patients treated were transferred to other hospitals for specialised investigation.

On discharge from hospital, 12 per cent. of the patients were regarded as 'cured' by the clinicians who had looked after them, 68 per cent. as 'improved'; the others were discharged 'condition unchanged' or, in a few cases, 'worse'. Many had a degree of residual disability on leaving hospital. The clinician in charge estimated that nearly one-third of them should be fit for return to work within three weeks of leaving hospital and regarded the job in which the patient had been employed as suitable in 69 per cent. of cases; modification of existing employment or change to new work was thought to be required in 18 per cent. of cases, while 13 per cent. were regarded as unfit for work.

Three months after discharge from hospital the proportion regarded as improved had fallen from 80 per cent. to 72 per cent. and by the end of 2 years to 60 per cent. Within 2 years of leaving hospital, 55 (14 per cent.) of the original 400 patients, 39 male and 16 female, were dead.

Over the 2 years of the survey 136 (34 per cent.) of the men and women studied were re-admitted to hospital, the proportion of re-admissions being equal in the two sexes. Of the 136, 109 were re-admitted on one or two occasions, 22 on three or four occasions and 5 (all males) on five or more occasions.

Of 302 patients eligible for National Insurance benefit who were seen in their homes 2 years after leaving hospital, 175 (135 males and 40 females) had been in receipt of insurance benefit after the initial convalescence period—65 for periods of up to one month, 75 for periods between one month and six, 20 for periods between six months and one year, and 15 for over a year; in this last group 10 of the cases were females. Forty-five patients (31 males and 14 females) seen at the end of the survey had either retired, mainly on health grounds, or had not at any time been considered fit for employment since discharge from hospital.

It was considered that 307 patients became fit for work at some time in the course of the 2 years after leaving hospital, though often their fitness lasted for only a short period; about one-quarter regained fitness within three weeks of leaving hospital, nearly two thirds by the end of three months and three-quarters at the end of a year. Two hundred and ninety-five actually returned to work, and of these 183 returned to, and remained

in, their former occupation. Of the 35 women in the study originally classified as being engaged only in housework, six later took outside jobs, while six were too ill even to return to modified home duties.

The occupation to which they returned after leaving hospital was found to be reacting adversely on from 10 to 21 per cent. of male patients, the higher figure being recorded three months after discharge; among female patients the figure was much lower, ranging from 2 per cent. to 6 per cent., and reached its height two years after discharge. The occupational factors which seemed to be of heaviest weight were responsibility, tempo of the work, hours of employment, degree of physical exertion, atmospheric pollution and exposure to climatic changes. Ten per cent. of the male patients required, and were able to get, modification of their work; almost all of these were skilled tradesmen. Among the unskilled and semi-skilled modification was rarely possible; if they were unable to do the job as it stood they had no alternative but to give it up. Two years after leaving hospital 8 per cent. of the men and 6 per cent. of the women still required modification of work. The reasons most frequently put forward for persevering in an unsuitable job were difficulty in getting another and the drop in wages which change usually involved.

Only 23 patients (19 males and 4 females) were registered under the Disabled Persons (Employment) Act during the 2 years of the survey, but of the original 400 patients, 64 (53 males and 11 females) were on the Disabled Persons Register 2 years after leaving hospital; this represented roughly 50 per cent. of those with marked or moderate disability. Fully 35 per cent. of the men on the register were in employment. Patients were sometimes reluctant to register under the Act until severe disability made placement difficult.

In 2 or 3 per cent. of homes there was some tension, and occasionally open discord, between the patient and his family. Financial difficulties arising directly from ill-health were encountered in about one-sixth of cases, but frank hardship was present in less than 2 per cent. Social agencies were but little used. The hospital almoner saw about 6 per cent. of the patients while they were still in hospital, while 4 per cent. were referred back to her in the course of domiciliary visits.

Only four patients were referred from hospital to the Ministry of Labour for resettlement in work. Two or 3 per cent. of the patients had recourse to miscellaneous agencies from which money payments could be obtained, while a similar proportion were provided with home helps by the local health authority.

It was estimated that 131 (33 per cent.) of the patients studied derived lasting benefit from their hospital treatment and that 156 (39 per cent.) derived some benefit from it, while in 70 cases (17·5 per cent.) little or no benefit was obtained: in the remaining cases no assessment on this score was made.

4

In Aberdeen, as in Glasgow, the investigation was confined to male patients, but the group studied included patients living in country districts as well as in towns and some suffering from surgical and orthopaedic disabilities as well as patients from acute medical wards. The men were followed up for only one year, not two as in the case of Glasgow and Dundee. Two hundred and fifty-two of the 502 men had treatment for 'medical' conditions, of which the most numerous were coronary heart disease (42), bronchitis (21), diabetes (19) and cerebral haemorrhage (17). The chief groups of surgical cases in the series were those treated for peptic ulcer (37), appendicitis (29) and hernia (24): and the orthopaedic conditions were chiefly fractured limbs, acute backache and laminectomies. The men were visited in their homes one, three and twelve months after leaving hospital and an attempt was made to measure past and present health, domestic circumstances, the extent of use of social services and such factors as family background, housing and work history. In assessing progress, three main criteria were used—capacity for movement, employment status and a 'health score' calculated as described in the text. Sixty per cent. of the admissions to medical wards represented recurrences of previous complaints as compared with 37 per cent. of the surgical admissions. Up to about the age of 60, the patients admitted with surgical and orthopaedic disabilities had enjoyed, on the whole, better health prior to this spell of treatment than had 'medical' cases.

When the men were seen at home one month after leaving

hospital some of the problems encountered clearly ante-dated hospital treatment, some were related to it. Finance was a common source of difficulty at that time and worry—worry about the outcome of their medical condition, about the difficulties associated with their housing situation, about future working capacity; 28 men were afraid they would lose their job, 24 had begun to doubt their fitness for return to their old employment; 4 had started work, but had been paid off within a few days; a few were mentally disturbed, were drinking heavily or had become involved in family disputes; but in the main the attitude of the men was still essentially one of hope that everything would come all right in the end and the first month after discharge was, in general, one of progressive improvement, though even of the men who had jobs waiting for them, less than one-third had returned to work at the end of the month.

Within three months of discharge from hospital, 21 of the patients died, including 16 (6 per cent.) of those treated in medical wards, a figure lower than that encountered in the Glasgow and Dundee studies. At the end of three months, 55 of the 447 surviving patients seen in their own homes were still housebound; by that time two-thirds of those under 65 years of age who had jobs available were back at work, as were one-sixth of those under 65 who had no job waiting for them; but 99 of the men were still on sickness benefit and 13 on unemployment benefit. In only six cases was retirement from work a direct outcome of the spell of hospital treatment on which the study was based. Among factors of importance in determining probability of return to work within three months were age, nature of employment (the skilled men with lighter jobs having the better prospects), general level of health before admission to hospital, duration of stay in hospital and degree of mobility on discharge. Ninety-six per cent. of the men treated for appendicitis were back at work within three months of leaving hospital, as were 67 per cent. of those treated for diabetes, 37 per cent. of those treated for bronchitis and 16 per cent. of those treated for coronary disease.

Within one year of discharge from hospital 51 (10 per cent.) of the men had died and of the 451 survivors, 25 per cent. had already been re-admitted on one or more occasions; the

re-admission rate was closely related to previous health record. Age for age, the proportion of men found to be fully recovered one year after leaving hospital was lower among those treated in 'medical' wards than in 'surgical', perhaps because more of the former suffered from chronic conditions, such as bronchitis.

Of the 385 men under the age of 65 who survived for a year after leaving hospital, 292 (76 per cent.) were at work at the end of that period, 54 (14 per cent.) were on sickness benefit and 39 (10 per cent.) were on unemployment benefit. The patients least likely to be in employment one year after leaving hospital were the older men with a history of previous ill health, often unskilled workers with heavy jobs and with little security of employment. Altogether, 86 (29 per cent.) of the men at work had changed from their pre-admission employment; it was estimated that in 36 cases change or modification of employment was dictated by the illness responsible for admission to hospital.

Worries about employment continued to rank high among the problems current at the end of the year. Some men were still worried about their health and the probable outcome of their illness, their anxieties on this score apparently aggravated in some cases by lack of medical explanation. Some had domestic problems, largely associated with restricted mobility or restricted capacity for self-care. Eleven had become involved in serious family disharmony, often apparently related in some way to their hospital admission; and 11 had financial worries. Of just over 250 patients who reported problems of one kind or another at some point in the course of the year, only 30 had been referred to the hospital almoner's department during that period. Sometimes the problems which perplexed patients were unknown to the clinician, sometimes they only emerged after the patients had passed from his view; sometimes the patient was unaware of the almoner's existence. There is room for experiment in the best use of social workers and in how to obtain better liaison between them.

Another point to emerge clearly from this study was the need for closer co-operation between hospital staff and family doctor in giving vocational guidance to the patient; this might well be associated with a more intensive follow-up review of clinical progress. One quarter of the men under 65 years of age who survived for a full year after leaving hospital were not yet

back at work at the end of the year, while nearly half had been off work for more than three months. In only one case out of four had the Ministry of Labour been responsible for placing in employment patients who had taken up new work. One of the major conclusions drawn from the study was that a full scale rehabilitation unit to serve the north-east of Scotland would be of great value in improving the rate of return to fitness and to employment: there is need for more attention at an early stage to potential employment difficulty and for more skilled vocational guidance to vulnerable patients. 'We would like', say the reporters, 'to see a systematic follow-up, jointly by hospital and general practitioner, of all patients whose health and occupational history suggest the likelihood of a resettlement problem'.

5

As already explained, the investigators who carried out these studies were encouraged to shape their approach in the light of their own particular interests and local circumstances, while adhering to the broad lines of the original report. Glasgow and Dundee are heavily industrialised, Aberdeen less so, and the Aberdeen study included patients living in the countryside as well as the city; further, the Aberdeen sample included some patients treated in surgical and orthopaedic wards, whereas those in the Glasgow and Dundee studies were drawn exclusively from acute medical wards. The Glasgow patients, like those in Aberdeen, were all men and were of all ages—though the Glasgow group was the older of the two; the Dundee sample, on the other hand, included some women and excluded all who were over 60 years of age at the time of admission. The follow-up after discharge from hospital was continued for 2 years in Glasgow and Dundee, but only for one year in Aberdeen.

These local variations make precise comparison between the three areas difficult, but they add breadth to the findings. The Glasgow results, obtained from a series of patients rather older but very comparable in severity and background to those on whom the earlier report, *Hospital and Community* was based, gave results no better than before. The Dundee experi-

ence, with a similar disability picture (save for a relative excess of respiratory disease), but with an appreciably younger group, was at first sight better than that of Glasgow, but, when corrected for difference in age, was not so. In Aberdeen the position was rather more satisfactory, even after allowance for the fact that the patients from surgical and orthopaedic wards, who comprised together about half of those studied, fared better than those from medical wards. Mortality within three months of discharge was lower in the Aberdeen series; the proportion back at work at the end of the three months was higher than in Glasgow, though lower than in Dundee, probably largely a reflection of age differences between the groups.

The broad results of the studies are gloomy enough in all three areas: they parallel only too closely those reported in 1954. With so many patients exhibiting advanced disease, it would be unrealistic to expect too much permanent benefit from hospital care. Real long-term benefit can come only from more intensive attack on the earlier stages of disease along lines already discussed in *Hospital and Community*. The effective use of existing hospital provision is seriously handicapped by the lack of acceptable facilities for terminal care. Even where sustained improvement is unlikely, the existing social services, buttressed by an effective after-care organisation, should be capable of making life easier for many. Some scope for improvement has been indicated in the text. The hospital almoning service is not always used as effectively as it might be, nor does the patient in need always obtain full benefit from such existing social services—statutory and voluntary—as could be available to him, partly because he is not put in touch with them. Too many patients, and their social needs, are lost sight of on discharge from hospital. There is, in particular, need for a more effective bridge between the almoning resources of the hospital and the after-care service of the local health authority; the whole question of effective deployment of social help merits review. Not all patients discharged from hospital need help of this kind, but many do.

The Glasgow study now reported makes it clear that, valuable as they can be in providing much-needed succour of a short-term kind, such social services as are at present available

will not greatly affect the results of hospital care, viewed over a period of two years, whether measured in terms of maintenance of clinical improvement or in terms of employment record. There are many who, though unable to return to their old job, or having no job to which to return, may yet have years of useful working capacity ahead of them if they can be helped to find suitable work, especially—and this is often of crucial importance—if they can be found suitable work quickly, for the economic future of many is finely balanced and it is fatally easy for a man at that stage to drift into demoralisation and unemployability. The Disabled Persons (Employment) Act, useful as it is in some cases, is not in practice the complete answer to this situation. Not all who need help are advised to register under the Act and nowadays some are reluctant to register, save as a last resort, often too late. Even when a promising job can be found or training in suitable work secured (which is not always), it may well be that the man discharged from hospital finds the transition to working conditions too severe. There is urgent need in Scotland for the development of rehabilitation or fitness centres, day or residential, aiming at steady restoration from invalidity to reasonable stability of health and working capacity; and closely geared, not only to the statutory machinery for finding suitable work for disabled people, but to the whole range of social services available to the community, statutory and voluntary alike. There is need, as the Aberdeen reporters point out, for more attention at an early stage in recovery to potential employment difficulties and for more skilled vocational guidance to specially vulnerable patients. Along these lines much is possible.

T. Ferguson.

[1] *Hospital and Community.* Ferguson, T. and MacPhail, A. N. Published for the Nuffield Provincial Hospitals Trust by Oxford University Press, 1954.

I

GLASGOW STUDY

by A. P. CURRAN and T. FERGUSON

I

The Scope of the Present Study

THE original Glasgow study was based on data obtained while the men were still in hospital, supplemented by facts elicited from visits made to them in their homes three months and again two years after they returned home. It was a simple record of events, designed to see how the men fared under their prevailing social and environmental conditions: there was no conscious effort on the part of the investigators to render them any special assistance. It soon became clear in the course of the study that even such sources of social help—official and unofficial—as might have been expected to be available were not in fact being widely used.

Accordingly, it was considered worth while to observe a further parallel series of men, treated in similar hospital wards, to see whether appreciably better results could be obtained by seeking to harness such social help as was available in the community; or, at least, if the results showed no improvement, to try to find out whence the failure came—whether from failure to use facilities that were available, or from the unavailability of help of the kind required.

In the original study two of the hospitals from which patients were drawn were located in the City of Glasgow, the two principal teaching hospitals; the other two were acute hospitals serving industrial districts some miles from the city. Since in this second experiment it was proposed to keep closer touch with the patients and to seek help from various sources on their behalf, it seemed better to confine the study to patients resident in one administrative area and, in order to restrict travelling to a minimum, the City of Glasgow was chosen. The patients studied were drawn from three hospitals—the two principal teaching hospitals, as before, together with one in the southern part of the city which was believed to treat cases similar in type and severity to those dealt with in the two provincial hospitals included in the earlier study. Altogether 427 men were included

in the second study—175 consecutive patients of Glasgow domicile from one of the main teaching hospitals and 100 from the other, together with 152 from the hospital in the south side of the city. All the patients were seen with a member of the clinical staff while still in hospital and information obtained about the probable cause of the breakdown that had brought them to hospital, as well as the clinician's estimate of their prospects of early fitness for work. With the few exceptions shortly to be mentioned, at least three domiciliary visits were made to each patient after discharge—the first one month after leaving hospital, the second three months after discharge and the third at the end of 2 years.

One month after leaving hospital four of the 427 patients could not be traced and four others were living away from the city; two months later, these figures were respectively, 5 and 4, while two years after discharge they had risen to 6 and 14—a total loss of some 5 per cent., not by any means excessive and not likely to prejudice the validity of the results. Information was obtained about the progress, or lack of progress, of the others and this material will be examined in the following chapters.

2

The Patients as seen in Hospital

1

Age distribution

All the patients studied were males: on admission to hospital 59 (13·8 per cent.) were between 15 and 34 years of age; 69 (16·2 per cent.) between the ages of 35 and 44; 91 (21·3 per cent.) between 45 and 54; 107 (25·1 per cent.) between 55 and 64; 80 (18·7 per cent.) between 65 and 74; and 21 (4·9 per cent.) 75 years or over. While there was no very wide difference in age distribution between the men studied in this and in the earlier survey, a lower proportion of the new group were under 35 years of age—13·8 per cent. as against 21·6 per cent.—and a correspondingly higher proportion were over 65 years of age, 23·6 per cent. as against 17·8 per cent. In general, the demand for hospital treatment increases with age; in this series the age group between 55 and 64 years was that marked by the heaviest hospital admission rate in relation to population; 12·2 per cent. of the male population of the city over the age of 15 fell into this group, as compared with 25·1 per cent. of the patients who received hospital care. There was considerable variation between the three hospitals from which the patients were drawn in this matter of age distribution; in the two main teaching hospitals the proportions under 45 years of age were respectively 31 per cent. and 52 per cent., while in the southern hospital it was lowest of all, 26 per cent. The proportions 65 years old or more on admission to hospital were respectively 25 per cent., 17 per cent., and 26 per cent.

2

Types of illness

The broad types of illness from which the patients suffered are shown in Table 1 according to the age of the patients

affected; this classification of diseases is amplified in Appendix 1.

TABLE 1. *Nature of disease in relation to age of patient*

Nature of disease	*Age of patient*					*Total*
	15–34 *years*	35–44 *years*	45–54 *years*	55–64 *years*	65 *years and over*	
Infective diseases	3	—	1	—	4	8
Neoplasms	1	—	6	6	7	20
Diseases of endocrine system	9	5	3	3	2	22
Diseases of blood	1	—	2	2	2	7
Psychoneurotic illness	—	2	—	—	—	2
Diseases of nervous system	3	5	7	7	12	34
Diseases of circulatory system	8	21	34	41	35	139
Diseases of respiratory system	5	7	12	24	17	65
Diseases of digestive system	18	22	16	11	11	78
Diseases of genito-urinary system	2	2	2	—	1	7
Diseases of skin and cellular tissue	—	—	—	—	—	—
Diseases of bones and joints	1	2	—	3	2	8
Congenital malformations	—	—	—	—	—	—
Injuries and acute poisoning	4	—	1	3	1	9
Ill-defined conditions	2	2	7	5	6	22
Other diseases	2	1	—	2	1	6
	59	69	91	107	101	427

The illnesses most frequently recorded in this series were circulatory diseases, which accounted for nearly one-third of the total, diseases of the digestive system (about 18 per cent.) and diseases of the respiratory system (15 per cent.). This distribution is in close accord with that in the earlier series, though the present group contained relatively more patients under treatment for diseases of the circulation and relatively fewer for diseases of the nervous system. Now, as then, patients under treatment for digestive disease were, in general, drawn from younger age groups than the average run of patients. As in the earlier study, a relative excess of patients treated for digestive disease was found among skilled manual workers and a relative excess in the proportion treated for respiratory disease among unskilled labourers. The proportion of patients

who received treatment for digestive disease was fairly constant in the three hospitals from which the cases were drawn.

3

Duration of stay in hospital

Of the patients treated, 5·2 per cent. remained in hospital for a period not exceeding 6 days; 18·0 per cent. for from 7 to 13 days; 20·4 per cent. for from 14 to 20 days; 20·4 per cent. for from 21 to 28 days; 33·3 per cent. for from 29 to 61 days; and 2·8 per cent. for more than two months. There was little difference in duration of stay between this group and the earlier; in the former series the proportion who stayed in hospital less than a fortnight was rather higher than in this (29·8 per cent. against 23·2 per cent.), but so was the proportion remaining for more than two months (4·8 per cent. against 2·8 per cent.): average duration of stay was very slightly longer in this study than in the earlier.

The length of stay in hospital varied considerably with the age of the patient; of patients under 45 years of age 31 per cent. stayed in hospital less than a fortnight, compared with only 20 per cent. above that age.

TABLE 2. *Duration of stay in hospital in relation to age of patient*

Duration of stay in hospital	*Age of patient on admission*		
	−44 years (128)	45–64 years (195)	*65 years +* (101)
	%	%	%
1–13 days	31	20	20
14–20 „	22	18	23
21–28 „	20	23	17
29–61 „	26	34	38
62+ „	1	5	2
	100	100	100

Duration of stay in hospital was notably above average among patients suffering from diseases of the circulatory system (of whom 56 per cent. remained in hospital for more than

28 days). Duration of stay was shorter than average, on the other hand, among patients suffering from endocrine disturbances (mostly diabetes), from psychoneurotic illness and from intoxications; less than 10 per cent. of the patients in these groups were in hospital for more than 28 days.

Of the patients seen in hospital, 62 per cent. were admitted to the wards directly on the recommendation of their own doctor, 24 per cent. were admitted from the out-patient department, about one quarter of this fraction being re-admissions, while the remaining 14 per cent. were referred from a variety of sources—brought by the police, emergencies of one kind or another, or transfers from other hospitals or institutions.

4

Previous in-patient treatment

Of the patients treated in hospital no fewer than 165 (38 per cent.) had already received hospital in-patient treatment within five years of their present admission to hospital, often more than once, while many of the others had had hospital out-patient treatment or clinic treatment during the same period. This proportion of patients who had received previous in-patient treatment, 38 per cent., is considerably higher than that (26 per cent.) found in the earlier study and lends colour to the view that a small number of people in the community contribute excessively to total hospital load.

The proportion of patients who had had in-patient treatment during the five years preceding the admission on which the present study is based was high among those suffering from respiratory disease (55 per cent.), from disease of the endocrine system (45 per cent.) and from cardiovascular disease (42 per cent.); it was relatively low (31 per cent.) among those suffering from alimentary disease.

5

Clinical assessment of preventable factors in patients' breakdown

While the patient was still in hospital it was estimated by the clinician in charge of the case that the breakdown in health that had brought the man to hospital could be regarded as preventable in 14·0 per cent. of cases, a figure higher than that

returned in the earlier study (10·3 per cent.); the proportion was appreciably higher in one of the hospitals than in the other two. The cases regarded as preventable on clinical grounds were, for the most part, those in which the patient suffered from some acute intoxication, or in which he had been grossly remiss in his observance of the regime demanded by the medical condition from which he was known to suffer. The patients in whose breakdown there was considered to be a preventable element of this kind were relatively numerous among unskilled workers and among those who were described as unemployed on admission to hospital: among skilled (manual and non-manual) workers, on the other hand, the proportion regarded as preventable was much lower. The proportion of cases in which breakdown was regarded as preventable was high among patients in the younger age groups; thus, 27 per cent. of patients under 35 years of age were regarded by the clinicians as having a major preventable factor, but only 8 per cent. of patients over 65 years of age.

6

Results of treatment

The results of treatment were assessed by the physician in charge of the case when the patient left hospital: 3·5 per cent. were regarded as 'cured', 82·3 per cent. as 'improved,' 13·8 per cent. as 'condition unchanged' and 0·4 per cent. as 'worse'. These figures were in reasonable agreement with those found in the earlier study, though in this series more of the patients were classified as 'improved' and fewer as 'cured': in this study 85·8 per cent. fell into one or other of these two categories, in the earlier, 82·4 per cent. The proportion of patients discharged as 'cured' was highest in the 15–34 age group. Ninety per cent. of patients in the groups treated for cardiovascular, respiratory and endocrine diseases were discharged as 'improved'; not unexpectedly, 60 per cent. of those treated for neoplasm were discharged as 'condition unchanged'.

Inevitably a high proportion of the patients still had some residual disability when they left hospital, generally a legacy from their recent illness, but sometimes due rather to some other pathological condition from which the patient suffered;

occasionally both contributed to the disability. It could generally be assumed that this residual disability was such as would be relieved by a period of convalescence under good conditions at home or in a convalescent home. Patients suffering from cardiovascular disease and from organic disease of the nervous system were among those who were most frequently left with some disability of this kind.

7

Destination on discharge from hospital

On discharge from hospital 354 (82·9 per cent.) of the patients treated returned directly to their own homes: 16 (3·8 per cent.) were admitted to convalescent homes; 44 (10·3 per cent.) were transferred to other hospitals, or, in 10 cases, to a surgical ward in the same hospital. Of the remaining 13, 4 went to live with relatives, 4 to common lodging houses, 3 to accommodation provided by the local authority, 1 to lodgings in a private house and 1 to an approved school. In this series of cases the proportion of patients returning directly to their own homes was rather lower than in the earlier study (82·9 per cent. against 89·4 per cent.), the difference being largely accounted for by a higher number of inter-hospital transfers; the proportion fortunate enough to be given a spell of convalescent care was again low, 3·8 per cent. as compared with 4·1 per cent. in the former series; of patients treated for cardiovascular disease, 5 per cent. had a spell of convalescent home treatment before returning to their own homes.

8

Patients requiring continuing supervision

All but 7 of the patients were regarded by the physician who had looked after them in hospital as being in need of continuing care after they went home. Those patients naturally came under the care of their family doctor, reinforced where necessary by the district nurse; in addition, it was proposed that in 196 cases (69·3 per cent.) the patient should remain under the supervision of the hospital or of some special clinic.

9

Estimate of probable fitness for early return to work

When the patient left hospital the physician in charge was asked to make a provisional estimate of his prospect of being able to return to work within three weeks of discharge. Apart from those already retired and those who had no employment on admission, 37·9 per cent. of the men were considered to be likely to be able to return to their old work within three weeks of leaving hospital, 2·3 per cent. as likely to be able to return to some work within that period, though probably not to their former work, and the remainder as likely to be still unfit for any work three weeks after leaving hospital. These figures are in close agreement with the experience of the earlier study, where 40 per cent. of the men were considered to be likely to be fit for return to their old job within three weeks of leaving hospital and a further 3·6 per cent. as likely to be fit for some alternative employment. Not surprisingly, the proportion of cases regarded as likely to be fit for work within three weeks tended to diminish as the age of the patient increased. As it happened the estimate, made on clinical grounds, of the proportion of men in this series likely to be fit for return within three weeks was lower among those who were employed as skilled and semi-skilled manual workers than among non-manual workers or unskilled manual labourers.

TABLE 3. *Clinician's estimate of probable fitness for early return to work in relation to nature of occupation.*

Estimated fitness for return to work three weeks after discharge	*Nature of Occupation at time of admission to hospital*					
	Non-manual (Skilled)	*Non-manual (Unskilled)*	*Manual (Skilled)*	*Manual (Semi-skilled)*	*Manual (Unskilled)*	*All employed men*
Fit for old work	26	21	35	20	24	126
Fit for alternative employment	1	—	2	1	2	6
Not fit for any work .	28	27	58	39	23	175

The proportion of cases regarded as likely to be able to return to their old job within three weeks of leaving hospital was high among patients who had been treated for diseases of the endocrine system (65 per cent.) and for alimentary diseases (58 per cent.); lower among patients treated for respiratory disease (38 per cent.) and for disease of the nervous system (29 per cent.); and particularly low among those treated for cardiovascular disease (15 per cent.).

The actual position in relation to work one month after leaving hospital was that of the men seen in their own homes at that time 87 had returned to their old jobs, 9 had taken up other employment and 225 were not yet doing any work, this latter figure including 53 who had already retired before admission to hospital and 6 who had decided to retire on discharge.

3

Three Months after Leaving Hospital

1

Deaths within three months of discharge

Thirty-eight of the 427 men (8·9 per cent.) included in the study died within three months of leaving hospital. Of the survivors, 23 (5·4 per cent.) were back in hospital again when their homes were visited three months after discharge, 8 (1·8 per cent.) were in other institutions—convalescent homes, accommodation provided by the local authority, prison, approved school; 4 (0·9 per cent.) had gone to live outside the area and 5 (1·2 per cent.) could not be traced. The others were seen in their own homes. The idea was to observe the conditions in which the men lived, to learn from them in their own natural setting about their work and their problems, to estimate so far as possible the part played by social, economic and environmental factors in the causation of their recent breakdown in health and to find out how they had fared in relation to work since leaving hospital. These visits were made with the approval, often with the active help, of the family doctors concerned, and in some cases these doctors furnished valuable 'background' information about their patients.

Of the 38 men who died within three months of leaving hospital, 14 had been under treatment for cardiovascular disease, 10 for neoplasms, 6 for disease of the respiratory system, 5 for organic disease of the nervous system and one each for endocrine disturbance, alimentary disease and pulmonary tuberculosis. In 34 of the 38 cases the recorded cause of death was the condition for which treatment had been received in hospital. Of the patients who died, 4 were under 35 years of age, 2 were between the ages of 34 and 44, 9 between 45 and 54, 9 between 55 and 64, and 14 over 65. Twenty of the 38 were unemployed or already retired from work at the time of admission to hospital, 5 were non-manual workers (2 of them skilled),

6 were skilled manual workers, 3 semi-skilled and 4 unskilled manual labourers. Eight had been treated in hospital for less than 14 days, 8 for from 2 to 4 weeks, and 22 for more than 4 weeks, the longest for 77 days: 27 had been discharged from hospital 'improved', 10 as 'condition unchanged' and 1 as 'worse'. Twenty had had at least one other spell of in-patient hospital treatment during the 5 years preceding the admission on which this study was based, while 12 had out-patient treatment during the same period. Six of the men died within one week of leaving the hospital ward and 13 others within one month, 7 between one month and two months and 12 between two months and three months after discharge; 10 died in the hospital in which they were originally treated, 13 in other hospitals, 1 in a private nursing home, and 14 in their own homes.

2

Those re-admitted to hospital within three months

Of the 23 men who were back in hospital three months after discharge, 10 were under treatment for cardiovascular disease, 3 each for neoplasm and infective conditions, 2 each for organic nervous disease and ill-defined conditions, and 1 each for endocrine disturbance, respiratory disease and senile deterioration. Nine had been re-admitted to the hospital in which they were originally treated, 14 to other hospitals. Three of the men re-admitted were between the ages of 15 and 34, 5 between 45 and 54, 6 between 55 and 64, and 9 over 65 years of age: 10 were described as retired or unemployed at the time of the admission to hospital on which this study is based, 5 were non-manual workers, 3 skilled manual, 4 semi-skilled and only 1 an unskilled labourer.

3

The condition of men seen at home

When they were visited in their own homes three months after leaving hospital, 16 (4·6 per cent.) of the men were regarded as 'cured', 260 (74·5 per cent.) had continued to

improve; the condition of 51 (14·6 per cent.) was substantially the same as on leaving hospital, still far from well; and 22 (6·3 per cent.) had obviously deteriorated since returning home. There were, of course, wide variations from one clinical group to another in the maintenance of improvement, which was highest among men who had been treated for alimentary disease (89 per cent.) and for endocrine disturbance (85 per cent.). Of those treated for cardiovascular disease, 78 per cent. of the men seen in their own homes three months after leaving hospital had continued to improve, as had 70 per cent. of those treated for respiratory disease and 58 per cent. of those treated for organic disease of the nervous system: on the other hand only 22 per cent. of the survivors treated for neoplasms had continued to improve. In this series, then, 79 per cent. of the ex-patients seen in their own homes three months after leaving hospital had continued to improve, a figure which compares favourably with that in the earlier series, 65 per cent. But in many other cases the clinical picture had deteriorated and in this connection it must be remembered that, in addition to the 349 patients seen in their own homes three months after discharge, 38 had died and 23 were back in hospital; so that altogether 276 (67 per cent.) of the 410 men seen in hospital for whom information was available showed continued improvement three months after leaving hospital.

The proportion of men who were found to have continued to improve was highest among those under 45 years of age (91 per cent. of those seen in their own homes), appreciably lower among those between 45 and 64 years of age (70 per cent.); of those over 65 years of age, on the other hand, 81 per cent. had continued to improve. When the figures were examined in relation to nature of employment at the time of admission to hospital, the group of non-manual workers was found to show the highest proportion maintaining improvement at the end of three months (87 per cent.); among skilled manual workers the figure was 82 per cent.; among semi-skilled workers, 74 per cent.; and among unskilled labourers, 84 per cent. Among men who had already retired from work, 80 per cent. had continued to improve, but among those described at the time of admission as 'unemployed', only 52 per cent. had maintained the improvement initiated in hospital.

4

The position in relation to work

Seventy-nine of the 349 men seen in their own homes three months after discharge from hospital (22·6 per cent.) had not been working for some time before their admission to hospital—50 because they had already retired, 22 because they were unfit for work and 7 because they had been unemployed through inability to get a job. The remaining 270 had been in employment before admission. Of these 270, 128 were found to be back at work in their old job three months after leaving hospital; the remaining 142 had not returned to their old job, though 34 were working in other jobs: 108 were not yet working. The 142 men who had not returned to their old job attributed this circumstance to a variety of reasons: thus, 83 felt that they were still unfit for work and a further 11 had decided to retire following their illness; 24 regarded their old job as unsuitable and 9 wanted a change for other reasons; 15 had fallen out of employment on account of their illness. Altogether, therefore, 187 of the patients seen in their own homes three months after discharge from hospital were not in employment at that time—79 who had not been working previous to admission *plus* 108 who had been in employment before. One man who had not been working for some time before admission was found to be in employment (in unskilled non-manual work) three months after discharge.

The nett result was that about 47 per cent. of the men seen in their own homes three months after discharge from hospital were already back at work—or, excluding 50 who had already retired before admission to hospital, 55 per cent; the corresponding figures in the earlier study were 62 per cent. and 71 per cent. Of men between the ages of 15 and 64 years, the proportion back at work three months after discharge from hospital was 53 per cent. as against 61 per cent. in the earlier study.

In addition to the 163 men seen in their own homes who were actually in employment three months after leaving hospital, 12 had returned to their old job or to alternative work after leaving hospital but were not in employment when visited, having

found themselves unable to continue. Three of these men who had to give up work had been treated for organic disease of the nervous system, 2 for cardiovascular, 2 for respiratory and 2 for alimentary disease; 4 of the 12 were over 65 years of age, 3 between 55 and 64 years, 4 between 45 and 54 and 1 under 45. On admission to hospital 5 of the 12 had been in non-manual work of unskilled type, 3 had been skilled artisans, 2 semi-skilled, and 2 unskilled labourers.

Of the 349 men seen in their own homes three months after leaving hospital, only 128 (37 per cent.) were working in the jobs in which they had been engaged on admission to hospital. Of the 26 men who had been treated for organic disease of the nervous system, 5 were back at their old work; of the 111 treated for cardiovascular disease, 26; and of the 53 treated for respiratory disease, 20. On the other hand, 13 of the 20 treated for endocrine disorders were back at their old jobs, as were 40 of the 75 treated for alimentary disease. Above the age of 45 years the proportion of men back at their old job fell steeply. The proportion back in old work was highest among non-manual workers (especially those in skilled jobs): among those engaged in manual work it fell as the degree of skill diminished, being lowest of all in the group of unskilled labourers.

Of the 34 men who, three months after leaving hospital, were working, but not in their old jobs, no fewer than 15 had been under treatment for cardiovascular disease and 7 for alimentary disorders. The proportion in alternative employment was highest in the age group 45–54 years; above the age of 55, few found alternative employment and above the age of 65, none. The proportion who had taken up other employment was higher among unskilled labourers than among skilled manual workers, and lowest among non-manual workers, especially those in the more skilled types of job.

Fifty-four per cent. of the men seen in their homes three months after leaving hospital were regarded as fit for work at that time; the proportion 'fit' naturally decreased with age, being 92 per cent. at ages under 35 but only 47 per cent. between the ages of 55 and 64. The proportion regarded as fit for work was high among those treated for alimentary disease (72 per cent.) and for endocrine disturbance (75 per cent.), but low among those treated for disease of the nervous system

(26 per cent.) for cardiovascular (40 per cent.) and for respiratory disease (49 per cent.).

Apart from those who had already retired from work at ages over 55 years, there were in the series only 6 who appeared to be quite fit for some work but not over-anxious to obtain it—2 of them under 35 years of age and 3 between the ages of 45 and 54.

5

Total time off work on account of recent illness

Of the 162 men who were in employment three months after leaving hospital, the total working time lost on the occasion of the illness for which treatment was received in hospital was less than one month in 36 cases, between one month and two months in 46, between two months and three months in 46, between three months and six months in 32, and over six months in 2 cases. Up to age 65, the amount of time lost increased steadily with age.

6

Men in unsuitable jobs

Three months after leaving hospital 11 of the men were employed in jobs that could only be viewed as unsuitable, having regard to the condition of the man and the demands of the job, and, in addition, 5 were in jobs which were unlikely long to remain suitable: the proportion of men working in unsuitable jobs three months after discharge from hospital was appreciably lower in this series (9 per cent.) than in the earlier (21 per cent.). Of the 11 men who were in unsuitable jobs, 8 had returned to their old jobs and 2 had taken up alternative employment of an unsatisfactory nature; the other had gone back to his original job on leaving hospital, but had already been compelled to lie off because of recurrent illness. Four of the 5 men in whose cases change of employment was deemed to be an urgent necessity were very willing to change if suitable work could be found for them; the other was determined to carry on with his present job.

4

How much of the Illness treated in Acute Medical Wards could be regarded as having a Major Preventable Factor

I

On clinical and social grounds

WHEN the patients left hospital the clinician in whose care they had been was asked to indicate those in which he thought there had been some preventable factor responsible for the breakdown that brought them to hospital. The clinicians estimated, doubtless mainly on medical grounds, that there was a preventable factor in 14·0 per cent. of the cases included in this series. From their study of home and working environment, the present authors were of opinion that, in addition, the cases of a further 19·7 per cent. of the 349 patients seen in their own homes three months after leaving hospital had been profoundly influenced by social or environmental factors, often far-reaching, which had made a major contribution to the breakdown in health that brought the men to hospital; so that altogether it was estimated that in about one-third of the cases there was some major preventable factor, medical or social, operating to cause breakdown in health or to interfere with recovery, a proportion higher than in the earlier group, where the corresponding proportion was one quarter. It was not always certain that these adverse factors were the whole cause of breakdown; but it is reasonably certain that, had they been eliminated, the occurrence of breakdown would have been postponed, if not entirely prevented.

The cases in which breakdown was regarded as preventable on clinical grounds was highest in the younger age groups; the peak incidence of cases regarded as preventable on social grounds fell between the ages of 45 and 54. The occurrence of breakdown regarded as preventable was more frequent among

unskilled manual workers than among skilled; this excess applied to both clinical and social factors, but was most marked in the clinical group. There was some evidence that the unfavourable showing of the unskilled group was due as much to their general social background as to the demands of their occupation as such though, of course, the two often overlapped. Patients in whose breakdown some major preventable factor had operated were drawn less frequently from homes assessed as 'good' by an experienced social worker; this applied to both clinical and social factors.

The proportion of cases regarded as having a major preventable factor is analysed in relation to clinical condition in Table 4.

TABLE 4. *The proportion of cases in the several clinical groups regarded as having a major preventable factor responsible for the breakdown in health that brought them to hospital.*

Clinical group	*Classified as preventable by clinician*	*Added on social and environmental grounds*	*Total cases regarded as having preventable factor*	*Total No. of cases in group*
Infective diseases	–	2	2	3
Neoplasms	–	–	–	7
Endocrine diseases	6	2	8	20
Blood diseases	–	–	–	7
Diseases of nervous system	–	3	3	26
Cardiovascular diseases	13	20	33	111
Respiratory diseases	2	17	19	53
Alimentary diseases	17	13	30	75
Genito-urinary diseases	1	–	1	6
Bone & joint conditions	–	2	2	8
Injuries and acute poisonings	6	3	9	9
Psychoneurotic conditions	–	–	–	1
Ill-defined conditions	2	6	8	18
Others	2	1	3	5
	49	69	118	349

2

Unsuitable work as a factor in breakdown

Of all the preventable factors which contributed to breakdown in health in the cases studied, unsuitable work was the most prominent; it was estimated to account for about one third of all the cases in which there was a preventable factor. Sometimes the fault lay in the nature or demands of the job itself, having regard to the man's condition, sometimes to the circumstances in which the work was carried out. In some cases the condition was certainly aggravated by too long continuance at work; in others earlier resort to medical advice and treatment would have limited the severity of the illness. In general, occupational factors seemed to press with special force on patients between the ages of 45 and 64, contributing notably to the breakdown of patients treated for diseases of the respiratory system and (to a lesser degree) of the cardiovascular and central nervous systems; social factors other than employment made a more important contribution to the breakdown of patients suffering from alimentary disease and endocrine disturbances.

3

The influence of other social and environmental factors

When the men were seen in their own homes three months after discharge from hospital, 250 of them were married, 62 single, and 37 widowed, divorced or separated. In 275 cases the patient was himself the householder; in 54 he was living with a relative (most commonly a son); 20 were in lodgings, including 5 in common lodging houses. In 243 the household was looked after by the patient's wife, in 26 by his mother, in 31 by some other relative, and in the remaining cases by the patient himself (26) or by someone other than a relative.

The home background in which the patient was living was assessed as 'good' in 210 cases (60·8 per cent.), as 'fair' in 104 (29·2 per cent.), and as 'bad' in 35 (10·0 per cent.). The standard of home assessment was found to be relatively low among patients who had been under treatment for diseases of the

central nervous system (where 46 per cent. were assessed as 'good') and among those treated for diseases of the respiratory system (where 53 per cent. were assessed as 'good'). There was a relationship between the level of home assessment and the proportion of men back at work three months after leaving hospital: where home assessment was 'good,' 50 per cent. of the men were found to be back at work three months after leaving hospital; where 'fair', 48 per cent.; but where 'bad', only 17 per cent. Again, standard of home assessment was related to the maintenance of improvement: where home assessment was 'good', 84 per cent. of the patients seen in their own homes three months after leaving hospital were found to have maintained the improvement started in hospital; where 'fair', 78 per cent., but where 'bad', only 51 per cent.; it was not always easy to determine which was cause and which effect.

The general atmosphere of the home was often closely mirrored by the physical condition of the house itself and by the financial circumstances of the family; thus, where the standard of home assessment was 'good', 52 per cent. of families were apparently in reasonably comfortable financial circumstances, but where 'bad,' only 3 per cent. Of the 349 men seen in their homes three months after leaving hospital, 198 (56·7 per cent.) were judged to be in comfortable financial circumstances, 144 (41·3 per cent.) in some financial difficulty and 7 (2 per cent.) to be living in poverty. Seventy-three per cent. of the men treated for alimentary disease were living in comfortable financial circumstances, as were 70 per cent. of those treated for endocrine disturbances, but only 47 per cent. of those treated for cardiovascular disease and 45 per cent. of each of the groups treated for respiratory disease and disease of the central nervous system, where often there was a history of prolonged illness and unemployment.

4

Housing

Three months after leaving hospital, five of the men were living in common lodging houses, 8 in houses let in lodgings or in boarding houses and 1 (an amusement caterer) in a caravan.

Of the 335 others, 141 were living in houses owned by the local authority. Two hundred and fifty-two were living in tenements, 117 of them occupying houses on second or higher floors. Twenty-one of the houses had only one apartment, 100 were of two apartments, 86 of three apartments, 114 of four apartments, 14 of five apartments and 3 of six apartments. Twenty-two of the families were living in conditions of crowding worse than two persons per room; 15 were living three persons or more per room. The housing conditions of 8 of the 22 families originally living two persons per room or worse were greatly improved during the two years this study was in progress. Most of the overcrowded families were living in houses that were structurally far from good, yet despite this unfavourable setting the home background was assessed as 'good' in half of them. Six of the 22 men who came from overcrowded homes had been treated in hospital for cardiovascular disease, 6 for alimentary disease, 2 for respiratory disease and 2 for endocrine disturbances; the others suffered from a wide variety of disabilities. When the men were in hospital, the clinician in charge of the case regarded breakdown in health as preventable in 7 of the 22 cases from overcrowded homes; and environmental factors were also considered to have contributed heavily to their illness.

5

The Position Two Years after Leaving Hospital

1

Deaths within two years of discharge from hospital

Sixty-five of the ex-patients died between three months and two years after leaving hospital, making the total who died within two years of discharge 103, 24·2 per cent. of the total number of patients included in the study. This proportion who died in the course of the two years is exactly the same as in the earlier study, which lends support to the belief that in point of severity the cases in this present study are probably, considered as a group, very comparable with the earlier series. Two of the men who died were under 35 years of age, 7 between 35 and 44 years, 9 between 45 and 54 years, 19 between 55 and 64 years, and 28 over 65 years of age. Eight were at the time of admission to hospital non-manual workers, 5 of them skilled; 14 were skilled manual workers, 9 semi-skilled manual workers, and 4 unskilled labourers; 8 were described as 'unemployed' on admission to hospital, while 22 had already retired.

Of the 65 patients who died between three months and two years after discharge from hospital, 34 had been treated for cardiovascular disease, 7 for respiratory disease, 7 for alimentary disease, 7 for neoplasms, 5 for disease of the nervous system, 2 for ill-defined conditions and 1 each for tertiary syphilis, urinary disease, and acute senile deterioration. In 46 cases the recorded cause of death was that for which the patient was treated in hospital, in the other 19 it was different, though in the great majority of them, too, the condition for which the patient was treated in hospital was a contributory factor—perhaps the main factor—in causing his death. Fifty-two of the 65 who died between 3 months and 2 years after leaving hospital had been discharged from hospital as 'improved' and 13 as 'condition unchanged'. Nine of the 65 were treated in hospital for less than two weeks, 35 for from 2 to 4 weeks, 19 for

from one to two months and 2 for more than two months—the longest for a hundred days. Thirty-three had had at least one additional spell of in-patient treatment during the five years immediately preceding the hospital admission on which this study is based; many others had out-patient supervision during that period. Sixteen of the 65 deaths took place between three months and six months after the patient left hospital, 26 between six months and one year after discharge, 9 between one year and eighteen months, and 14 between eighteen months and two years after leaving hospital. Twenty-two of the deaths took place in the patient's own home, 21 in the hospital in which he received the treatment on which this study is based, 21 in other hospitals, and 1 in a common lodging house.

The proportion of ex-patients who died within two years of discharge from hospital, as was to be expected, increased steeply with age; it was 10 per cent. among those under 35 years of age on admission, 42 per cent. among those over 65 years of age. Thirty-seven per cent. of those who were described as 'unemployed' on admission to hospital died within two years of discharge, as did 45 per cent. of those already retired.

Fifty-three of the 103 patients who died within two years of discharge had one or more additional spells of in-patient treatment during the five years preceding the admission on which this study is based—28 on account of the disease for which they were treated on this occasion, 25 for a related illness and 16 for some other condition apparently unrelated.

Altogether 36 of the 103 men who died within two years of leaving hospital died in their own homes, often in very unsuitable conditions: 31 died in the hospital in which they received the treatment on which this study is based, 34 in other hospitals, 1 in a private nursing home and 1 in a common lodging house. Two points emerge in this connection: one, the very considerable amount of duplication of investigation that must inevitably arise from repeated admissions of the same patients to different hospitals, and the other the serious lack of adequate provision for terminal care.

2

Clinical condition two years after discharge from hospital

Two hundred and eighty nine patients were seen in their homes two years after discharge from hospital—the original 427 on whom the study was based, less 103 who had died since leaving hospital, 12 who were back in the hospital at the end of the two years and 23 who had left the city or for some other reason could not be traced. The number who happened to be in hospital when their homes were visited at the end of two years does not in any way measure the number of patients who had one or more further spells of hospital treatment during the two years with which the study was immediately concerned. In all, 97 of the men still alive two years after discharge are known to have had one or more additional spells of in-patient treatment during that period, sometimes as many as five spells, in addition to the many who continued to receive out-patient supervision. During the period of 7 years for which information is available—the 5 years before admission and the 2 years following discharge—142 of the 289 survivors (49·1 per cent.) had one or more further spells of in-patient care, either in the hospital in which they were patients when the study was commenced or in another, a figure corresponding closely to that found in the earlier survey (47·7 per cent.). Seventy-three of the surviving patients had one additional spell of in-patient treatment, 37 had two, 18 had three and 14 had four or more.

In Table 5 the general condition of the men three months and again two years after discharge is shown in relation to the nature of the illness for which they were treated in hospital.

Twenty-one of the 289 survivors seen in their homes two years after discharge from hospital were regarded at that time as 'cured', 161 had continued to maintain improvement, 79 remained much as they had been on admission to hospital, still far from established health, while 28 were worse, clearly going downhill. The proportion of men who continued to show improvement two months after leaving hospital naturally diminished as age increased; among those under 35 years of age on admission it was 56 per cent. of the men originally 'at risk', falling to 31 per cent. among those over 65 years of age.

TABLE 5. *Progress after discharge in relation to nature of illness*

Diagnosis	*Condition on leaving hospital*					*Condition three months later*								*Condition two years after leaving hospital*							
	Cured	*Improved*	*Condition unchanged*	*Worse*	*Total*	*Dead*	*Back in hospital*	*Cured*	*Improved*	*Condition unchanged*	*Worse*	*Not seen*	*Total*	*Dead*	*Back in hospital*	*Cured*	*Improved*	*Condition unchanged*	*Worse*	*Not seen*	*Total*
Infective diseases	2	3	3	–	8	1	3	1	2	–	–	1	8	2	3	1	1	–	–	1	8
Neoplasms	–	8	11	1	20	10	3	–	2	3	2	–	20	17	–	–	–	1	1	1	20
Diseases of endocrine system	–	20	2	–	22	1	1	–	17	2	1	–	22	1	–	–	12	7	1	1	22
Diseases of blood	–	7	–	–	7	–	–	–	6	–	1	–	7	–	–	–	5	1	1	–	7
Psychoneurotic illness	–	1	1	–	2	–	–	–	–	1	–	1	2	–	–	–	–	1	–	1	2
Diseases of nervous system	–	27	7	–	34	5	2	1	14	8	3	1	34	10	1	–	10	10	2	1	34
Diseases of circulatory system	–	126	13	–	139	14	10	–	87	15	9	4	139	48	2	1	53	24	6	5	139
Diseases of respiratory system	2	59	3	1	65	6	1	–	37	11	5	5	65	13	3	2	22	11	10	4	65
Diseases of alimentary system	2	67	9	–	78	1	–	3	64	8	–	2	78	8	1	5	36	17	3	8	78
Diseases of genito-urinary system	1	5	1	–	7	–	–	–	4	1	1	1	7	1	–	1	2	2	1	–	7
Diseases of bones and joints	1	7	–	–	8	–	–	1	7	–	–	–	8	–	1	1	6	–	–	–	8
Injuries	5	3	1	–	9	–	–	5	4	–	–	–	9	–	–	4	4	–	1	–	9
Other diseases	1	2	3	–	6	–	1	1	4	–	–	–	6	1	–	2	1	1	1	–	6
Ill-defined conditions	1	16	5	–	22	–	2	4	12	2	–	2	22	2	1	4	9	4	1	1	22
TOTAL	15	351	59	2	427	38	23	16	260	51	22	17	427	103	12	21	161	79	28	23	427

There was also a clear relationship between the proportion of men who continued to maintain their improvement and the kind of work in which they were engaged. Those in non-manual work fared better than skilled manual workers and they in turn better than unskilled labourers; the unemployed fared worst of all.

TABLE 6. *Proportion of men (as percentage) who continued to maintain improvement in health two years after leaving hospital in relation to nature of their employment.*

	Nature of employment on admission to hospital					
	Non-Manual	*Manual Skilled*	*Manual Semi-skilled*	*Manual Unskilled*	*Un-employed*	*Retired*
Men who maintained improvement as percentage of all men in study . . .	62	53	42	38	10	25
Men who maintained improvement as percentage of survivors two years after discharge . . .	75	73	57	56	19	54
	Nature of employment 2 years after discharge					
Men who maintained improvement as percentage of survivors two years after discharge . . .	84	79	77	65	8	57

3

The employment situation

Two years after leaving hospital 183 of the 289 men (63 per cent.) seen in their own homes were in employment—73 in non-manual work (42 of them skilled), 48 skilled manual workers, 43 semi-skilled and 19 unskilled labourers; of the remaining 106, 54 had retired and 52 were unemployed. One hundred and sixteen (63 per cent.) of those in employment had gone back

to their old job, in 12 cases with some modification and in 6 with a new employer; 67 had taken up new work, this number including 6 who had not been in employment for some time prior to their admission to hospital. Twelve (fully 6 per cent.) of the men who were employed were in jobs that could only be regarded as unsuitable, this number embracing 8 who had gone back to their old jobs and 4 who had taken up new work. Below the age of 45, 57 per cent. of those who were in employment at the end of two years were back in their old job; over that age the proportion among those working of men who had returned to their old jobs steadily rose—between the ages of 45 and 54 it was 63 per cent.; between 55 and 64, 74 per cent.; and over the age of 65, 86 per cent. The proportion not in employment rose steeply after the age of 55; below that age it was 19 per cent., but between the ages of 55 and 64 it rose to 43 per cent. and at ages over 65, to 86 per cent. The proportion of men not in employment two years after leaving hospital was high among those who had been treated for disease of the central nervous system (59 per cent.), of the respiratory system (44 per cent.) and of the cardiovascular system (41 per cent.); it was relatively low among those treated for alimentary disease (26 per cent.) and for endocrine disturbances (20 per cent.). The proportion of men who had to take up new work after discharge from hospital was notably high among those treated for cardiovascular disease and for disease of the central nervous system.

Of the 289 men seen in their own homes two years after discharge from hospital, 85 had been non-manual workers on admission to hospital, 44 of them in skilled jobs. Two years after discharge, 63 of the 85 were still in non-manual work, 5 were in semi-skilled manual jobs, and 1 an unskilled labourer; 9 were unemployed and 7 retired. Of the 70 who had been skilled manual workers on admission, 47 were still at the end of the period of observation engaged in skilled manual work, 4 were in semi-skilled jobs, and 4 in non-manual employment; 6 were unemployed and 9 retired. Of the 44 who had been in semi-skilled work, 28 were still similarly employed, 1 had returned to skilled manual work, having been formerly a tradesman, 1 was an unskilled labourer, and 2 had found non-manual jobs; 10 were unemployed and 2 retired. Of the 34 who had been unskilled labourers on admission, 16 were still working as such,

4 had obtained semi-skilled manual jobs and 1 non-manual work; 12 were unemployed and 1 retired. Of the 21 men who had been unemployed on admission to hospital, 15 were still unemployed two years after discharge; 3 had found non-manual jobs, 2 were in semi-skilled work, and 1 an unskilled labourer.

The risk of being unable to return to old employment varied widely from one occupational group to another; the frequent inability of the unskilled labourer to return to his old job was very apparent:—

Nature of job on admission to hospital	*Percentage in same or similar employment 2 years after discharge*
Non-manual . . .	74
Manual, skilled . .	67
Manual, semi-skilled .	64
Manual, unskilled . .	36

Ninety-eight of the 289 men seen in their homes two years after discharge from hospital were no longer in the job they had held before admission, though some were still in the service of their former employer. Thirty-seven of the 98 were unemployed, 13 were in non-manual work, 11 were skilled manual workers, 23 semi-skilled, and 6 unskilled labourers. Twenty-seven of the 98 had formerly been non-manual workers, 23 skilled manual, and 26 semi-skilled; so that in each of these groups just under half of the men had managed to stay in the kind of work in which they were formerly engaged; but only 6 were unskilled labourers, whereas 22 had been so formerly, while the proportion unemployed two years after leaving hospital was higher among unskilled manual labourers than in any of the other occupational groups. It was estimated that of the 37 men who were unemployed two years after leaving hospital, 16 should have been capable of holding a job if it had been possible to find suitable work for them. In many cases where a man found it necessary to change his job, upwards of six months elapsed between discharge from hospital and the assumption of new work, and in about half of these cases this gap was certainly too long.

4

Months worked in the course of two years after leaving hospital

Thirty-five of the men seen in their homes two years after discharge from hospital had already retired from work before the admission to hospital on which this study is based. A further 19 retired from work in the course of the two years following their discharge. Of the remaining 235, 34 did no work throughout the two years, 26 worked for less than 12 of the 24 months, 32 worked for between 12 and 18 months, and 143 for between 18 months and 2 years: 30 started work within one month of discharge and had lost no time since. Six of the 19 who retired from work in the course of the two years following discharge from hospital made up their minds to stop work immediately on leaving hospital, and most of the others worked for only a short period before giving up work.

Above the age of 45, the proportion of men who had worked less than 12 months in the course of two years increased with age; under 45 years of age it was 21 per cent., between 45 and 64 years, 35 per cent., and at ages over 65 years, 84 per cent. This relationship is shown in Table 7, in which are included all of the 289 men seen at home two years after leaving hospital; the Table includes, therefore, 35 who had already retired before admission (4 of them aged between 55 and 64 years, the others, 65 years or over), as well as 31 who retired in the course of the two years following discharge, 19 before reaching the age of 65 years.

TABLE 7. *Number of months worked in the course of two years after discharge from hospital in relation to age at time of admission*

Number of months worked in course of 2 years	*Age*				
	Under 25	25—	45—	65—	*Total*
0	1	10	29	35	75
Less than 12	3	7	19	7	36
12–17	1	12	19	—	32
18–24	13	55	70	8	146
	18	84	137	50	289

It often happened that men who resumed work immediately after leaving hospital, perhaps prompted to return prematurely by economic necessity, lost a considerable amount of time through sickness in the course of the two years during which they were under observation; thus, 14 per cent. of those who started work within three months of leaving hospital subsequently lost, through illness, over three months working time within two years of their discharge from hospital, while of those who resumed work between three and six months after leaving hospital, 19 per cent. subsequently lost over three months working time within two years of discharge.

5

Factors influencing performance at work after leaving hospital

The proportion of men seen in their own homes two years after leaving hospital who had worked for less than one year of the two was influenced by the nature of the illness for which they had been treated in hospital, by age, and by such factors as occupational background and the quality of home in which they lived. Among those treated for neoplasm the proportion able to work for more than 18 months of the two years was naturally low; it was also relatively low among those treated for disease of the central nervous system, for respiratory and for cardiovascular disease; on the other hand, it was high among those treated for endocrine disturbance and for alimentary disease. As already noted, the proportion who worked for more than 18 months of the 24 tended to fall as age advanced, the fall being much steeper at ages over 55 years. There was a similar, if less spectacular, variation with occupational background; among those who had been non-manual workers when admitted to hospital, for example, 74 per cent. worked for at least 18 months of the 24; among skilled manual workers, 73 per cent.; among semi-skilled, 71 per cent.; and among unskilled manual workers, only 56 per cent. The quality of the home in which the men lived was also important; where the home assessment, as made by an experienced observer after several home visits, was 'bad', the proportion of men who worked for less than one year of the two was about four times

as high as where home assessment was 'good', though which is cause and which is effect in this relationship is not always very easy to determine.

6

Wives in employment

When the men who had been treated in hospital were visited in their homes three months after discharge, it was found that the wives of 67 were in employment. In 30 cases the reasons which had impelled the wives to take up jobs were connected, largely or entirely, with the illness of the husband. Two years after the men left hospital, the wives of 61 (28 per cent. of the married men seen at home) were in jobs and it was believed that in 21 cases the wives' decision to take up work was mainly or entirely prompted by the husband's illness. The proportion of wives at work was highest in the 35–44 age-group and was relatively high among men who were themselves employed in unskilled work at the end of the two years: the earnings of the wife helped to ease the financial stringency in these cases.

7

Social assistance received in the course of two years

Even while they were still in hospital, and certainly very soon after their return home, it became obvious that many of the men could be greatly helped by some form of social assistance in their efforts to throw off the effects of illness or to settle down in work within their compass. It was estimated that of the 427 men originally included in the study, no fewer than 234 (57 per cent.) received some form of social assistance: and of the 289 men seen in their own homes two years after leaving hospital, 170 (59 per cent.) received such help.

Many were referred back to, and helped by, the hospital almoner services: through them, for instance, 9 men were given assistance to overtake rent arrears, 32 received other financial help and 8 clothing or bedding, while grants were received for two from cancer relief organisations. Twenty-two were referred to, and helped by, voluntary agencies, notably the

Council of Social Service. Thirty-six received help from the Health and Welfare Department of the Corporation, including in 5 cases the provision of domestic helps. In numerous cases the Assistance Board made money grants. In 20 cases help was given with housing problems; in 9 of these it proved possible to help to secure rehousing on medical grounds. For 36 men holidays or periods of convalescence were arranged; in 9 cases the patient himself was able to set the necessary machinery in motion through his employment or some other association, while in the remaining 27 the arrangements were made by the present investigators with the co-operation of an appropriate social agency.

Much of the help given turned on employment. In 60 cases approaches were made directly to employers with a view to obtaining some modification of working conditions, temporarily or permanently; in 42 cases the man himself was advised to make this approach and did so, in 18 it had to be made on his behalf; and 47 of the 60 approaches were successful. Forty-three men were referred to Resettlement Officers and 14 of them were taken into industrial rehabilitation units. In 41 cases an alternative job was found by private approach and in 2 cases assistance was given in arranging transport to work. In 3 cases employment was found for the wife of a man who was himself unable to work and suitable arrangements made for the admission of children to day nurseries.

8

Registration under Disabled Persons (Employment) Act

Fifty-two of the men had been registered under this Act at one time or another before the admission to hospital on which the present study is based, but the registrations of 27 had lapsed, 2 of the 27 having ceased to be registered when they retired from work on medical grounds.

In addition to the 25 registrations still current when the men were admitted to hospital—18 of them of more than 5 years duration—6 were registered under the Act for the first time within three months of leaving hospital and 23 others between 3 and 24 months after discharge, this latter number excluding

5 who were re-registered, their earlier registrations having lapsed. Altogether, therefore, 76 of the 427 men included in the study were on the register under the Act while this investigation was being carried out, or had been so at some time prior to admission to hospital; 59 of them were actually on the books while the study was in progress.

These 59 men constituted a relatively young age-group: 25 of them were under 45 years of age and 18 were between the ages of 45 and 54, with only 16 over 55 years of age. Twenty-five of the 59 were treated while in hospital for cardiovascular disease, 9 for each of respiratory and alimentary diseases and 5 for disease of the central nervous system.

The occupations of these 59 men on admission to hospital, and of the 49 survivors 2 years after discharge from hospital, can be summarised thus:

	Non-manual	*Manual skilled*	*Manual semi-skilled*	*Manual unskilled*	*Unemployed (or retired)*
On admission to hospital . .	21	11	9	7	11
2 years after discharge . .	13	3	6	1	26

In 28 cases the interval between discharge from hospital and return to work was more than six months and in many of these cases the gap appeared to be unduly long. Eleven of the men worked for 18 or more of the 24 months following their discharge from hospital, but, on the other hand, 22 did no work in the course of the 2 years and 12 others worked for less than twelve months during that period.

6

Some Illustrative Cases

MANY of the men studied got on remarkably well after they left hospital, some surprisingly so considering age, severity of disability and the general environmental circumstances to which they returned. Take, for example, the cases of these four men, all between 73 and 79 years of age:

Alex. A. has been a plasterer in steady employment all his working life. He was treated in hospital for one month, suffering from haematemesis associated with a peptic ulcer. Three months after discharge from hospital he returned to work. He had intended to retire, but his employers, who had long known him to be a conscientious worker, encouraged him to stay on, the firm being engaged on indoor work; they arranged that he could modify his rate of work to suit himself, 'but he still does as much as men half his age'. Alex. lost no more working time in the course of the 2 years after leaving hospital. He is most careful about his diet and continues to feel and look remarkably fit for his age: he is happy with his job, his hobbies and his home in a modern local authority cottage-type house, well-run by his wife—also an old age pensioner.

Roderick M. suffered from diabetes. A stonemason by trade, he had retired from the service of the Corporation with a pension ten years previously, but, 'for something to do,' took a job as a watchman at the docks. He was kept in hospital for 19 days and within a month of discharge returned to work, making regular attendances at the hospital clinic for supervision. He adheres meticulously to the way of life which his rather severe diabetes demands: but this does not prevent him from working away regularly or from negotiating the mile-long walk that separates the docks from the comfortable tenement home—three stairs up—which his wife manages so well. Roderick has no intention of 'retiring'.

Francis M., a boot-repairer, was another who had retired from Corporation service many years previously: thereupon he went to work in a similar job with a private firm, working full-time until he was 75 years of age and subsequently part-time. When his wife died

4 years ago he moved to a 'single end' in a tenement property, preferring to remain 'independent' so long as he was well rather than to live with one of his children. He had had little truck with doctors in the course of his long life: one day he collapsed on his way home from work and the police rushed him to hospital. There he remained under treatment for 13 days (hypertension, bronchitis and emphysema) and 4 days after discharge returned to work. He prepares himself a cooked meal each evening, does his weekly shopping on Saturday, and goes to Church every Sunday. Francis was keen to continue working as, apart from the financial benefit and the saving in coal and light, he liked the companionship and the interest afforded by his job—finishing off intricate hand stitching. It was felt that, at his age, he was doing too much and arrangements were made for a neighbour to keep a friendly eye on him and for further shortening of his hours of work. He worked for 23 of the 24 months immediately following discharge from hospital and although at the end of that period he had little physical reserve, and was persuaded to let his doctor keep an eye on him and one of his daughters help with the housework, he still regards his work as a hobby and does not want to give it up.

David S., now 79 years of age, had been a steeplejack until he was 70. A widower for many years, he managed for himself and had lived for 30 years in a one-roomed tenement house. Becoming bedfast in a spell of inclement weather, he was admitted to hospital for 23 days, being treated for bronchitis and emphysema. He insisted on returning to his own 'single end', and arrangements were made for supervision by his doctor and by the Corporation Health and Welfare Department, with the provision of a domestic help, who cooked a meal for him on days when the 'Meals on Wheels' service was not available: a neighbour also helped and the district nurse came in to see him from time to time. The Corporation laundry service was a valuable aid, and the Assistance Board gave appropriate supplementary grants. On this basis he has managed to get along in his own home during the 2 years since leaving hospital, getting out and about, mentally alert and fairly active. Obviously the time is not far distant when he is likely to require some form of residential care: that he has been able to live independently so far is due in large part to the help which it was possible to obtain for him in the course of this study.

Often the support of a good home made it easier for a man to settle down successfully after an illness, easier to lead the kind of life that his condition demanded.

James W., now 42 years of age, is a joiner to trade. He contracted miliary tuberculosis at the age of 30 and, with the involvement of the suprarenal glands, developed Addison's disease. At that time he was off work for 5 years, during which he had prolonged periods of hospital care and has since remained on continuous replacement therapy. In 1954, after registration as a disabled person, he obtained employment at his trade and since the spell of hospital treatment on which this study is based he has worked for 23 months of the 24, taking only occasional days off in very inclement weather. He has been fortunate to be rehoused in a modern local authority cottage type house convenient for his work. A non-smoker and non-drinker, he pays careful attention to his dietary regime, habits and therapy under the supervision of his own doctor and the hospital. His home background is very satisfactory.

Even where the medical condition was quite inconsistent with any return to work, it was often possible, by the provision of various forms of social service, to improve conditions sufficiently to make life much easier for a sick man.

Thomas H., now 68 years of age, retired 3 years ago after working for 50 years as an iron moulder. For some years he had experienced anginal attacks and the steep stairs leading to his third storey tenement house undoubtedly added to his distress, though the home itself was comfortable and spotlessly clean. For 47 days he was under treatment in hospital for his cardiac condition, and while he was there his housing conditions were investigated and special representations made for his re-housing. A few months after discharge from hospital he was given tenancy of a modern ground floor local authority house, one of several designed for old folk. Since rehousing he has never looked back and, with the obstacle of stairs removed, has taken a new lease of life. He is no longer house-bound, but out and about freely, taking with his wife an interest in the activities of the local Old Age Pensioners association.

Robert M., an unmarried man 57 years of age, lived with his elderly mother and three unmarried sisters in a third storey tenement house. Home conditions are good, one of the sisters looking after the house. Robert carried on the family business of boot repairing until 1954, when he developed cerebral thrombosis. Since then he has not worked: a relapse caused his present admission to hospital, where he was treated for 18 days: on discharge he had a severe speech defect and some paresis, especially of the upper limbs. For 3 months he

attended the speech clinic, but made poor progress. At home he was house-bound and became increasingly despondent and irritable at his lack of progress and at the fact that he had nothing to do. Attempts to secure re-housing failed, but it was arranged through the W.V.S. to provide occupational therapy, making purses. He began to improve and became able to attend a nearby centre two hours weekly for social, recreational and occupational activities. Later, arrangements were made for him to obtain wider facilities of a similar nature at a Red Cross centre, attending 5 days per week—a development greatly welcomed both by himself and his family; there he does basket-work and leather-work and is regarded as a good worker. Both his speech and his limb movements have improved and his attitude to his disability and to life in general is much better.

Not all fared so well. It often happened that the weight of adverse social circumstances or the attitude of the man, or both, contributed heavily to an unfavourable outcome.

Hugh K., 48 years of age, an engineer in a ship-repairing yard, had required medical care for several years for hypertension. His condition deteriorating, he was treated in hospital for 20 days, thereafter remaining under out-patient supervision. Erratic social habits, together with the heavy nature of his work and a great deal of overtime, added materially to his difficulties: he had just incurred additional financial commitments associated with assumption of the tenancy of a new local authority house (3 stairs up!): he paid little heed to his doctor's advice. He was registered as a disabled person under the Act of 1944, but there was difficulty in securing alternative work for him and he returned to his former (unsuitable) job 2 months after leaving hospital. He continued to work a good deal of overtime and soon relapsed. He was re-admitted to hospital for a further period of 3 weeks: at this time the possibility of surgical treatment was considered. An operation was performed, but he took another heart seizure and died.

Douglas D. had a long history of bronchitis, for which he was in receipt of an Army pension: he also had a duodenal ulcer.Registered as a disabled person in 1950, he had obtained in succession a number of jobs (barman, etc.), mostly unsuitable: he had worked for less than 18 months in the course of the 5 years preceding the admission to hospital on which this study is based. When he entered hospital he was 41 years of age and was living with his wife and two

children in a third floor room-and-kitchen tenement house; on admission he was suffering from *cor pulmonale*, with congestive cardiac failure and a super-added respiratory infection. He remained in hospital for about 3 months. Meanwhile a good deal of social work was undertaken on his behalf. Soon after discharge he was re-housed by the local authority: he was offered a ground floor house, but preferred one on the first floor to avoid responsibility for a garden. He was unable to work, but occupational therapy was provided for him: his wife obtained full-time employment in the schools meals service. Fourteen months after discharge he had to be readmitted to hospital, and yet another spell of hospital treatment followed. He died from congestive cardiac failure about 18 months after his original admission to hospital.

John C., a dock labourer, had done no work for 18 months prior to admission to hospital. He was 34 years of age, single, and addicted to drink. He lived by himself in a primitive manner in a room-and-kitchen house and had continually repelled any efforts by his neighbours to help him. Unkempt and in poor condition on admission, he was found to be suffering from dermatomyositis and remained in hospital for 48 days. During that period his medical state and general attitude improved greatly and much social effort was expended on his behalf. On discharge he seemed to be a new individual: he was registered as a disabled person and admission sought for him to an industrial rehabilitation unit. Unfortunately this could not be arranged for about 3 months: meanwhile, back at home, his whole attitude deteriorated and he slipped back into his former habits. No job could be found for him when he left the rehabilitation unit and he was ultimately classified as suitable for sheltered employment. But he had lost all enthusiasm for work, remained content to drift along in a 'hermit' fashion and became more and more disreputable. The Salvation Army welfare department could do nothing with him and the neighbours became worried about the effects of his language and intemperate habits on the children: he finally got into police trouble.

William S., a painter by trade, had an old tuberculosis lesion of the lungs but his chief disability was an organic nervous disease, syringomyelia, from which he had suffered for 20 years, with resultant weakness of both arms. Registered as a disabled person some 10 years previously, he had obtained work as an inspector with a firm of machine tool manufacturers and had held this job without difficulty. His admission to hospital had been for periodic re-

assessment, but some months later he relapsed. William lived with his wife and 3 children in a room and kitchen house in an old tenement property and in his relapse he was worried not only about his unsuitable housing but by uncertainty over future employment, as his firm were considering moving to another area and he fully realised that it would be difficult for him to obtain other suitable work. A the end of the period of observation he was unemployed.

Henry B., 37 years of age, was an unskilled labourer with a formidable sickness record. Since the age of 18 he had suffered from epileptiform attacks following an injury and for the past 10 years also from asthma, for which he has had several spells of hospital treatment, including that on which this study is based. Ten days after discharge he returned—against medical advice—to his job with a firm of cattle food manufacturers, a job which involved the inhalation of irritant dust; but after only one day he had to give it up. He had been registered as a disabled person some years previously, but attempts to find more suitable employment for him had apparently failed; in view of his 'security' with his present employers, Henry was unwilling to leave them, but felt that his job might be modified to make it less harmful. In the months following discharge he had many spells off work on account of his asthma: finally, after assessment in an industrial rehabilitation unit he was placed as a typewriter assembler. His housing conditions, which had been bad, were greatly improved by transfer to a modern local authority house on the outskirts of the city. Unfortunately he suffered another relapse shortly afterwards and had to be re-admitted to hospital. In the course of 2 years after leaving hospital he worked for something less than 8 months; improvement of his environment had come too late.

Thomas B., an unmarried man of 27, had formerly worked as a milk roundsman but had been a dock labourer for the past 5 years. He became listless and found his work increasingly heavy and was admitted to hospital for treatment for diabetes. After 4 weeks in hospital he returned to his comfortable home and was soon back at work; he came home for a mid-day meal instead of, as formerly, taking a piece. He was unwilling to consider down-grading as a docker or to accept advice regarding possible hazards at work. Three months after discharge he fell and struck his head while working in the hold of a ship; it emerged that he had taken 'no breakfast, but just insulin' that morning. He was still unwilling to realise the implications of his condition in relation to work: he kept

harping on a possible 'cure' and became lukewarm in his adherence to the diabetic regime, even to the point of giving up his idea of obtaining a 'non-diabetic' beer and reverting to the 'proper stuff'. He has largely passed out of medical supervision and while he has so far escaped further misadventure it seems highly probable that he will relapse in the not far distant future.

Cornelius Y. had undergone nephrectomy when 19 years old and for the past 19 years suffered from peptic ulcer: he had been on the Disabled Persons register from 1949 to 1956 but asked to have his name removed because 'he always had to find his own job'. Such work as he had done had been as an unskilled labourer, mostly in iron foundries. He had served a prison sentence for theft. He was separated from his wife and co-habiting with another woman: there were 7 young children in the home. Now, at the age of 41, he was admitted to hospital on account of bleeding from a duodenal ulcer. During his 30 days in hospital, he was seen by the almoner and by a resettlement officer, but approaches by them on his behalf soon revealed that he was already well-known to various social agencies and knew most of the ropes for obtaining financial aid. His home conditions were found to be about as unsatisfactory as they could be: the condition of the children had to be brought to the notice of the local authority. This was very much a man with a chip on his shoulder. Full of grouses about his family doctor and about the ineffectiveness of statutory and voluntary agencies he seemed to prefer his income of £8. 5s. weekly from public funds to work. He served another term of imprisonment for 'wife' assault—'all her fault'. Two years after discharge from hospital he was unemployed and likely to remain so: he seems destined to remain a social problem despite anything that can be done to help him.

In some cases resettlement in suitable work presented serious difficulty and took a long time, doubtless aggravated by the fact that the official machinery was having to operate in an area of essentially heavy industry where unemployment was considerable. These cases of heart disease serve to illustrate the kind of difficulty that arose.

William McC., now 55 years old, was born and bred to shipyard work, like so many others on Clydeside. Following his father, he served his time as a plater and, though he turned to other jobs during the years of depression, he was back again working as a plater in the yard in which he had served his apprenticeship. He had been

very free of illness before being stricken with the coronary thrombosis that brought him to hospital: when he was discharged, after 47 days' treatment, the clinician wrote that 'he was well adjusted to his recent illness and its consequences, was unfit for his previous job and alternative employment might be considered in 6 weeks' time'. When seen one month after leaving hospital, William was becoming increasingly worried about future prospects and his reduced financial circumstances. His old firm was anxious to have him back at work, which was obviously unsuitable and in its very nature incapable of much modification. Two months after discharge William was registered as a disabled person; eventually, 4 months later, through persistent approach to the employment exchange, he obtained a suitable semi-skilled job as a machineman. In this he worked steadily, content with his reduced income of £8 per week and not anxious for overtime. His home care is excellent and there seems no reason why William should not do well.

William W., a trained engineer 49 years of age, had been in indifferent health for 18 months, feeling his work getting progressively heavier, before he was admitted to hospital for treatment for coronary thrombosis. He was in hospital for 42 days, a co-operative patient, and on discharge returned to his modern council house, 2 stairs up, in a new housing scheme: he had only moved into it about one month before admission to hospital and had been doing a good deal of extra work in helping to put it into shape. He, too, was worried about his financial commitments and was with difficulty dissuaded from returning to his unsuitable job. He was registered as a disabled person while still on sickness benefit but the official machinery appeared to be reluctant to take any definite action towards finding him new work until he was 'signed off'. Fortunately his daughter was able to find him a job as a storeman in a factory in the office of which she was employed: he has not lost a day's work since. The work is suitable and convenient to his home, his employer is sympathetic and William continues to do well.

George R. had experienced a series of coronary and peripheral vascular accidents during the 18 months prior to the admission to hospital on which this study is based: during that time he had two spells in hospital and was registered as a disabled person. For 27 years he worked as a machineman with a firm of aluminium foil manufacturers, often having to lift heavy weights. Four years before the onset of his current illness he left a ground floor tenement house (because of dampness), moving to one on a third storey flat.

During his stay in hospital the housing situation was explored and representations made to the local authority: some months later he was re-housed in a council ground floor house. He was given some financial help in view of his heavy hire-purchase commitments. When the clinician considered him fit to undertake light work, George was referred to the resettlement officer of the Ministry of Labour; he was, of course, already registered as a disabled person. No suitable job was available: indeed there was some doubt whether he was really very anxious to obtain work at this stage. He had found his wife 'a wee job' and appeared to be content to drift along, helping in the house and reading a lot. But re-housing seemed to act as a stimulus to him and one month later, on his own initiative, he obtained the job of operating a bread-cutting machine in a large bakery. This job he held without difficulty until the end of the period of observation, attending the hospital for check-up at fortnightly intervals and continuing to keep clear of further misadventures.

Delay in effective resettlement was particularly unfortunate where a young person was involved; several such cases were encountered in the course of the study.

James F. was 16½ years of age when admitted to hospital for treatment for gastric ulcer. He had left school at the age of 15, taking up work as an apprentice painter 'until he could start serving his time as an apprentice engineer'. Three months later he had haematemesis, culminating in a perforation successfully treated by operation. He resumed work as a painter but a few weeks later collapsed at work, again with a perforated ulcer, treated by operation. Thereafter he did no work for 7 months, when he had to be admitted to hospital yet again suffering from a bleeding ulcer. This was the admission on which the present study is based. His case was not brought to the notice of the social service department. After treatment for 27 days he returned home to live with his elderly grandparents in their 5-apartment local authority house: probably he was rather spoiled at home. At the first domiciliary visit in the course of this study (one month after discharge) James was referred to the hospital almoner so that the question of resettlement could be explored. Six months after discharge the boy, registered as a disabled person, commenced a 2-months course at an industrial rehabilitation unit, but his local employment exchange was unable to place him in employment at the end of the course. For a further 3 months he remained well but unemployed; then, one year after discharge, he started work as an assistant in a grocer's shop. Soon

afterwards, in reply to an answer to a newspaper advertisement, he secured clerical employment with British Road Transport Services. He liked this job and commenced evening classes in commercial subjects, but after 6 months unbroken work was declared redundant and lost his job. Despite representations on his behalf, by almoner and investigator, the employment exchange could not find suitable work for James, who was becoming content to drift. After further representations on the subject, the case was reviewed, but though there seemed to be some prospect of a suitable placing, nothing tangible resulted and James was still unemployed at the end of the period of observation—not a happy position for an 18-year-old.

7

Discussion

I

The two series compared

ONE object of the present investigation was to see how far the broad pattern emerging in the earlier study repeated itself; the second, and more important, purpose was to try to find out whether it was possible, by the fuller use of available health and social services, to improve upon the results reported. It may fairly be claimed that the clinical material studied is broadly comparable in the two series. True, there are minor differences; the men in the present study formed a slightly older group, one weighted with rather more cardiovascular disease, but, on the other hand, less disease of the central nervous system; their average stay in hospital was a trifle longer. In a higher proportion of cases the breakdown that brought these men to hospital was regarded by the clinician as preventable; and a higher proportion had had an earlier spell of in-patient treatment during the five years immediately preceding the admission on which the present study was based. But the immediate results of hospital treatment, as assessed by the physician in charge of the case, were very similar in the two groups: in this, 85 per cent. were discharged as 'cured' or, more frequently, 'improved'; in that, 82·4 per cent. The physician estimated that 40·2 per cent. of the men in this group would be fit for return to work within three weeks of leaving hospital, compared with 43·6 per cent. of the earlier series. Few in either group had the advantage of a spell of convalescent care before returning to their own homes—3·8 per cent. in one series and 4·1 per cent. in the other. A higher proportion of this group (69 per cent. against 37 per cent.) remained under continuing out-patient supervision after discharge from the ward, though that fact is probably not of much significance in prognosis.

The early post-hospital results in the present investigation differed little from those previously reported. Within three months of discharge 14·3 per cent. of this group and 14·2 per cent. of the other were either dead or back in hospital, though the proportion of the survivors seen in their own homes who were regarded as having continued to maintain improvement three months after leaving hospital was higher in the present series, 79 per cent. against 65 per cent. In both groups the proportion who had maintained improvement was highest among non-manual workers, lowest among those who had been unemployed for some time before admission to hospital. Despite the apparently better clinical progress, the proportion actually back at work three months after discharge from hospital was lower by some 30 per cent. in the present series than in the earlier. In both groups the proportion of those back at work three months after leaving hospital who had changed from their pre-hospital job was highest among those who had been employed prior to admission as unskilled labourers; very few men over the age of 55, irrespective of the nature of their pre-hospital jobs, changed to new work. Among those who were in employment, the proportion who were in jobs regarded as unsuitable three months after leaving hospital was appreciably lower in the present study than in the former, 9 per cent. against 21 per cent., probably partly because of the smaller fraction back at work.

The proportion of men who died within two years of leaving hospital was exactly the same in the two groups, 24 per cent. At the end of the two years, 45·4 per cent. of all the men traced who had been included in the present series were considered to have continued to maintain the improvement initiated in hospital; the others were much as before, still far from well, or clearly worse. In the earlier series 47·2 per cent. were regarded two years after leaving hospital as having continued to improve; the others were still in indifferent health, barely holding their own, or in some cases worse.

In both series the unskilled labourers fared worst. At the end of the period of observation, only 6·6 per cent. of the men in this series were working as unskilled labourers, compared with 22·1 per cent. in the earlier study; but, on the other hand, the proportion in semi-skilled work had increased from 9·1 per

cent. then to 14·9 per cent. now and the proportion not in employment from 27·2 per cent. to 36·7 per cent. The proportion not in employment at the end of the period was relatively higher among those who had been unskilled labourers on admission to hospital; there had been a movement out of unskilled manual work, mainly to semi-skilled jobs on the one hand or to unemployment on the other.

Twenty-six per cent. of the men in this series seen in their homes two years after leaving hospital had done no work in the course of the two years; in the earlier study the corresponding figure was 22 per cent.; and, at the other end of the employment scale, 51 per cent. of the present group had worked for upwards of 18 months of the 24, compared with 57 per cent. of the earlier.

Apart from the nature of the illness responsible for admission to hospital, the factors which exerted most influence on work record after discharge were age, nature of employment, and the quality of home in which the men lived. The amount of working time lost increased with age; but in each broad age group the proportion of men who worked 18 months or more of the 24 was higher in the earlier study than in this:

Percentage of men who worked at least 18 *months of the* 24 *immediately after discharge from hospital*

Age group	*This study*	*Former study*
Under 45 years	67	72
45–64 years	51	56
65 years and over	16	19

Of men who had been engaged in non-manual work when they were admitted to hospital, 74 per cent. worked for at least 18 months of the 24, but of unskilled labourers only 56 per cent. As it happened, the proportion of the men who were working as unskilled labourers on admission to hospital was very similar in the two studies, about 33 per cent. in each. In both surveys subsequent work performance was found to be much more closely related to nature of employment than to the clinician's

estimate of future working capacity. The quality of home background was no less important; the proportion of men from homes assessed as 'bad' was rather higher in this series (10 per cent.) than in the former (7·5 per cent.).

In some ways these results must be regarded as disappointing. The experience of the former study has been largely repeated; so far as sustained clinical improvement and performance at work are concerned, the results are very little, if any, better than those in the earlier investigation, where no conscious effort was made by the investigators to help the men involved.

2

The help given

The assistance afforded to the men included in the present study took several directions. At the routine visits made one month and three months after the patient left hospital, and, where help was obviously required, repeatedly throughout the two years of the study, efforts were made to smooth out the difficulties of those who were faring badly and whose plight seemed to be susceptible of improvement. Sometimes the help took the form of persuading a reluctant man to persevere in a course of treatment that had been mapped out for him, sometimes in arranging, with the concurrence of his family doctor, for his re-admission to hospital. But more frequently the help afforded was social rather than medical; its nature is set out in some detail elsewhere in this report. In these efforts to help the patient after he left hospital there was a measure of co-operation with the hospital almoner service, with the welfare department, with the local authority and with the officers of the Ministry of Labour. All this represented considerable expenditure of time and effort and inevitably the question arises, Why are the results so disappointing?

3

Factors influencing success and failure

In any assessment of this kind it has to be borne in mind that the great majority of the men included in the present study—

as in the former—suffered from serious, and often progressive disease. Many of the pathological changes were irreversible and, similarly, much of the social pathology encountered was of long standing and, largely, also irreversible. It was realised in the earlier report that much of the value of hospital treatment does not lend itself to mathematical appraisal and that inevitably much devoted and highly skilled treatment could have little chance of restoring effective working capacity. In some cases prospects of any long-term recovery were negligible from the start. Inevitably, from the nature of their illness, many of the men deteriorated quickly after they went home; indeed, some died within a few weeks of leaving hospital in conditions which were an affront to human dignity. There is, in the West of Scotland at all events, serious lack of facilities for terminal care.

It was possible in the course of this study to ease the lot of some of these people doomed to die or to prolonged invalidity. In such cases, family doctors and district nurses habitually render service above all praise; but beyond the fields of domiciliary medical and nursing care there is much that could be accomplished by effective after-care expressly designed to promote the welfare of the patient and lighten the burden of his care.

On the other hand, there were many cases, discharged from hospital as 'improved', in which it seemed likely that the patient could be restored to working efficiency at an early date; it was estimated by the physicians when the patients left hospital that fully 40 per cent. of them were likely to be able to return to work within three weeks of discharge, a few requiring change of employment. But, in fact, only 27 per cent. of the men seen in their own homes one month after discharge from hospital were back in employment at that time, and only 46 per cent. after three months—fully one-fifth of them in employment different from their job before admission to hospital. It may well have been that the clinicians were over-optimistic in their estimate of early restoration of working capacity, but the gap is large and it is significant that return to work was much more closely related to social and environmental circumstances, notably home background and nature of employment, than to the clinical estimate of probable working capacity.

Age and nature and severity of the illness must inevitably limit the scope and success of efforts to improve post-hospital performance. Not by any means all ex-patients are capable of restoration to working capacity; but it should be possible to reduce the mass of recurring incapacity which this study, like the former, has disclosed. Many of these men are comparatively young people and many would undoubtedly fare better if they were given a better chance. Those who showed the heaviest mortality at early ages, the strongest tendency to relapse, and the poorest employment record were men in the group of unskilled labourers.

8

Conclusion

1

Need for development of after-care services

In the present study an attempt was made to help men discharged from acute medical wards to regain health and working capacity by harnessing such sources of assistance (statutory and voluntary) as are normally available to the community: for several reasons no attempt was made to influence the 'social' approach to the patient while he was still in hospital. We are satisfied that these efforts made life easier for some of the men included in the survey and did, in fact, enable some to return to stable employment who would almost certainly have been unable to do so without help of the kind; there is undoubtedly great scope for the development of a wider range of after-care services in Scotland.

But from comparison of the results in the present study with those obtained in the former it is clear that the efforts made have not influenced the over-all picture two years after discharge from hospital, as measured either by the proportion who had at the end of that period maintained the improvement initiated in hospital, or by the employment record of the men subsequent to discharge. From this point of view our approach has failed, a failure which seems to support the tentative conclusion reached in the former study that 'it is doubtful whether results substantially better than those presented can be obtained with things as they are'.

2

Restoration of working capacity

Hospital care becomes increasingly expensive and it is more than ever necessary to see that it is made to yield the greatest possible measure of permanent benefit; clearly it is to the interest of neither State nor individual that men should remain

out of employment if they can be restored to working capacity. What can be done to obtain better economic results from hospital care? Sometimes relapse is due to lack of intelligence or to the patient's disinclination to follow a prescribed regime; but too often the permanence of benefit that can be derived from even the best treatment services is limited by poor everyday environment, at home or at work. Sometimes there is lack of the benevolent home atmosphere that is so conducive to recovery; perhaps even more frequently the working environment is unsuitable, either from the nature of the work itself or from the conditions in which it is performed. Unsuitable work was the largest single social factor in the causation of the breakdown in health that had brought these men to hospital, and perhaps one of the most rewarding forms of service employed in the course of this study lay in steering men away from the perils of unskilled manual work, often heavy in its physical demands and quite beyond the powers of the men concerned. Unfortunately it was not always possible to find suitable alternative employment for them, even when they had considerable working capacity.

3

Scope for provision of 'Fitness Centres'

The transition from the sheltered atmosphere of the hospital ward to ordinary living and working environment is often a severe test, especially when the everyday conditions are those of the less privileged members of society. Only 4 per cent. of the men discharged from the acute medical wards studied enjoyed a spell in a convalescent home after leaving hospital. Not all patients discharged from hospital require convalescent home treatment; but the proportion that would benefit from it is undoubtedly much greater than the available accommodation. For many of these men what is required is not so much convalescent home care of the 'holiday' type as a short period of organised convalescence, with activity reviewed from week to week and adjusted in tempo as necessary, very much as in the convalescence depots of wartime service experience or 'fitness centres' (though not necessarily entirely residential), such as have been developed in Scotland at Bridge of Earn

or the Miners' Rehabilitation Centre at Uddingston. One advantage of this type of provision is that it makes possible, while the patient is still completing his recovery, a skilled appraisal of the practicability of encouraging him to return to his pre-hospital work or, where change of job is necessary, of making the necessary arrangements to have his employment future safeguarded without the time lag or gap which is sometimes disastrous in these cases. Experience has taught that it is often difficult to make effective arrangements of this kind while the patient is still in hospital; few of the men in the present series, for instance, were referred while they were still in hospital for registration under the Disabled Persons (Employment) Act. The experience of this study suggests that a well-organised fitness centre, working effectively with the other social services, could do much to promote the well-being and working efficiency of many of the men discharged from acute medical wards; it was estimated that probably nearly one third of the men would have benefited from admission to such a centre.

4

Importance of dealing with early stages of disability

Another lesson that emerges clearly from this study is the great importance of bringing disability—even potential disability—under skilled review at as early a stage as possible; many of the men in this study had long-standing disability which would have been much more amenable to earlier treatment and where, at an earlier stage, there would have been more prospect of averting economic disaster. This may well involve some re-orientation of hospital function, and fuller recognition that the diagnosis and treatment of disease at an earlier stage offers great long-term rewards, alike in human well-being and in the preservation of working capacity.

This study could not have been carried out without the encouragement and help of the senior physicians in charge of the wards in which the men were treated while in hospital. To them and their staffs, to the social workers inside and outside the hospitals who helped in the course of the study, and to the patients for their ready co-operation, we gratefully acknowledge our indebtedness. We are also deeply grateful to Miss J. Duff of the University Department of Social Medicine for much secretarial help.

Appendix

A More Detailed Classification of the Diagnosis Made in Hospital

Number of cases included in original study at time patient left hospital

INFECTIVE DISEASES			8
Pulmonary tuberculosis—chronic	3		
Tuberculous pleural effusion	1		
Syphilis	2		
Tabes dorsalis	1		
Leukoplakia	1		
Mediastinitis	1		
Infective hepatitis	1		
NEOPLASMS			20
Carcinoma	15		
Cerebrum	2		
Stomach	5		
Nasopharynx	1		
Lung	5		
Thyroid	1		
Prostate	1		
Carcinomatosis	1		
Secondary neoplasm	1		
Myeloma	1		
Lymphatic leukaemia	2		
ENDOCINE DISEASES			22
Diabetes	10		
Thyrotoxicosis	8		
Pituitary deficiency—Simmond's disease	1		
Pituitary obesity	1		
Addison's disease	1		
Acromegaly	1		
DISEASES OF THE BLOOD			7
Pernicious anaemia	3		
Iron deficiency anaemia	4		

DISEASES OF THE NERVOUS SYSTEM		34
Sub-arachnoid haemorrhage	3	
Cerebral thrombosis	12	
Cerebral embolus	1	
Disseminated sclerosis	4	
Parkinson's disease—Parkinsonism	2	
Hemiplegia	7	
Epilepsy	2	
Migraine	1	
Syringomyelia	1	
Postero-inferior cerebellar thrombosis	1	
PSYCHONEUROTIC CONDITIONS		2
Hysteria	1	
Psychoneurosis	1	
DISEASES OF THE CARDIOVASCULAR SYSTEM		139
Chronic valvular heart disease	14	
Coronary artery thrombosis	54	
Coronary insufficiency	14	
Congestive heart failure	21	
Paroxysmal auricular fibrillation	2	
Auricular flutter	1	
Ventricular failure	2	
Essential hypertension	10	
Malignant hypertension	6	
Atheroma (athero-sclerosis)	2	
Arterial embolism	2	
Thrombophlebitis	2	
Pulmonary embolism	3	
Cardiomegaly	1	
Cor pulmonale	1	
Cardiac aneurysm	2	
Pericarditis	1	
Intermittent claudication	1	
DISEASES OF THE RESPIRATORY SYSTEM		65
Influenza	1	
Lobar pneumonia	2	
Bronchopneumonia	3	
Pneumonia (unspecified)	12	
Acute bronchitis	4	

Chronic bronchitis	16
Chronic bronchitis and emphysema	10
Pleurisy	2
Pleural effusion	1
Bronchiectasis	2
Emphysema	1
Pulmonary fibrosis	1
Lung abscess	2
Spontaneous pneumothorax	2
Recurrent pneumothorax	1
Hydropneumothorax	1
Spontaneous haemopneumothorax	1
Bronchial asthma	3

DISEASES OF THE DIGESTIVE SYSTEM		78
Gastric ulcer	3	
Duodenal ulcer	35	
Peptic ulcer (site not stated)	21	
Gastritis	6	
Duodenitis	1	
Gastritis and duodenitis	2	
Ulcerative colitis	2	
Cirrhosis of liver	3	
Gastric erosion	2	
Duodenal diverticulum	1	
Pyloric spasm	1	
Mucous colitis	1	

DISEASES OF THE GENITO-URINARY SYSTEM		7
Acute nephritis	1	
Chronic nephritis	3	
Pyelonephritis	1	
Renal calculus	2	

DISEASES OF BONES, JOINTS AND MUSCLES		8
Rheumatoid arthritis	1	
Polyarthritis	1	
Subacute rheumatism	1	
Osteoarthritis	1	
Herniation of nucleus pulposus	2	
Cervical spondylosis	1	
Osteoporosis	1	

ILL-DEFINED CONDITIONS (AND SYMPTOMS)			22
Chest pain		2	
Abdominal pain		4	
Debility, anaemia, pyrexia, immersion		1	
Haemoptysis		1	
Haematemesis		1	
Melaena		2	
Hiccough		1	
Unconscious attack		1	
Vaso-vagal attacks		4	
Undiagnosed		5	
INJURIES AND POISONING			9
Poisoning		7	
from coal gas	3		
Barbiturates	4		
Injuries		2	
Surgical emphysema	1		
to head—subdural haematoma	1		
OTHER DEFINED DISEASES			6
Thoracic outlet syndrome		1	
Cervical adenitis		1	
Salt depletion—cramps		1	
Malabsorption syndrome		1	
Senility		1	
Dermatomyositis		1	

II

DUNDEE STUDY

by R. W. F. HARNETT and A. MAIR

I

Introduction

THE results and conclusions reported in *Hospital and Community* prompted the Nuffield Provincial Hospitals Trust to finance similar studies in Glasgow, Aberdeen and Dundee. The general design of this study in Dundee was similar to that carried out in Glasgow, but since the total follow-up period adopted in the Aberdeen investigation was one year, an additional visit at one year was also undertaken in Dundee where the study was undertaken jointly by the Departments of Medicine (Professor I. G. W. Hill) and Public Health and Social Medicine in the University of St. Andrews.

One of the primary aims was to determine whether the Glasgow results were generally applicable throughout Scotland, or merely reflected the prevailing social and occupational conditions in that part of Scotland. If, as seemed likely, there was no essential difference between Glasgow and Dundee, then the study might provide further information on the causes of the apparently short-lived benefit derived by so large a proportion of patients from hospital inpatient treatment.

For the Dundee study, only patients discharged from medical wards under the general care of Professor I. G. W. Hill were included. This eventually involved 3 male and 2 female wards in three hospitals, in which a total of 400 patients (300 males and 100 females) were interviewed, the numbers from each being shown in the Appendix (page 82).

Owing mainly to limitations imposed by the criteria for inclusion defined below, it took $8\frac{3}{4}$ months to reach the target totals. It was originally intended to confine the study to patients in the Dundee hospitals, but as the number interviewed in the first month was only 30, the male medical ward in Arbroath Infirmary was included as a source, thus offsetting in part the exclusion of patients from outlying districts. Interviewing of female patients was begun four months after the start of the study.

Within the limits laid down at the outset, the sample of 400 represented 89·65 per cent. and 88·38 per cent. of the possible totals for males and females respectively. The patients excluded were those:—

	Male	*Female*	*Total*
(*a*) unwilling to be included in the survey	2	3	5
(*b*) whose general practitioners did not wish them to be included	24	8	32
(*c*) permanently hospitalised . .	3	–	3
(*d*) day cases only . . .	5	1	6
(*e*) not seen before, nor traced after discharge	1	3	4
Total exclusions . .	35	15	50

A more detailed summary of potential and actual inclusions is given in the Appendix.

Selection

Some selection was considered advisable and the basis adopted was as follows:—

(*a*) *By Source:* To achieve as uniform a medical hospital practice as possible, all the patients were drawn from acute medical wards under the general care of Professor Hill.

(*b*) *By age:* Whereas work, in the form of remunerative employment or domestic duties, is a social necessity for the majority, if not all, adults between 16 and 60 years, economic dependency operates in different ways outside this range. Accordingly, only patients within this age group, where the urge to return to work would be fairly general, were included.

(*c*) *By Domicile:* To ensure a broad uniformity in both social and occupational environments, as well as to facilitate visiting, only patients living in or near an urban environment, and close to Dundee, were included. To offset this geographical loss (82 males, 28 females), it was decided to include in the study urban-domiciled patients treated in Arbroath Infirmary—again drawn from the medical ward under the general care of Professor Hill.

While these were the only planned limiting factors, some further patients were excluded for the reasons indicated above, but these were not sufficiently numerous as to render suspect the general validity of the sample.

There was no selection of hospitals, since Dundee has only two general hospitals, and Arbroath one. Although the special interest of the professorial medical unit is cardiology, the vast majority of patients are admitted at random as emergencies and except when there are no beds available, none is refused admission. Each of the medical units, both in Dundee Royal Infirmary and Maryfield Hospital, have set waiting days for emergency admissions, when all cases referred by general practitioners or the casualty departments for hospital in-patient treatment are accepted without selection. It is, therefore, fair to say that the sample included in this study is a random one for the defined age range within an urban environment in East Scotland.

Methods

The success of investigations such as this depends on the co-operation of many people, both doctors and patients, and it is a pleasure to record that this was received in good measure throughout the study.

(1) *Approach:*

(*a*) *To general practitioners:* At the outset all general practitioners in Dundee, the Local Medical Committee and the local branch of the British Medical Association were informed by letter of the broad outlines and aims of the study, and their co-operation invited. In the event, excellent co-operation was obtained on the medical side, only four general practitioners, representing three practices, indicating that they did not wish their patients to be included, while in the case of four individual patients their general practitioners requested their exclusion for special reasons.

(*b*) *To patients:* Excluding those whose general practitioners had declined to co-operate, all eligible patients were interviewed personally in the ward, as near as possible to the day of discharge. After a brief explanation of the purpose of the study and of how it would affect him or her, each patient was asked

if he or she would object to being included. It was made clear that although the interviewer was himself a doctor, he would take no part in their treatment either before or after discharge, nor would he in any way replace or be additional to the hospital staff or his or her own doctor.

Only 5 patients, or 1·25 per cent., at this stage declined to co-operate, mainly on the grounds that they could not see any necessity for this, and that they objected to this invasion of their private lives. About 3 per cent. expressed some objection but gave provisional agreement. Apart from doubts about the value and necessity for such a study, most objections were raised at the elicitation of personal histories, in particular income, and the use and dissemination of such information once given. They were reassured that such information would be treated as confidential and confined to a few persons in the Department of Public Health and Social Medicine. Subsequently none of these patients withdrew from the study, nor raised these objections again, and the relationship between interviewer and interviewed were, almost without exception, cordial throughout.

(2) *Initial Interview:* Once co-operation was obtained the interviewer elicited a brief medical history. Notes were also made on personal and family history, social circumstances, occupational history and present status. Any assistance received or about to be received from the almoner or other ancillary statutory or voluntary services was likewise recorded. Each patient was asked what he or she thought was his or her present illness, and what further treatment or advice had been given. On this, which sometimes could not be completed until the one-month visit, an assessment was made of how far each patient was aware of his or her condition and of any further treatment or care considered necessary.

Finally, each was advised to expect the first domiciliary visit four weeks from the date of discharge. No definite date or time was given for this, or for the subsequent visits, and no written notification of these visits was sent except to the patient's general practitioner, who always notified in advance, by letter, of the proposed visit.

On discharge, the medical staff was asked to complete a form for each of the patients included in the study, giving details of

the diagnosis, preventable factors influencing onset or course of illness, residual disability, further medical or nursing care, whether such was essential or desirable, suitability of present occupation, any modification or change of occupation necessary, and probable fitness for work within three weeks of discharge.

(3) *Domiciliary Visiting:* Every patient included was visited in his or her home at four weeks, twelve weeks, one year and two years, reckoned from the date of discharge from the medical ward in which first interviewed. Transfers to other hospitals or wards were treated as discharges. At such home visits, information was recorded of the patient's progress in terms of:—

(*a*) Medical condition—including residual symptom, and continuing treatment.
(*b*) Any other illnesses since last interview.
(*c*) Disability—if any.
(*d*) Time off work—through illness
through unemployment
(*e*) Occupation and housing—with any changes since last interview.
(*f*) Effect of illhealth on financial circumstances.

Where relapses, other illnesses, or time off work had occurred, the interviewer attempted to elicit the circumstances leading up to these episodes, recording any apparent preventable factors. Physical examination of the patient was normally carried out in relation to the system or systems to which the patient's initial hospital illness and present symptoms related. This was not in any sense an exhaustive clinical examination but was only intended (*a*) to provide some objective corroboration of the symptoms of which the patient complained, and (*b*) to enable some assessment to be made of the progress or otherwise in the medical condition of the patient since the previous visit. At the end of each visit, which very rarely lasted less than 40–45 minutes, and quite often longer, each patient was advised when to expect the next visit.

Such, therefore, was the method of conducting this particular study, but some observations may be made on the practical problems encountered.

In regard to the hospital staffs and general practitioners, no real problems arose, and where co-operation was given it was whole-hearted and tolerant of the extra work this study imposed on them.

Co-operation from patients was equally good, and the interviewer rarely met with any resistance or hostility during domiciliary visits, being made welcome in a very friendly manner. In the majority of instances domiciliary interviews were largely conducted in the presence of the patient's family. This might seem to be a disadvantage, but in practice it proved to be otherwise, in that the family were not generally at all diffident about correcting any false impressions or statements made by the patient. Sometimes, on leaving, the interviewer would be taken aside by a relative, and told a few home truths, and given the correct answers to some of the questions asked. This was particularly valuable in determining whether any preventable factors were operating—such as failure to follow advice or treatment given by the hospital or general practitioner. Some of the information could be checked from the hospital in-patient or out-patient records and in a few cases where some doubt existed, the patient's own doctor was approached.

One of the practical problems of such studies is that of finding the patient at home at each visit. Ideally, some form of written appointment would appear advisable. In this study this was not attempted, and apart from being told the interval between each visit, no appointment was made, though patients were advised whether the next visit would be by day or evening. This method had the advantage of producing the minimum effect on the normal running of the home and thus allowed the interviewer to see the patient in his or her normal home environment.

Only in a few cases was a desire expressed in favour of a set appointment. In practice, the system adopted worked reasonably well, the majority being seen at the first attempt. Sometimes two calls had to be paid, and in a very small proportion—not more than 2–3 per cent.—several calls. It was not possible to ascertain why this was so, but the interviewer got the impression that where more than 3 calls had to be made, the patient was not anxious to be interviewed, though this was never openly expressed.

Another advantage in this method was that one could spend longer on one visit if necessary, without watching the time too closely, as would have occurred if set appointments were given. There was thus no element of hurry, and this made for a more relaxed atmosphere. Again, if a proposed call was fruitless, another in the same vicinity could be made, so there was generally little waste of time.

In only one instance during the follow-up period did a patient express a desire to withdraw from the survey, but in fact he did not refuse the next and final visit.

The study commenced on 1st September, 1957, and all follow-up visits were completed by the end of May, 1960.

Appendix

Summary of Potential and Actual Inclusions

Age Limit 16–60 *yrs. reckoned from date of discharge*

*Commencing dates:**

Males *D.R.I.* & *M.H.* 1/9/57 *A.I.* 2/10/57 *Closed* 7/5/58

Females *D.R.I.* 1/1/58 *M.H.* 4/5/58 *Closed* 22/5/58

Potential totals			*Male*	*Female*	*Total*
D.R.I.	Male 210	Female 136			
M.H.	Male 137	Female 7	417	143	560
A.I.	Male 70	Female –			

Excludes those already in survey or readmitted (12)

Included in survey					
D.R.I.	Male 148	Female 94			
M.H.	Male 99	Female 6	300	100	400
A.I.	Male 53	Female –			
Excluded totals					
D.R.I.	Male 62	Female 42			
M.H.	Male 38	Female 1	117	43	160
A.I.	Male 17	Female –			
			417	143	560

Details of Exclusions				
(*a*)	Non-co-operative G.P.'s (4)	23	5	28
(*b*)	Late request by G.P.'s	1	3	4
(*c*)	Non-co-operative patients	2	3	5
†(*d*)	Living outside area of survey D.R.I.	40	27	67
	M.H.	27	1	28
	A.I.	15	—	15
(*e*)	Permanently hospitalised D.R.I. (1) M.H. (2)	3	—	3
‡(*f*)	Overnight/day or admitted in error	5	1	6
(*g*)	Omitted in error or not traced	1	3	4
	Total	117	43	160

* D.R.I. = Dundee Royal Infirmary: M.H. = Maryfield Hospital: A.I. = Arbroath Infirmary.

† These include 6 male patients (D.R.I. 1, M.H. 4, A.I. 1) whose domicile was uncertain on discharge.

‡ Admitted for L.P., paracentesis, etc. or in error (1 case should have gone to King's Cross Hospital).

2

The Patients as Seen in Hospital

In this chapter a general picture of the sample of 400 patients (300 male and 100 female) included in this study will be given. These patients were consecutively discharged from acute general medical wards, without selection other than by source, age and domicile, as described in Chapter I. Selection by source could lead to little bias, under the system of admission to the hospitals concerned.

Social Class and Civil State

Distribution by social class, based on the Registrar General's classification, approximated to the social class distribution in the city of Dundee, where nearly seven-eighths of the patients resided. Very nearly half the sample were in social class III (Table 1).

Table 1. *Distribution by Social Class of patients included in this study with comparable figures for the city of Dundee*

Social Class	*Males*		*Females*	*Total %*	*Dundee %*
	No.	%			
I and II	41	13·7	10	12·75	12
III	148	49·3	49	49·25	52
IV	42	14·0	25	16·75	18
V	66	22·0	16	20·5	18
Unclassifiable	3	1·0	—	0·75	—
Totals	300	100	100	100	100

Of the 3 patients not classified, two were students, and the other a man whose occupation was not elicited, and who died before the first domiciliary visit.

Of the sample, 77·6 per cent. of the males and 60 per cent. of the females were married or had remarried.

TABLE 2. *Civil state of patients in this study, with comparable figures for persons between the ages of* 15 *and* 59 *resident in the city of Dundee* (1951 *Census*)

	Males		1951 *Census Dundee*	*Females*	1951 *Census Dundee*	*Totals*	
	No.	%				*No.*	%
Married/Remarried	233	77·6	65·0	60	59·5	293	74·25
Widowed	4	1·4	2·2	9	6·1	13	3·25
Divorced/Separated	15	5·0		7		22	5·50
Single	48	16·0	32·8	24	34·4	72	18·0
Totals	300	100	100·0	100	100·0	400	100·0

Though the numbers are small, in terms of disease groups there is a relative excess of single women suffering from digestive system disorders; single men contribute more than their share to the tale of psychiatric disorders. In the two largest disease groups—circulatory and respiratory—there is no significant difference by sex or civil status.

TABLE 3. *The civil state of patients in certain disease groups*

	Psychiatric			*Cardiovascular*			*Respiratory*			*Alimentary*		
	M.	*F.*	*Tot'l*	*M.*	*F.*	*Tot'l*	*M.*	*F.*	*Tot'l*	*M.*	*F.*	*Tot'l*
Single, Divorced, Sep'rtd., Widowed	6	–	6	13	10	23	14	7	21	11	6	17
Married/ Remarried .	3	2	5	59	14	73	73	14	87	33	4	37
Total in sample	9	2	11	72	24	96	87	21	108	44	10	54

Age and Sex Distribution

This is given in the following table (Table 4).

TABLE 4

Age and Sex Distribution

Age Group	*Males*		*Females*	*Total*	%	
	No.	%			*This study*	1951 *Census*
16—29	39	13·0	13	52	13	35
30—39	53	17·6	19	72	18	23
40—49	61	20·4	23	84	21	23·5
50—60	147	49·0	45	192	48	18·5
Totals	300	100	100	400	100	100

There is a slight difference between the sexes in the three upper age groups, the proportion of females being increased in the 30–39 and 40–49 age groups, but this is balanced by an excess of males in the 50–60 age group. To some extent the smallness of the female sample would tend to lead to such discrepancies, but it is mainly due to a proportionate excess, in the 30–39 age group, of those with conditions classified in the 'miscellaneous' group and, in the 40–49 age group, those with diseases of the circulatory system.

Since chronic rheumatic heart disease is more common among females, and the special interest of the professorial medical unit is cardiology, this finding is not unexpected; indeed, it is surprising that the difference is not greater. Among males the increase is almost wholly in the respiratory and circulatory groups of diseases.

The comparative figures provided are derived from the 1951 census, and are those for Scotland: the Scottish figures more closely approximate to those for Dundee than do those for the County of Angus.

The comparison does show very clearly the striking increase in hospital morbidity in the over-50 age groups. Up to this age the proportion of in-patients was lower than the proportion of both sexes and of the same age groups in the general population, though with increasing age the ratio progressively decreased.

This marked increase occurred predominantly in the circulatory and respiratory groups of diseases.

Nature of Disease

In this study three main groups of diseases account for fully 64 per cent. of the cases. First in order of frequency are diseases of the respiratory system, affecting no less than 27 per cent. of all patients. Next come diseases of the circulatory system, 23·75 per cent., and third, a long way behind, disease of the digestive system, with 13·5 per cent. None of the other main groups of diseases accounted for as much as 10 per cent. of the total number of patients (Figure 1). The figures for respiratory diseases include 5 male and 3 female patients who had bronchial asthma and are normally coded under 'Allergic etc. Diseases' in the International Statistical Classification of Diseases Injuries and Causes of Death 1955.

The predominance of respiratory diseases was a feature of this investigation in Dundee. In the early months of the study the Asian influenza epidemic reached the city, its peak occurring in the October-December period of 1957. However, during this epidemic the local fever hospital (King's Cross) undertook the treatment of all such cases requiring in-patient treatment, thus relieving the general medical wards of what would have been a very heavy demand on their resources. Comparison of admissions for respiratory conditions over the same 8–9 month period in the previous 2 years (1954–55 and 1955–56) did not suggest that the numbers obtained during this study period were excessive. In short, it is believed that the excess of respiratory cases was real and not the result of the influenza epidemic.

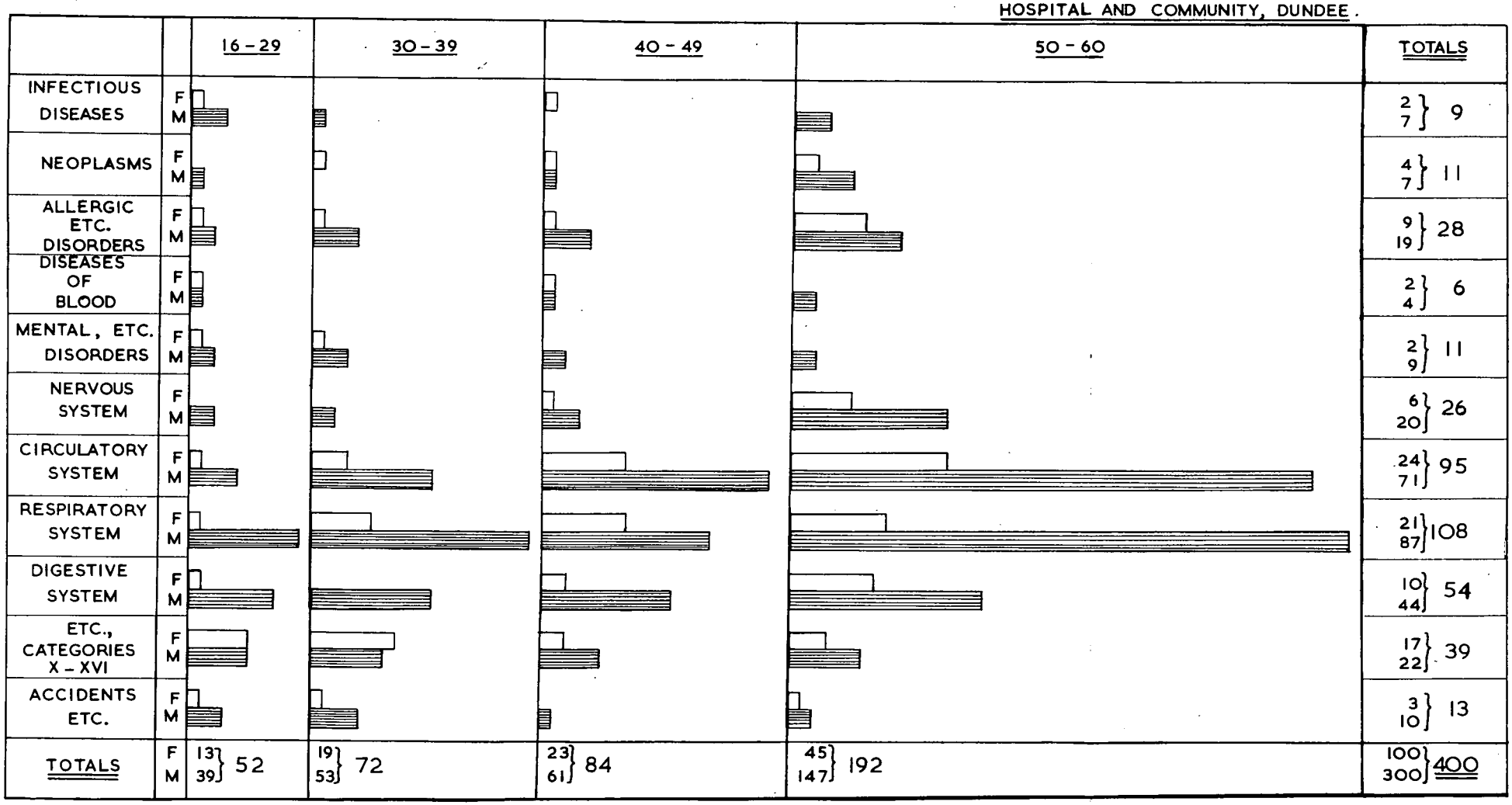
Type of Admission

As will be seen five-sixths of the male and three-quarters of the female hospital admissions were classed as emergencies, although only 37·5 per cent. of all admissions were for illnesses of under 24 hours' duration, or which on first attendance the general practitioner felt required immediate admission to hospital. Patients admitted from the waiting lists comprised only 15·25 per cent. of the total, and transfers from other wards or hospitals only 2·5 per cent. Approximately 7 per cent. of emergency admissions were from the medical out-patient and casualty departments.

FIG. I.

DISEASE DISTRIBUTION BY AGE AND SEX

"HOSPITAL AND COMMUNITY", DUNDEE.



DISEASE CATEGORIES TAKEN FROM "INTERNATIONAL CLASSIFICATION OF DISEASES", 1955.

Reasons given for admission were almost always medical, social circumstances being quoted in less than 2 per cent. of cases. No patients were admitted for purely social reasons. Admissions for investigation and assessment accounted for only 6 per cent. of the males and 11 per cent. of the females.

Duration of Illnesses

Of the patients included in this investigation, 198 (49·5 per cent.) had had symptoms for less than one week; 74 (18·5 per cent.) for 1–4 weeks, and 50 (12·5 per cent.) for 1–3 months; in 10 per cent. (40) the symptoms demanding admission had been present for more than one year. But 240 (60 per cent.) had already had other than emergency treatment for their condition prior to admission. The illness which necessitated hospital stay was recurrent in 41·5 per cent. of the patients admitted, and in more than half of these had been so for at least 5 years.

In the course of the preceding 7 years 55 per cent. of all the patients in the study had had one or more periods of in-patient treatment. The following table (Table 5) gives this in detail and shows that nearly two-thirds of the females had been in hospital previously, a quarter of them on 3 or more occasions.

TABLE 5. *Hospital admissions since* 1950

No. of Admissions	1—2	3—4	5+	10+	Totals
Males (300) Females (100)	111 (37%) 38	35(11.7%) 16	9 (3%) 10	1(0·3%) —	156 (52%) 64
Totals	149 (37·25%)	51 (12·75%)	19 (4·75%)	1 (0·25%)	220 (55%)

Amongst the male patients, the proportion of previous admissions was significantly higher in those with psychiatric disorders and those in the 'accidents, poisonings and violence' group of conditions, and was low in the neoplasm group. In no disease group in the female sample was the proportion of patients with previous admission less than half. Where the numbers in a group were large, as in those of the respiratory, circulatory and digestive system diseases, the usual

proportion was just over half, being highest in the respiratory and digestive system groups.

Time off work through illness in previous 5 years

Excluding those for whom information could not be obtained, since they were, with one exception, not eligible for sickness benefit, only 17 per cent. of the patients (54 males, 7 females) had not lost any time from work through ill health in the previous 5 years. In the majority of cases the total period off sick was not more than 6 months, as the following table shows (Table 6).

TABLE 6. *Total period off sick in previous 5 years*

	N.A.	*Nil*	*Up to 6/12*	*7/12–1 yr.*	*1 yr.+*	*5 yrs +*	*Total*
Males	3*	54	174	17	40	12	300
Females	35	7	33	6	12	7	100
Totals	38	61	207	23	52	19	400

* 1 adult—this time not elicited at the original and only interview
2 students (Not eligible for Sickness Benefit)
35 females—house duties only (Not eligible for Sickness Benefit)

In the period immediately preceding admission, 160 of the 362 patients eligible (44 per cent.) were on sickness benefit, 70 of them for more than 3 months.

It can be seen, therefore, that more than half the patients studied had had previous in-patient treatment and almost three-quarters had had periods of ill health causing loss of work in recent years. In 171 cases (43 per cent.) there was a history of an earlier similar or related illness.

It would be appropriate here to record that out of the sample of 400 patients no less than 272 (194 males, 78 females) had primary or secondary conditions (relative to the current illness) of a recurrent or chronic nature. More will be said of this aspect in a later chapter, since it is against such a background that progress must be judged.

Duration of stay in hospital

Eighty-one per cent. were discharged within 4 weeks and all but 5 patients (1·25 per cent.) within 3 months. The average duration of stay for males was 19·23 days, for females 16·23 days.

In general, stay in hospital was shorter among female patients, largely because of the greater number of convalescent beds available to them. While only 27·2 per cent. of the males spent a period in a convalescent hospital, the corresponding figure was 42 per cent. for the females. This period of convalescence was generally one week, rarely two.

Accelerated discharge (self-discharge or for urgent personal reasons) accounted for only 3·6 per cent. of the male and 5 per cent. of female totals, while transfer to another ward (usually a surgical ward) or another hospital for further specialised investigation, accounted for about a further 20 per cent.

Condition on discharge

As will be observed from Table 7 the majority of patients were classified, by the hospital physicians, as 'improved'. The relatively greater number of female patients whose condition was considered unchanged is attributable to a relative excess of females (*a*) in the neoplasm group (4 females, 7 males) and (*b*) admitted for investigation and assessment only (11 females, 18 males).

TABLE 7. *Condition on Discharge*

	Cured	*Relieved*	*I.S.Q.*	*Worse*	*Total*
Males	41	205	51	3	300
Females	6	68	26	—	100
	47 (11·75%)	273 (68·25%)	77 (19·25%)	3 (0·75%)	400

After-Care

The hospital medical staff considered after-care or treatment to be essential in 36 per cent. (100 males, 44 females), desirable in a further 50·25 per cent. (158 males, 43 females), and not needed in only 13·75 per cent. (42 males, 13 females).

Of the 86·25 per cent. (258 males, 87 females) considered to require some further care or treatment following discharge,

19·75 per cent. (60 males, 19 females) were transferred to another ward or hospital for this. The remainder, 66·5 per cent., were discharged to the care of their own doctors, though review at either the medical out-patient or a special clinic, e.g. diabetic, chest, etc., was recommended in 40·25 per cent. (125 males, 36 females).

Three per cent. of male and 1 per cent. of female patients were considered to require further investigation or further in-patient therapy and were discharged to await this, as in these cases the further investigation could not then be undertaken.

Disability

At the hospital interview, an assessment of the degree of disability was made on clinical grounds by the interviewer, having regard both to the main condition under treatment and to any other underlying or coincident conditions. The object was to grade patients according to the degree of impairment of function for normal everyday activities, and their probable capacity for work. The grades used were as follows:—

MARKED—Symptomatic on mild activity and only capable, at best, of wholly sedentary work.

MODERATE—Symptomatic on moderate exertion and capable of light work.

MINIMAL—Symptomatic on marked exertion and capable of all but heavy manual work.

TABLE 8. *Disability on Discharge*

	Marked		*Moderate*		*Minimal*		*Temporary/ Nil*		*Totals*
	M.	*F.*	*M.*	*F.*	*M.*	*F.*	*M.*	*F.*	*M. & F.*
Residual	15	12	41	17	63	20	—	—	168 (42%)
Other . .	9	3	22	8	32	3	—	—	77 (19·3%)
Temporary/Nil	—	—	—	—	—	—	118	37	155 (38·7%)
Totals .	24	15	63	25	95	23	118	37	400 (100%)
%	8	15	21·3	25	31·6	23	39·3	37	

In 28 (23 males, 5 females) both a residual and another disability co-existed; these have been included under the major disability, or where the grading was similar, under the residual total.

Thus on discharge 245 patients had some disability of more than a temporary nature, and in 127 the degree of disability was moderate or marked. Of the total disabled in some measure, a mere 43 were currently on the Disabled Persons Register, and a further 17 had been, but had allowed their registration to lapse. Not all so registered were in the severer grades of disability as assessed in this study.

Estimate of fitness for work and suitability of present work

On discharge, the hospital medical staff estimated that 32·25 per cent. of cases (102 males, 27 females) would be fit for work in 3 weeks. Current occupation was assessed as suitable in 69 per cent. (213 males, 38 females); some modification, or change of occupation, was considered advisable in only 18 per cent. (53 males, 13 females). A further 13·2 per cent. (34 males, 14 females) were assessed as unfit for work.

Excluded from the estimate and assessment of occupational suitability were the 35 females who were not employed outside their homes.

Summary

In summary, there emerges the picture of a representative sample of the population under study, in which over one-third were between the ages of 50–60 years; in which more than two-fifths gave a history of an earlier similar or closely related illness; and over a half had been admitted to hospital at least once in the previous seven years. Nearly two-thirds suffered from a chronic or recurrent condition, and respiratory and circulatory diseases, in that order of frequency, were by far the commonest, accounting between them for nearly half of the cases studied.

3

The Follow-up Domiciliary Visits

FOLLOW-UP domiciliary visits were made at intervals of 1 month, 3 months, 1 year, and 2 years from the date of discharge. Except in a very small proportion, all visits were paid within 3 or 4 days of the due dates.

The average percentage of patients seen, for the three visits on which this report is based, was 84 per cent. Recorded in Table 9 are the numbers of patients seen at each of these visits. The total numbers seen 1 and 2 years after discharge were very similar. It will be noted that the proportion of females seen was slightly higher at all visits; this was largely attributable to the greater numbers of males who left the area covered by this study.

TABLE 9. *Numbers seen at each visit*

	3/12	1 *year*	2 *years*
Male . .	266 (88·7%)	244 (81·3%)	243 (81·0%)
Female .	89	85	82
Total . .	355	329	325
%	88·75	82·25	81·25

The reasons for inability to visit the 16 per cent. of patients not seen in their own homes are set out in Table 10.

TABLE 10. *Numbers not seen—by cause*

	Deaths			*Readmissions*			*Removals*		
	3/12	1 *yr.*	2 *yrs.*	3/12	1 *yr.*	2 *yrs.*	3/12	1 *yr.*	2 *yrs.*
Males .	14 (4·7)	28 (9·3)	39 (13·0)	15 (5·0)	15 (5·0)	6 (2·0)	5 (1·7)	13 (4·3)	12 (4·0)
Females .	3	11	16	7	3	1	1	1	1
%	4·25	9·75	13·75	5·5	4·5	1·75	1·5	3·5	3·25

The combined death rate rose from 4·25 per cent. at 3 months to 13·75 per cent. at the end of the study. Except at 3 months, the numbers who died were relatively higher among females.

The reverse was observed in the numbers readmitted to hospital, which were highest at 3 months and lowest at 2 years. The sex ratio was also reversed.

Included under 'removals' were 3 young men who commenced their National Service during the course of this study. Four men and 1 woman left the area, but returned later and were seen at the final visit.

One of the males in the 'readmission' group was transferred, on discharge, to another hospital, from which, for mainly social reasons, he had not been discharged by the end of the study. He was obese, and severely disabled by repeated cerebro-vascular accidents, and was too heavy a nursing problem to be returned home.

Cause of death in the majority of cases was the disease-condition which led to admission to hospital in the first instance.

(1) *The medical state of those seen in their own homes*

For the purpose of summarising the position at each visit, the following classification has been used:—

Improved —Fit or relieved } relative to the medical
Not Improved—I.S.Q. or worse } state on discharge

From Chapter 2 it will be remembered that on discharge 80 per cent. were improved. By 3 months this figure had fallen to 72·25 per cent.; by 1 year to 66·75 per cent.; and by 2 years to 59·75 per cent.

On discharge 20 per cent. were not improved. Including those who had died or had been readmitted, the percentage not improved was, at 3 months, 26·0 per cent.; at 1 year 29·75 per cent.; and at 2 years 37 per cent.

Excluded from these figures are all who, at the visits in question, had left the area. The composition of these categories is detailed in Table 11.

There was no significant difference between the sexes in point of clinical performance at the times of visit during the follow-up period.

TABLE 11. *Summary of medical state at 3 months, 1 yr. and 2 yrs.*

	3/12				1 yr.				2 yrs.			
	M.	*F.*	*T'tl*	%	*M.*	*F.*	*T'tl*	%	*M.*	*F.*	*T'tl*	%
Improved	217	72	289	72·25	203	64	267	66·75	179	60	239	59·75
Not Improved	78	26	104	26·00	84	35	119	29·75	109	39	148	37·00
Not seen—removed	5	2	7	1·75	13	1	14	3·5	12	1	13	3·25
Totals	300	100	400	100	300	100	400	100	300	100	400	100
Details of 'Not Improved' category												
Seen	49	17			41	21			64	22		
Not seen												
I.P.	15	6			15	3			6	1		
Dead	14	3			28	11			39	16		
Totals	78	26			84	35			109	39		

Clearly, these findings were applicable only to three particular dates in the 2-year follow-up, and did not necessarily reflect the medical state of these patients during the intervals between visits. By combining the number of those who had died, were or had been readmitted to hospital, and all who had relapsed or had some other illness during the intervening period, a better estimate of their medical progress can be obtained for each visit (Table 12).

TABLE 12. *Totals of deaths, relapses and occurrence of other illnesses*

	Discharge to 3/12				3/12—1 *yr.*				1 *yr.*—2 *yrs.*			
	M.	*F.*	*T'tl*	%	*M.*	*F.*	*T'tl*	%	*M.*	*F.*	*T'tl*	%
Seen:												
Relapses												
Readmission	24	9	33	9·0	21	11	32	8·0	28	12	40	10
Not readmitted	39	20	59	14·75	35	8	43	10·75	51	9	60	15
Other Illnesses												
Readmission	10	2	12	2·5	15	6	21	5·25	25	8	33	8·25
Not readmitted	28	13	41	10·25	30	19	49	12·25	39	20	59	14·75
Not Seen:												
I.P. at visit	15	6	21	5·5	15	3	18	4·5	6	1	7	1·75
Dead	14	3	17	4·25	28	11	39	9·75	39	16	55	13·75
Totals	130	53	183	46·25	144	58	202	50·5	188	66	254	63·5
%	43·3	53·0	45·7	—	48·0	58·0	50·5	—	62·7	66·0	63·5	—

Except for a slight decrease in the relapse rates for the period between 3 months and one year after discharge this table indicates a steady rise in the total morbidity/mortality rate, from an average for both sexes of 46 per cent. at 3/12 to 63 per cent. at 2 years. Throughout, the proportion for females is higher than for males, but this is based on a smaller sample, and only approaches significance in the initial 3/12 period.

An interesting and quite striking feature revealed by this table is the high morbidity rate in the three months following discharge. This will be reflected in several other tables and diagrams, and possible reasons for this will be discussed in later chapters.

It will be appreciated that some patients are included in these figures on more than one occasion. Although 217 readmissions are here recorded, the actual number of patients who were readmitted to hospital at least once over the 2 year period was 136, or 34 per cent. of the numbers studied. Readmission rates were equal for males and females. Altogether, 109 patients were admitted once or twice; 22 three or four times, and 5 (all males) on five or more occasions.

In all, 245 patients had one, or more, periods of illness in the 2 years following discharge from hospital; about half had two or more such periods. Relapses, a recurrence, or frank exacerbation of the symptoms that had brought the patient to hospital—occurred about twice as frequently as other illnesses, though this ratio naturally varied from one disease group to another.

Time lost from work through illness during the 2-year follow up.

This could be calculated with accuracy only for those eligible for sickness benefit, and for those seen at the final 2-year visit. The number seen at this visit was 325, of whom 23 were housewives, while 2 of the males were students, so that only 300 were in fact eligible for benefit.

Further, as the period of convalescence after discharge was not included in this calculation, the 45 patients (31 males and 14 females) who were seen at the 2-year visit, but who had not become fit for work by that visit, were excluded.

Of the remaining 255 patients, 175 (135 males and 40

females) lost time from work through illness. The total duration of periods of time lost was as follows:—

Less than 4 weeks	65 patients (48 males 17 females)
1–6 months	75 patients (65 males 10 females)
6–12 months	20 patients (17 males 3 females)
Over 1 year	15 patients (5 males 10 females)
	175

This figure does not correspond with that given for the number of patients who had a relapse or other illness, since some of these did not stay away from work and, of course, the numbers of patients from which these figures were derived were quite different.

Medical care and treatment

This can best be described in terms of 'required', 'received in full or in part', and 'not needed', for the period between interviews and only for patients seen at each visit. This is shown in the following table (Table 13).

TABLE 13. *Medical care and treatment*

	3/12				1 *yr.*				2 *yrs.*			
	M.	*F.*	*T'l*	%	*M.*	*F.*	*T'l*	%	*M.*	*F.*	*T'l*	%
Not needed	24	4	28	7·9	34	11	45	13·7	32	7	39	12·0
Needed:												
Received	183	63	246	69·3	160	59	219	66·6	166	62	228	70·1
„ in part	39	13	52	14·6	34	7	41	12·4	27	10	37	11·4
Not received	20	9	29	8·2	16	8	24	7·3	18	3	21	6·5
Totals (seen)	266	89	355	100	244	85	329	100	243	82	325	100

The amount of treatment or care required and received varied considerably, and was provided from various sources—in the main from the general practitioner, either alone or in conjunction with the various out-patient departments and special clinics. The main features of interest in this table are (*i*) the very low proportion who, at the several visits, did not then, or between each visit, require any form of medical

treatment, or advice; and (*ii*) the proportion who, requiring some treatment, did not receive it. Failure of provision, failure to seek it, or failure to carry out the treatment prescribed, were the principal reasons for this. A more detailed examination of this aspect is made in Chapter 4.

(2) *Occupation*

Duration of convalescence after discharge. Within 3 weeks of discharge, 107 patients (26·75 per cent.) had become fit for work. This is a little lower than the estimate made by the hospital physicians (see Chapter 2). By 3 months this number had increased to 257 (64·25 per cent.) and by one year to 301 (72·25 per cent.).

Of the 400 patients included in the study, only 93 (66 males and 27 females) (23 per cent.) were not considered fit for work at any time during the follow-up period of 2 years. In one case, that of a male patient who left the area within 3 months of discharge, the duration of convalescence was unknown.

Thus 306 patients (76·5 per cent.) at some time during this study were considered fit for work. In a small proportion, a relapse or other illness soon rendered them again unfit—in some, within a few days. Three months after discharge, this happened to 31 of the 266 patients then seen. At 1 year, this figure had risen to 51 and at 2 years to 64. Some never recovered sufficiently to return to work subsequently. These figures refer only to those seen at the respective visits. It was not possible to determine the precise number in which this occurred, but from the number seen 2 years after leaving hospital the proportion was probably about 20 per cent.

Return to work. Although 306 patients were known to have become fit for work, only 295 actually returned to work. In 183 cases, the job was the pre-admission one, and these patients did not change their jobs during the follow-up period. Changes of job were made by 89 patients, of whom 49 had 2 jobs, 21 had 3, 12 had 4, and 7 had 5 or more jobs in the 2 years. The remaining 23 were housewives.

Of the 35 females, initially classified as 'housewives only', 6 subsequently took remunerative employment and 6 were too ill throughout to resume even modified house duties.

The numbers of patients in employment at each of the three

visits were 217 (171 males, 46 females), 217 (174 males, 43 females), and 215 (169 males, 46 females) respectively. These numbers include housewives who were carrying out their normal house duties, either in full or in substantial part—23, 23 and 19 respectively.

The numbers unemployed, though fit, were respectively 17 (10 males, 7 females), 24 (14 males, 10 females) and 19 (11 males, 8 females). Of the females who were unemployed, 4 did not want to return to work.

Thus the average percentage employed was 59 per cent. and unemployed 5 per cent. The position in regard to employment of the remaining patients is given in Table 14.

TABLE 14. *Patients removed, or unfit for work, or dead*

	3/12			1 *yr.*			2 *yrs.*		
	M.	*F.*	% *Total*	*M.*	*F.*	% *Total*	*M.*	*F.*	% *Total*
Temporarily unfit or in hospital . .	83	29	28·0	54	20	14·0	40	11	13·0
Not seen—removed .	5	2	1·75	13	1	3·5	12	1	3·25
Permanently unfit .	17	14	7·75	17	15	8·0	19	18	9·25
Dead . . .	14	3	4·25	28	11	9·75	39	16	13·75

Suitability of employment

Taking into consideration the medical condition of the patient, his or her occupation was assessed as 'suitable', 'partially suitable' or 'unsuitable'. This assessment was based on the likely effect of the following features of the occupation on the patient.

(1) Degree of responsibility
(2) Tempo of work (piece or bonus work)
(3) Physical demands of the job
(4) Hours (irregularity; shifts etc.)
(5) Atmospheric pollution (dust; fumes etc.)
(6) Working environment (outdoor; dampness etc.)

These features, where present, and whether adverse or not, were recorded at each visit. The information on them was

obtained by questioning the patient, as it was not possible to obtain this by first-hand observation.

Of those in employment, the work was considered unsuitable in 17·5 per cent. (37 males, 1 female) at 3 months; 12·4 per cent. (27 males) at 1 year, and 9·8 per cent. (18 males, 3 females) at 2 years.

The total number of patients who were classified as in other than suitable employment in the course of the study was 53 (49 males, 4 females). Of those, 17 males were in suitable occupations at 2 years, 21 (18 males, 3 females) were not, 14 (13 males, 1 female) were unfit for work, and 1 male had died. Of the 17 cases in which occupation was no longer considered to be prejudicial, 13 had changed to other jobs. In the remaining 4 cases, the occupation was modified, or no longer presented adverse features.

In general, modifications in the type of work were carried out on the initial return to work, rarely subsequently. About 10 per cent. of the employed male patients had their work permanently modified in some way. In a small proportion, modification of work was only temporary, until the patient was able to resume his former job. More often than not, these modifications were effected mutually between the patient and his employer. This was possible amongst skilled workers, but amongst patients in the unskilled groups modification was rarely attainable and change of occupation was the only solution. This, at a time when unemployment was increasing locally, was not easy to achieve, and, of the reasons advanced for not changing from an unsuitable occupation, the most common was just this difficulty of finding another. As the patient was usually unskilled, and often over 50 years of age, this reason was quite valid. Another reason, almost as common, was the financial effect of a change—a drop in income which the patient was naturally reluctant to accept. In about a third of the cases change would have meant the loss or reduction of retirement or other benefits. Even a better wage could not replace these.

On the whole, change to more suitable employment was accepted by the patient only when it had become unmistakably clear to him that his old job was too much for him, or alternatively when he had lost it.

Attitude to work

Of males not employed, yet able-bodied, between one-quarter and one-third did not appear keen to obtain employment. The proportion was even higher among females, due substantially to the number of women who had formerly taken employment outside the home to supplement the family income—initially 27 of the sample of 100. Many of them did not really require to work for financial reasons, and when they fell ill there was less incentive to return, as well as, in some cases, overt family disapproval of a resumption of work. In two instances the husband frankly forbade a return to work. The usual economic pressures operated amongst those women who were living on their own resources, and their attitude to work was comparable to that of the men.

Disabled persons registration

Including 23 (19 males, 4 females) registered under the Act for the first time, plus one re-registration, a total of 64 (53 males, 11 females) were on the Disabled Persons Register at the end of the two years' study. This represented 26·1 per cent. of the total number who, on discharge, were assessed as having some degree of lasting disability. The definition and grading are given in Chapter 2. There was no correlation between this grading and registration under the Disabled Persons (Employment) Act 1944—at least 5 patients, here classified as 'minimal', were in fact registered and others with moderate or severe gradings were not. Many of the patients who had some disability were reluctant to accept registration, except as a last resort, by which time their medical condition was such that placement was difficult.

(3) *Domestic environment and circumstances*

(*a*) *Household.* Initially, just over 5 per cent. of the patients lived alone, but by the end of the study this proportion had increased to 8 per cent. This increase occurred almost wholly among females, of whom twice as many were living alone at the end of the study as at the beginning.

Among males the increase was very slight; the proportions were roughly equal at the beginning and at the end of the study.

(*b*) *Housing conditions.* These were considered satisfactory in an average of 61 per cent. of patients who were seen at each of the visits. This percentage was 58 per cent. at 3 months and 62 per cent. at the other two visits. Of such patients, approximately 89 per cent. were in local authority housing, though this percentage dropped to 87 per cent. at the 1 year visit.

At 3 months, 3·4 per cent. of patients were in houses with gross defects—condemned property—but at 2 years only 1·2 per cent. (4 patients) were still living in grossly defective housing.

The remaining housing (35 per cent.) was classified as sub-standard—lacking, at least, a bath and hot water system. Expressed as a percentage of the number of patients seen at each visit, the common defects were:—

(1) An outside (relative to the flat or house occupied by the patient) or shared lavatory—26 per cent. at 3 months, 25 per cent. at 1 year, and 22 per cent. at 2 years.
(2) Dampness—in one or more rooms—17 per cent. at 3 months, 18 per cent. at 1 year, and 14 per cent. at 2 years.

Approximately 5 per cent. of households were overcrowded according to the legal standards of overcrowding in Scotland.

Over the 2 years, there was a slight general improvement in housing.

(*c*) *Home atmosphere.* In 2–3 per cent. of homes some tension, and occasionally open discord, existed between the patient and his or her family.

(*d*) *Finance.* The overall effect of the original admission and subsequent ill-health was estimated for all those seen at the 2 year visit.

In 47·4 per cent. (109 males, 45 females) illness had little or no financial effect. A temporary fall in income occurred in 24 per cent. (65 males, 13 females), and a permanent fall in 12 per cent. (32 males, 7 females), both of which were of such severity and duration as to lower the patient's financial status appreciably. In the remaining 16·6 per cent. (37 males, 17 females) an estimate could not be obtained for lack of a pre-admission standard on which to base assessment. This included all who had been unemployed before admission; those who had

retired, or who had only casual employment. In such cases, the income before and after in-patient treatment did not vary.

The financial position of those seen at 3 months, 1 year, and 2 years was assessed as 'difficult' in 17 per cent., 15 per cent., and 17 per cent. respectively of patients seen at these visits. Frank hardship was found in not more than 2 per cent.

Assessment of this nature is difficult since, apart from other family earnings, quite a number are eligible for full or half pay during sickness, or for sickness benefits from privately run schemes. Nearly two-thirds of the females were either housewives or supplementary wage earners; for most of the latter the loss of wages was of little moment.

(*e*) *Social agencies.* The various social agencies such as the almoner, disablement resettlement officer, home help service, Red Cross, etc., were little used.

Almoners interviewed 6 per cent. of the patients (20 males, 3 females) during their stay in hospital, and of those seen in their own homes, up to a further 4 per cent. had been helped by almoners after discharge.

Referrals to the disablement resettlement officer were even fewer; an average of only a little over 2 per cent. at any one visit.

More use was made of miscellaneous agencies providing extras such as clothing, coal, etc., but even these were invoked only in an average of 2–3 per cent. of patients. Home helps were provided in an average of 3 per cent. of cases.

Assessment of progress

Thus far, individual facets of progress have been reviewed, each providing a different measure of assessment.

But a mere record of the findings on 3 particular days in the course of 2 years does not necessarily give a true picture. Some consideration of the intervening months must be made. Therefore it was decided to make, at every visit, an assessment of progress for each patient seen. This took account of the medical state, between and at visits; the effects of occupation, and domestic and social circumstances on this state; and the degree of co-operation of the patient with advice and treatment given. Three categories were adopted:—

Satisfactory — Nil or minor relapses etc. not producing significant effect.

Fairly satisfactory— Relapses or other related or unrelated illnesses other than minor ailments; adverse preventable features in the occupational and environmental background. Deficiencies in therapy, or in co-operation, producing significant effect.

Unsatisfactory — Much ill-health and loss of work thereby. Marked deterioration in the medical state. Grossly adverse features present in the total environment. Gross lack of co-operation and deficiencies in care and treatment.

The assessments made at each visit are shown in Table 15.

TABLE 15. *Assessment of progress—Position at each visit*

	3/12			1 *year*			2 *years*		
	M.	*F.*	% *M.&F.*	*M.*	*F.*	% *M.&F.*	*M.*	*F.*	% *M.&F.*
Satisfactory . .	111	42	38·25	126	50	44·0	112	45	39·25
Fairly satisfactory .	129	42	42·75	109	26	33·75	104	29	33·25
Unsatisfactory . .	26	5	7·75	9	9	4·5	27	8	8·75
Totals . .	266	89	88·75	244	85	82·25	243	82	81·25
Not seen:—									
Moved . . .	5	2	1·75	13	1	3·5	12	1	3·25
Readmissions .	15	6	5·25	15	3	4·5	6	1	1·75
Dead . . .	14	3	4·25	28	11	9·75	39	16	13·75
Final totals . .	300	100	100%	300	100	100%	300	100	100%

However, since each period was assessed individually this table does not indicate whether the benefit obtained from the initial hospital in-patient treatment was maintained.

The proportion in which this benefit lasted throughout the 2-year follow-up period is obtained by combining the number of patients whose progress was assessed as 'satisfactory' at all three visits with those assessed as 'fairly satisfactory' at 3 months and 'satisfactory' at the other two visits. This was 30 per cent. (120 patients).

TABLE 16. *Patients obtaining lasting benefit*

	M.	*F.*	*Total*	%
Satisfactory all three visits	64	25	89	22·25
Fairly satisfactory at 3 months *and* satisfactory at 1 yr. and 2 yrs.	25	6	31	7·75
Totals	89	31	120	30·0
% of sample	29·7	31·0	30·0	

Obviously, those whose progress was assessed as 'unsatisfactory' at all visits, or at 3 months only, together with all who had died or had been re-admitted to hospital for the same condition within three months must be considered to have derived little or no benefit from their original hospital in-patient treatment. These number 90 (22·5 per cent.).

TABLE 17. *Patients obtaining little or no benefit*

	M.	*F.*	*Total*	%
Unsatisfactory—all three visits	1	1	2	0·5
—at 3/12 visit alone.	25	4	29	7·25
Readmissions —for the same condition	28	14	42	10·5
Dead before 3/12 visit	14	3	17	4·25
Totals	68	22	90	22·5
% of sample	23·7	22·0	22·5	

Those who were not seen at the final visit or at both the 1 and 2 year visits have been excluded from this estimate of benefit (Table 18).

TABLE 18. *Patients on whom no estimate was made*

	M.	*F.*	*Total*	%
Not seen at 1 and 2 year visits	18	5	23	5·75
2 year visit alone	8	5	13	3·25
Totals	26	10	36	9·0
% of sample	7·7	13·0	9·0	

Therefore the remaining 154 patients (117 males, 37 females) derived temporary benefit from their original hospital in-patient treatment. This is summarised in Table 19.

TABLE 19. *Summary of benefit derived from hospital treatment.*

	M.	*F.*	*Total*	%
Lasting benefit	89	31	120	30·0
Temporary benefit	117	37	154	38·5
Little or no benefit	68	22	90	22·5
No assessment made	26	10	36	9·0
Totals	300	100	400	100

Summary

The average proportion of patients in the study seen at each of the three follow-up visits was 84 per cent.; of the others, 9 per cent. were not seen at one or two of the visits and 7 per cent. not at all.

At the end of the 2 year follow up, 59·75 per cent. (179 males, 60 females) were classified as 'improved', and 37 per cent. (109 males, 39 females) as 'not improved'. Included in the latter figure were the 13·75 per cent. (39 males, 16 females) who had died, and the 1·75 per cent. (6 males, 1 female) who were then in hospital. The remaining 3·25 per cent. represented the 12 males and 1 female who had removed from the area and were not seen at 2 years.

No less than 61·3 per cent. (179 males, 66 females) had one or more relapses or other illness during this time, and 34 per cent. (102 males, 34 females) had been again in hospital, some on more than one occasion.

Of the 302 patients eligible for sickness benefit, 175 (135 males, 40 females) had been in receipt of this after the initial convalescent period.

At some time during the follow-up period, 306 patients became fit for work, one-quarter within 3 weeks, nearly two-thirds by 3 months, and three-quarters by the end of a year. Of these, 295 returned to work, and at 2 years 206 were still in their former occupation. These figures include 23 females who were housewives.

At the end of 2 years, adverse occupational factors were found in only 10 per cent. Housing was considered satisfactory at this time in 62 per cent., and financial effects resulting from the original admission to hospital and subsequent illhealth were observed in only 17 per cent. of those seen.

Considering the record of progress of each patient over the two year follow-up, 30 per cent. were assessed as having derived lasting benefit from their original in-patient treatment; 38·5 per cent. derived temporary benefit, and 22·5 per cent. derived little or no benefit. The remaining 9 per cent. were not seen at the final visit, so no assessment could be made in these cases.

4

Factors Influencing Progress After Discharge

THE influence on progress of various factors—general, medical and environmental, will now be considered.

Allowing for the smaller number of females, and differences in occupation, no convincing evidence was found that their progress after discharge was substantially different from that of the larger sample of males. Thus, except where obvious differences occur, no distinction will be made in this account between the sexes.

Social Class

Since the numbers in the Registrar General's social classes I and II were small, they have been combined, for the purposes of comparison, into a single group of 51 patients (41 males, 10 females). The proportions of each in the 'satisfactory' and 'unsatisfactory' assessments only, at each of the three visits, are shown in graph form in Figure 2 and contrasted with the averages for the whole sample.

The average percentage of removals in each class for the three visits was as follows:—

Social Classes I and II	3·9%
III	3·5%
IV	2·0%
V	0·8%

At all visits the progress of social classes I, II and III was found to be better than average, while that of social classes IV and V was worse. The same pattern emerges when the percentages 'improved' and 'not improved' are contrasted with the percentage averages for the sample (Table 20).

TABLE 20. *Social class in relation to medical progress: figures stated as percentage of totals at risk*

	Improved			*Not Improved*			*Not seen—moved*		
	3/12	1 *yr.*	2 *yrs.*	3/12	1 *yr.*	2 *yrs.*	3/12	1 *yr.*	2 *yrs.*
I & II (51)	74·5	70·6	58·8	21·6	19·6	37·2	3·9	3·9	3·9
III (197)	76·1	70·1	62·4	21·3	25·4	34·0	1·5	4·6	3·6
IV (67)	62·7	58·2	55·2	35·8	40·3	41·8	1·5	1·5	3·0
V (82)	68·3	64·6	57·3	31·7	34·1	41·5	—	1·2	1·2
N.A./N.K.(3)	66·6	33·3	66·6	—	33·3	—	33·3	33·3	33·3
Averages for Sample (400)	72·25	66·75	59·75	26·25	29·75	37·00	1·50	3·50	3·25

In both Figure 2 and Table 20, a sharp fall in the 'satisfactory' group in social classes I and II will be observed. It is clear that this fall is not attributable to removals to other places of domicile, which over the two years remained very steady in this group. To some extent it is attributable to a higher death-rate (15·7 per cent.) than the average (13·8 per cent.) but the main increase occurred in the proportion of patients who, between 1 and 2 years, had a further relapse or other illness. Examination of the various reasons for this deterioration showed that whereas at 3 months co-operation or compliance with advice and therapy was much better than average, at 2 years there was, in social class II, and solely among males, a marked increase in the numbers either not following advice given earlier, or not continuing with the therapy advised. Failure to attend for, or to seek, therapy, was the major cause of this increase. As neither the severity of the illnesses nor the degree of lack of co-operation could be considered gross, their progress was assessed as 'fairly satisfactory' rather than as 'unsatisfactory'. A similar increase was also noted in social classes III and V, though this was proportionately less than in social classes I and II. The increase in social class IV was not so marked, but this was largely because at 3 months their record in this respect was already poor in comparison with that of social classes III and V. In neither housing nor occupation was there an increase in adverse features. In fact, both showed a decrease in the

FIG. 2.

ASSESSMENT OF PROGRESS

SOCIAL CLASS

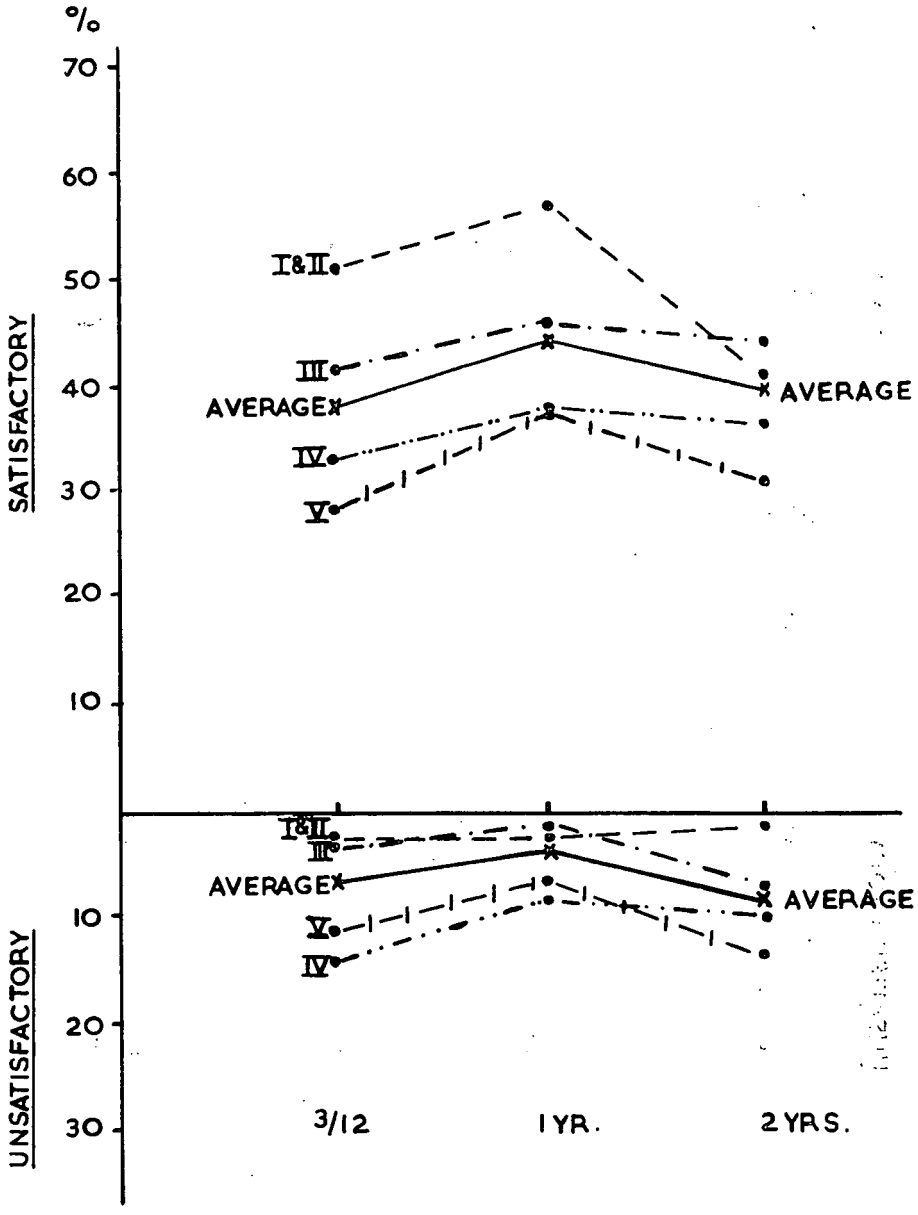
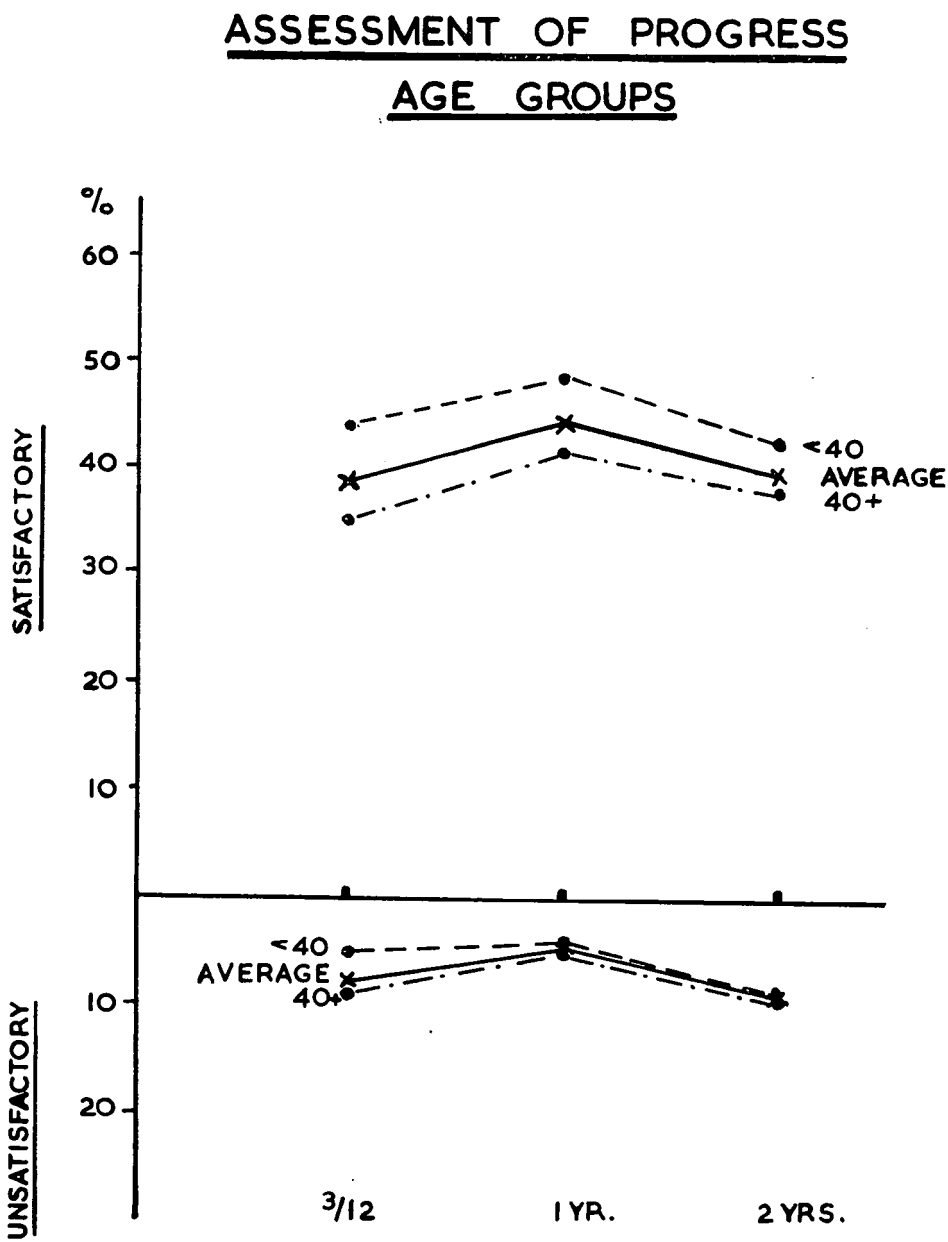


FIG. 3.


ASSESSMENT OF PROGRESS
AGE GROUPS
%
60
50
40
30
20
10
SATISFACTORY
<40
AVERAGE
40+
<40
AVERAGE
40+
10
20
UNSATISFACTORY
3/12
1 YR.
2 YRS.

numbers of patients affected. In social classes I and II, at 3 months, 5 per cent. had some adverse housing and occupational features, while at 2 years only in the case of 1 male patient was there any adverse feature and that only in regard to housing.

Age

Thirty-one per cent. of the patients (92 males, 32 females) were between 16 and 39 years of age, and 69 per cent. (208 males, 68 females) between 40 and 60 years. As mentioned earlier, a chronic or recurrent disease was present in 68 per cent. of the sample. The proportions of such patients in each were 27 per cent. in the under-40 age group and 73 per cent. in the over-40 group; thus in this respect, apart from age, the latter group were at a slightly greater disadvantage from the start.

Comparing these two broad age groups in respect of proportions of each classified 'satisfactory' and 'unsatisfactory', and further contrasting each with the average for the sample, the difference in progress is clearly in favour of the younger group (Figure 3). The results are expressed as percentages of the numbers in each age group.

In the 16–39 years age group, the fall in the percentage classified as 'satisfactory' at 2 years, as compared with the 1 year assessment, is attributable largely to the deterioration in the condition of several patients with chronic rheumatic valvular heart disease. The proportion of relapses and adverse occupational, housing and personal factors was, in this age group, lower at 2 years than at 1 year. Among the over-40's the fall, less marked, was attributable to an increase in the relapse rate, as well as to general deterioration.

When the two age groups are contrasted in terms of 'improved' and 'not improved'—since the latter category includes those who were in hospital and who had died—the over-40 group show the greater fall. Deaths in this age group increased from 35 one year after discharge to 51 after 2 years—an increase of almost 6 per cent. (Table 21).

TABLE 21. *Medical progress in relation to age, expressed as a percentage of totals at risk*

	3/12			1 year			2 years		
	16–39 *years*	*Sample Av'rage*	40–60 *years*	16–39 *years*	*Sample Av'rage*	40–60 *years*	16–39 *years*	*Sample Av'rage*	40–60 *years*
Improved	78·2	72·3	69·6	72·6	66·8	64·1	68·6	59·8	55·8
Not Improved	19·4	26·2	29·0	19·4	29·7	34·4	23·4	37·0	43·1
Not Known Removed	2·4	1·5	1·4	8·0	3·5	1·5	8·0	3·2	1·1
Totals	100	100	100	100	100	100	100	100	100

Nature of disease

This was the dominating factor throughout this study, and particularly so where the disease was of a chronic or recurrent nature. While environmental factors could be changed or modified, too often such was not the case with the disease process. All but one of the patients suffering from neoplasm died within 2 years of discharge. In addition to these, two other male patients, who had been admitted for quite unrelated causes, and in whom bronchial neoplasia was detected later, were dead before the final visit to them was due. The sole survivor in this group was a woman, aged 59 years, a jute weaver who had had symptoms for about one year. On the radiological diagnosis of carcinoma of colon, she had a colectomy performed, with apparent complete removal. At 1 year she was extremely well and had been back at work for over 7 months. At 2 years, however, she had relapsed and a laparotomy revealed widespread abdominal secondary growths.

At the other extreme, in a small proportion of cases a complete cure was obtained and the majority of these remained satisfactory throughout.

Between these extremes are the many with diseases of a chronic or recurrent nature—in this study 272 patients (68 per cent.). In these, the disease process is often advanced, complete recovery impossible, and only by continued or regular treatment can it be controlled, and recurrences prevented or

limited. While not as rapidly fatal as the neoplasms, such conditions produce considerable disablement.

Patients with a chronic condition, and those without, are contrasted in Figure 4, against the average for the study, in relation to satisfactory and unsatisfactory assessments. This demonstrates not only the difference in progress between the two groups but also, if the range above and below average is compared with similar ranges in earlier figures, how much more important this factor is.

The main reason for this disparity between the chronic and non-chronic groups lies in the very different morbidity rates, and this is shown in Table 22. The numbers refer to individual patients, not to the number of relapses or other illnesses, and no distinction is made between treatment in hospital or at home. Whereas, of the chronic group, 37 per cent. had multiple illnesses and 12·6 per cent. had one or more readmissions to hospital, the relevant percentages in the non-chronic group were 14 per cent. and 6·2 per cent.

The percentage death-rate was 14·4 per cent. in the chronic group, and 12·5 per cent. in the other, but included in the latter are all the deaths in the less hopeful neoplastic group which, if excluded, would reduce this percentage to 6·3 per cent.

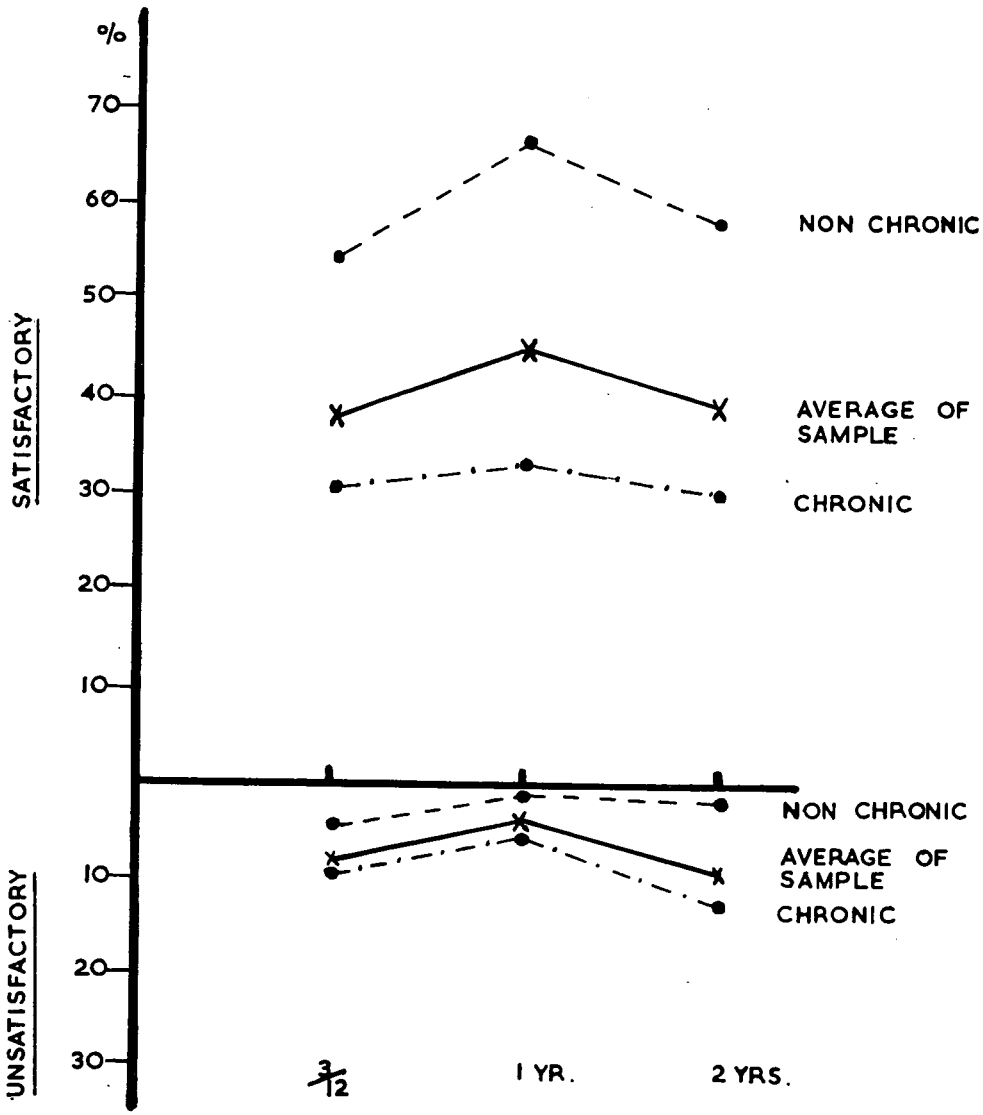
TABLE 22. *Chronic contrasted with Non-chronic disease—Relapses and other illness during 2 year follow-up period*

	Chronic Group		*Non-Chronic Group*		
	M.	*F.*	*M.*	*F.*	
Relapses	102	42	19	4	
Other illnesses	38	13	20	7	
Totals	140	55	39	11	
Combined Totals	195		50		245
Total Nos. in Group	272		128		400
% of Totals	71·7		39·1		61·3

FIG. 4.

ASSESSMENT OF PROGRESS

NON CHRONIC v CHRONIC



Treatment

The next most important group of factors as observed in this study concerned treatment and this follows on, logically, from the above observations on the character of the disease process. Treatment has to be considered both in relation to its provision (by hospital or family doctor), and the degree to which it is implemented by the patient. Indeed, the latter aspect can be extremely important, since to a large and increasing extent, the ultimate implementation of treatment, outside of hospital, is by the patient. Inadequacies, therefore, may be present in the provision, or the implementation, of treatment, or both.

In the initial few months of the follow up, the treatment recommended on discharge was used as the standard by which provision was judged adequate or not. Subsequently, with individual variations in modes of treatment amongst family doctors, only an empirical assessment of adequacy could be made. As a general rule, so long as some form of treatment was sought and given—be it only advice, as indeed was sometimes all that was necessary—and there was no obvious omission of essentials, then this was considered adequate.

The assessment as to whether or not such treatment was implemented, was not quite so difficult. The co-operation of the patient was considered under the following headings:—

(1) Did the patient comply with the treatment or advice which was provided?
(2) Did he, or she, attend the general practitioner or clinic, etc. as recommended?
(3) Was there undue delay in seeking treatment?

Note was also made of any circumstances which might have influenced the degree of co-operation—such as the brain damage residual to some neurological conditions, or difficulties at home or at work.

In a general study such as this, it was not possible to approach this problem in great detail, and the results obtained probably underestimate its extent.

In respect of the treatment recommended on discharge from hospital, over three-quarters of the patients requiring specific treatment, considered by the hospital physician to be essential,

had received this in full by three months. It proved impossible to determine in all cases whether all such treatment had been provided, as for various reasons, some patients were not seen, and in others, the needs of treatment had changed. In the main, inadequacies of provision were only partial, and adverse effects were not always apparent.

In the main, inadequacies of provision were usually those of out-patient follow up or of the patient's instruction in the regimen of treatment. Sometimes the arrangement of further investigations took an unduly long time; more common was the omission of necessary instruction on such matters as diet, exercise and modification of habits and activities. The patient did not always appear to be made fully conversant with the requirements of his treatment, especially in cases involving maintenance therapy.

However, despite apparently adequate instruction and treatment, there was quite a high proportion of patients who failed to comply with these recommendations. One example of this was a married woman, aged 36 years, a housewife, who since 1943 had been registered as a disabled person by reason of mitral stenosis. She had been in hospital for this condition at one time during the year before her inclusion in this study, and for some years had been on a small dose of digitalis, which she knew should be taken indefinitely. Nonetheless, some eight months after her most recent admission, she felt so well that she decided, without consulting her doctor, to stop treatment. In a week or so, she was in relapse. Put on digitalis again, the following year she again decided she did not really need it. However, this time, instead of stopping it completely, she reduced the dosage. In due course she relapsed, but more severely than in the previous year and she had to be readmitted to hospital.

This tendency to discontinue or reduce dosage was noted frequently among patients on long-term therapy, particularly if they had become asymptomatic.

Occasionally, in recurrent conditions like epilepsy, in which recurrences were infrequent, there was neglect to attend the general practitioner for further supplies of drugs. One example of this concerned a goods checker, aged 53 years, who had infrequent seizures. His only admission to hospital resulted from such a neglect, yet in the follow up, it was found that after

his initial one week's supply of phenobarbitone was exhausted, he did not bother to obtain further supplies, although he was quite aware that he should continue on this treatment. As this was noticed at the one month visit, and corrected thereafter, no seizure resulted.

Though both examples given above related to specific drugs, it was more common to find neglect of advice given on diet, habits and prevention.

A housewife, aged 53 years, who had chronic bronchitis, one day was caught without her coat in a sudden downpour while waiting for a bus only a short distance from her home. Despite this, she continued to her friend's house and sat around in wet clothes for several hours. Not surprisingly, within 24 hours she had an exacerbation of her bronchitis. When seen 3 days later, she had still not consulted her doctor.

Undue delay in seeking medical aid was noted generally in the older age groups, when a contributory reason was the fear of loss of employment, as in the case of a shipyard labourer, aged 59 years, who had been treated in hospital for obesity and left ventricular failure. After his initial supply of digoxin was exhausted he did not seek its renewal. Instead, he returned to work, against his doctor's advice. At this time men were gradually being paid off from the yard and he feared he would be among them if he remained away from work longer. He could just manage his work—a light job—but had to refuse overtime because he was so tired at the end of the normal working day. He struggled on, despite increasing symptoms, until the folllwing winter, when he was forced to go off sick. He was off work for 18 weeks. When he returned to his former work, he again stopped treatment. He was eventually paid off, probably because even light work was too much for him, although officially the reason was reduction in staff! (he was the only one paid off at this time). Though worse, he waited a further 3 weeks before consulting his doctor for treatment. When seen 2 years after discharge from hospital his walking distance was reduced to 100 yards, and he was much worse than he had been twenty-one months earlier.

The frequency of these forms of inadequate co-operation by the patient, which for convenience could be termed 'personal factors', increased steadily from a level of 28 per cent. at 3

months, to 33 per cent. at 1 year, and 38 per cent. at 2 years.

This is shown in Figure 5, which contrasts the respective incidence of disease (relapses etc.), personal factors in treatment, occupational, and housing factors at each of the three visits. These have been expressed as percentages of the total number seen at each visit. It will be appreciated that in many instances more than one factor was present, but as stated earlier, all factors were recorded.

In this study, the largest factor influencing the progress of patients after discharge from hospital was the disease process itself. Since, in over two-thirds of the patients, this process was of a chronic or recurrent nature, the incidence of inadequacies in treatment, either in their provision or implementation, could be, and was, relatively high. By contrast, adverse occupational and environmental factors were encountered relatively infrequently.

Occupation

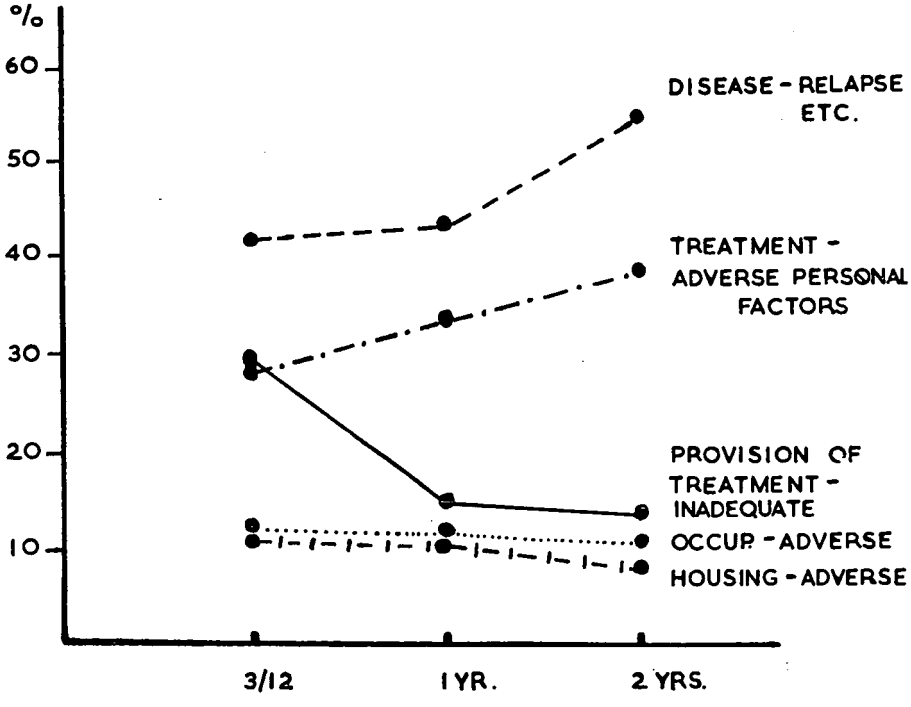
Although a relatively small proportion of patients were in wholly or partially unsuitable employment (18 per cent. at 3 months after discharge, but only 10 per cent. at 2 years), the problems they presented were more difficult to solve.

As already mentioned in Chapter 3, modification of work was often possible, and carried out, in the upper three social classes, but in the semi-skilled, and particularly the unskilled, adequate modification was rarely possible. Instead, a change of occupation was needed, and this was often difficult to effect, even in the younger age groups.

In the first place, the individual may not wish to change, having been in the same job for a number of years. He knows the people he works with, and they, quite often, make allowances for his disability, even to the extent of shielding him. His employer is often sympathetic. These advantages he would lose in changing employment—even if resettlement could be achieved. Illustrative of this was a man, aged 26 years, married, with 5 children, who had had bronchial asthma since early childhood. For the previous 4 years he had managed to work as a plater's helper in the shipyard. He was rarely without some wheezing, and quite often had a day or two off work

FIG. 5.

RELATIVE INCIDENCE OF MEDICAL AND ENVIRONMENTAL FACTORS



because of exacerbations. During the 2 year follow-up, he was readmitted to hospital on four occasions, yet although off sick at the 2 years visit, his job was still available. His work was dusty and moderately heavy, and he freely admitted that, but for the assistance and consideration of his 'mates' he would not be able to hold the job. His employers were considerate and did not take any action when from time to time he had a day off work. It is not surprising that he was not enthusiastic about changing from what he knew to be an unsuitable job. His prospects of a more suitable one were not very bright, and with five young children, he did not want to be unemployed. He was not registered as disabled either before inclusion in this study or throughout the follow-up period.

Apart from the loss of 'advantages' of an intangible nature, material ones are sometimes involved, as in the case of a Corporation grave-digger, aged 49 years, who was superannuated. He had a history of bronchitis going back at least 16 years, and since 1950 had been in hospital with this condition, or with pneumonia, on three occasions. During the first year of the follow-up study he had three exacerbations and lost nine weeks' work as a result. At first, because he liked his job, he was unwilling to change, but eventually he realised that he should, and applied for three superannuated indoor jobs, but without success. He was referred to the resettlement clinic, after he had tried and failed to get a more suitable job with the Corporation. He was reluctant to forfeit his pension rights, but realised he would have to accept this for the sake of his health. He was registered as a disabled person and fortunately the disablement resettlement officer was able to place him almost immediately in a light indoor job, removing paint from rejects in a refrigerator factory. Since he started that job he had lost only 12 days through illness in 10 months, and claimed he was weathering the winter better than he had for many years.

More often, there are no such considerations; in fact, the individual would be glad to change if alternative employment was assured. This is not often possible, so, rather than become unemployed, he tries to 'hang on as long as possible'.

Among the young disabled who are already unemployed, casual or temporary work of a wholly unsuitable nature is sometimes undertaken. An example of this was a young man,

aged 22 years, who had chronic rheumatic valvular heart disease, and was dyspnoeic on moderate exertion; yet he took casual work loading sacks of potatoes on to small cargo boats. Later he moved to England, where he worked first as a cabinet-maker's labourer, then as a tube-bender. He admitted he could just manage the day's work but was too tired in the evenings to go out. He was paid off and returned home, where 6 months later he was back in hospital with left ventricular failure.

Occasionally, occupation was adverse only under certain circumstances. This was observed among several patients with peptic ulcers, e.g. a policeman who, each time he went on night duty had an exacerbation; and the head storeman in a light engineering firm who suffered exacerbations with each stocktaking.

These are just a few illustrative examples of how occupation influenced progress, and some of the problems involved in change to more suitable employment. It is apparent that despite the relatively low incidence of adverse occupational features, the effects were often quite marked, and resettlement difficult.

Housing and domestic environment

Although as many as 30 per cent. of patients lived in sub-standard houses, their poor housing conditions could not always be held to prejudice their medical condition. But a small proportion of the patients, not more than 3 or 4 per cent., were living in grossly defective houses which could not fail to prejudice their condition.

The proportion of patients living in houses with one or more adverse features was 12·1 per cent. at 3 months, 11·9 per cent. at 1 year, and only 10·2 per cent. at 2 years.

The most common adverse feature was dampness, which usually affected only one room. Generally, it was localised, relatively slight, and intermittent in character, and the exact extent to which it influenced the health of the occupants was often uncertain. Where it was more extensive and persistent there appeared to be an increased incidence of colds and exacerbations of existing chronic respiratory conditions. One male patient, aged 59 years, first became subject to bronchitis when he moved from a dry single-apartment house to a damp, low-lying one, six years before he was seen in hospital. No

history of previous admission was elicited, but 2 years earlier he had to give up his work as a jute orraman because of his bronchitic symptoms. Since that time he had been longer on sickness benefit than on unemployment benefit. After discharge from hospital in February, he remained quite well until the following winter, when he was readmitted to hospital with a severe exacerbation. Discharged again after 2 months' treatment, he was asymptomatic for about a month, then without apparent cause his bronchitic symptoms recurred and when seen at 2 years he was obviously worse. While there was some evidence to suggest he was neglectful of the ordinary precautions in regard to clothing, etc., the room was so damp that his clothing and shoes, if left unworn for more than a few days, would be affected by mould. He was a widower but lived with a woman who was not legally his wife, and although he had never applied for rehousing, he would have little prospect of getting this.

Sometimes the offer of a better house was refused. This happened in the case of a 57 year old travelling tinsmith, for 12 years too crippled by bronchitis and arteriosclerotic heart disease to ply his trade. When first seen, he was living in a very damp, draughty, ground floor flat of a condemned backland tenement, unoccupied save by the patient and his wife. Only one room was used, the other had sections of the flooring missing. The fireplace had no grate; the furniture consisted of a double bed, a chest of drawers, and an easy chair. The gas had long since been cut off and one paraffin lamp was the only source of artificial light. The hospital almoner helped them to obtain two small tables, 4 chairs, a few cooking utensils, and a grate for the fire, and had their case taken up with the local authority housing committee. The patient was offered a three-roomed, low rent, local authority house, but adamantly refused this on the grounds that it was too big, and he didn't want to take any lodgers. Though he was permanently unfit, and with a poor medical prognosis (not made any better by his preference for cheap wine rather than food), his present housing had undoubtedly contributed to the 3 readmissions to hospital which he had in the course of the 2 year follow-up study.

Sometimes stairs imposed an additional and preventable burden on those with a very limited effort-tolerance.

A G.P.O. engineer, aged 50 years, moderately disabled from chronic bronchitis and bronchiectasis, and now employed on the cleaning of telephone apparatus, lived in a second floor tenement flat, with a short outside flight of stairs. He required to stop for breath 2–3 times on the stairs, and at the top was almost too breathless to speak. In addition to the stairs, there was a short but fairly steep incline from the nearest bus stop. Representations were successfully made to put him on the priority list for a ground floor flat in a new housing estate which was convenient in regard to transport to and from his work. Unfortunately, his medical condition had so deteriorated that even with the provision of a good ground floor flat, he was pensioned off on health grounds some four months later.

In other instances, stairs virtually confined the patient indoors. This was observed in some of the more severely disabled, particularly those with ischaemic heart disease. With such patients, and those with conditions such as hemiplegia, an outside lavatory (often sited on the stairs between floors) would add considerably to their difficulties, though hardly influencing the disease process directly.

Overcrowding was present only in a very small proportion of cases, and had rarely much effect on progress. Sometimes, however, it gave rise to much domestic tension, as in the case of a divorced woman, aged 43 years, employed part-time as a school cleaner, and suffering from a chronic duodenal ulcer, who tried to keep the peace between her aged, deaf, blind, and talkative mother, and her son aged 17 years. She, her mother, son and daughter (aged 13) lived in a damp, dark, ground-floor, two-roomed tenement flat. It was not surprising that she was rarely asymptomatic. For financial reasons she turned down a new local authority house, but eventually moved to an older one of 4 rooms, and with a cheaper rent. There, with adequate accommodation, family dissensions became less frequent and coincidentally there was a decided improvement in her medical condition.

These were the main aspects of housing which could be said to influence progress; but in importance housing ranked relatively low among the factors concerned.

5

The Major Disease Groups

THE three numerically largest disease groups were the respiratory (108 patients), the cardiovascular (95 patients) and the alimentary (54 patients). For convenience, the nomenclature of the latter two groups has been changed from circulatory and digestive system, under which sub-headings these disease groups were shown in Figure 1, Chapter 2.

Mention has already been made of the predominance of respiratory diseases, and it is probable that in part this has occurred as a result of the upper age limit of this study being set at 60 years. As the age and sex distribution of these three disease groups (Table 23) shows, in the age group 40–60 years there is a sixfold increase in the numbers of patients with cardiovascular diseases, which is in marked contrast to the approximately twofold increase in the other two groups.

TABLE 23. *Age and Sex Distribution—Major Disease Groups*

		16–39 *yrs.*		40–60 *yrs.*	
Respiratory Diseases	F	6 } 33	30·6%	15 } 75	69·4%
	M	27		60	
Cardiovascular Diseases	F	4 } 13	13·7%	20 } 82	86·3%
	M	9		62	
Alimentary Diseases	F	1 } 18	33·3%	9 } 36	66·6%
	M	17		27	

The distribution for the sample as a whole was 31 per cent. under 40 years of age and 69 per cent. over 40 years of age. Thus the respiratory group more closely resembled the sample, while the cardiovascular group is heavily biased towards the upper age group. The alimentary patients tend to be slightly younger.

Social class

Half of the patients with respiratory disease were from social classes IV and V (49·9 per cent.) compared with less than a third in the cardiovascular (30·5 per cent.) and a third in the alimentary group. (See Chapter 2, Table 1).

Assessment of progress

If the findings discussed in Chapter 4 on the influence of age and social class are generally applicable, then the assessments of progress in the respiratory group are likely to be less favourable than the average in the sample. Equally, in the cardiovascular group these should be the same or even a little better, and in the alimentary group distinctly better than the average.

The full assessments of progress for these disease groups, and for the sample as a whole, are given in Table 24. The 'satisfactory' and 'unsatisfactory' assessments are plotted in graph form in Figure 6. For comparative purposes these results have been expressed as percentages of the total numbers in each group.

TABLE 24. *Assessment of Progress—Major Disease Groups*

	3/12				1 year				2 years			
	Resp.	*C.V.S.*	*Alim.*	*Sample*	*Resp.*	*C.V.S.*	*Alim.*	*Sample*	*Resp.*	*C.V.S.*	*Alim.*	*Sample*
Satisfactory	31·5	49·5	31·5	38·2	31·5	51·6	51·9	44·0	27·8	46·3	44·5	39·2
Fairly Satisfactory	46·3	40·0	44·4	42·8	44·4	28·4	33·3	33·7	41·6	26·3	33·3	33·2
Unsatisfactory	10·2	4·2	9·3	7·8	5·6	5·2	3·7	4·5	13·9	7·4	7·4	8·8
Not seen	12·0	6·3	14·8	11·2	18·5	14·8	11·1	17·8	16·7	20·0	14·8	18·8
Total %	100	100	100	100	100	100	100	100	100	100	100	100

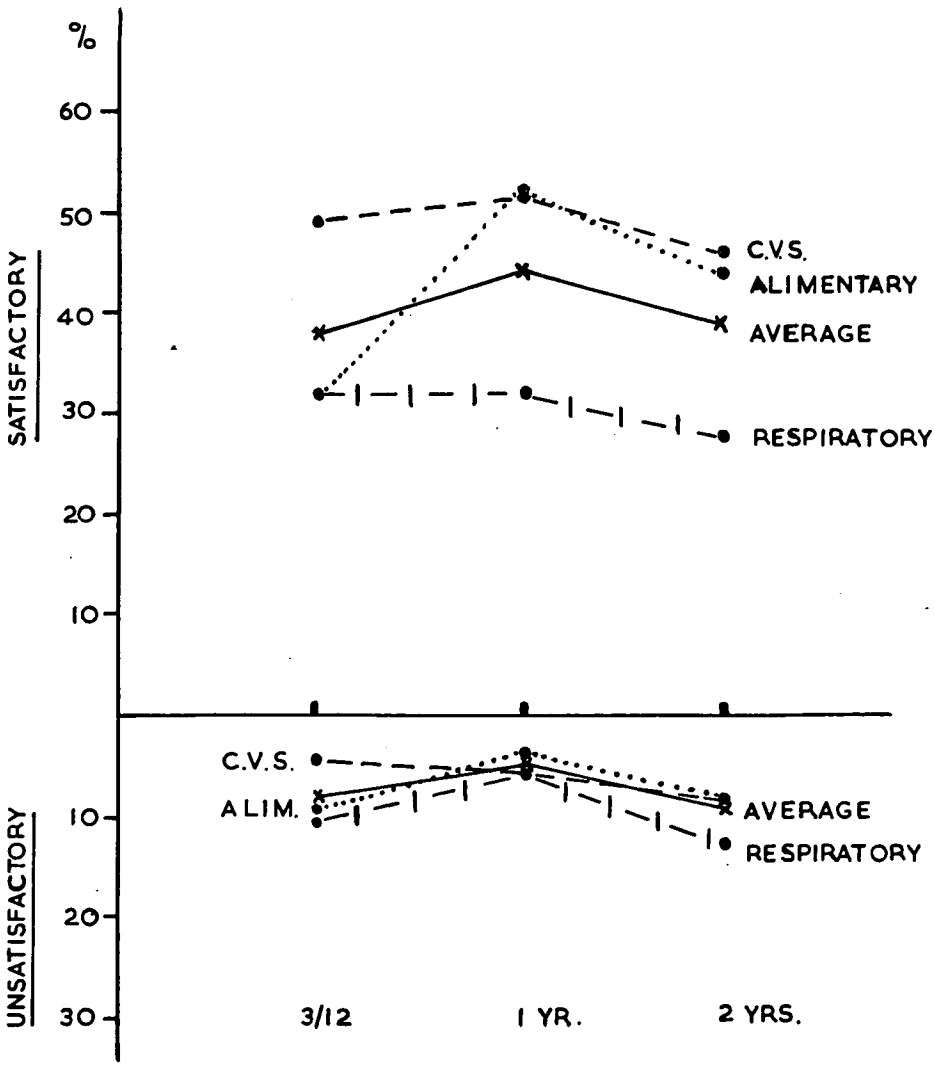
Examination of both graph and table clearly reveals that, as assessed, the progress of the respiratory group was poorer than for the sample as a whole, while the progress of the cardiovascular group was much better. Although showing a much greater fluctuation, the progress of the alimentary group was also much better than that of the sample.

Before passing on to consider the influence of other factors, a

FIG. 6.

ASSESSMENT OF PROGRESS

MAJOR DISEASE GROUPS



further observation on these results in relation to the respiratory group should be made. Whereas, in the sample as a whole, and in the other two disease groups, an improvement is apparent at the one year visit, this is not so with the respiratory group. The proportion assessed as 'satisfactory' is the same at both three months and one year but a marked increase has occurred in the proportion which was not seen. Specifically the increase is entirely in the number of patients who had died between these two visits. At three months three patients in this group were dead, and at one year the number of deaths had risen to 12.

The effect of the disease process

A chronic or recurrent disease condition was present in 73 per cent. of patients in the respiratory group, while in the cardiovascular and alimentary groups this percentage was 62 per cent. and 96 per cent. respectively. In the study as a whole the corresponding percentage was 69 per cent. Since, as demonstrated in the previous chapter, chronicity of the disease process adversely affects progress, then the assessments made in the respiratory and cardiovascular groups relative to those of the sample as a whole, should be, and are, respectively poorer and better. The exceptions are the patients in the alimentary group, nearly two-thirds of whom had peptic ulcers and all except two of whom had conditions of a recurrent nature. However, though such patients may have frequent exacerbations, the effects of these are less disabling, on the whole, than those of conditions such as chronic bronchitis or chronic rheumatic heart disease. In reaching an assessment, the severity of the relapse and its effect were among the factors considered. It was because, in quite a number of instances, the relapses were of a fairly minor character, that the assessments in the alimentary group were better than those in the sample as a whole, despite the very high proportion of patients with a chronic or recurrent disease condition.

While two-thirds or more of the patients, in the 'non-chronic' categories of these disease groups, were assessed as 'satisfactory' at each of the three visits, the corresponding proportion of patients with a 'chronic' disease condition was less than half. Indeed, in the respiratory group this proportion was nearer a fifth.

The medical state at each visit

As earlier defined, the 'not improved' category is composed of all patients whose condition, relative to their medical state on discharge from hospital, was unchanged or worse, together with all who, at the relevant visits, were either in hospital again or had died. To facilitate comparison of the groups one with another and with the sample as a whole, the number of patients in each category has been expressed as a percentage of the total number of patients in each group (Table 25).

TABLE 25. *Medical State—Major Disease Groups*

Visit	*Improved*				*Not Improved*				*Not Seen—Removed*			
	Resp.	*C.V.S.*	*Alim.*	*Sample*	*Resp.*	*C.V.S.*	*Alim.*	*Sample*	*Resp.*	*C.V.S.*	*Alim.*	*Sample*
3/12	70·4	77·9	68·5	72·2	26·9	22·1	31·5	26·2	2·7	—	—	1·6
1 *yr.*	63·0	67·4	75·9	66·8	35·2	31·6	22·2	29·8	1·8	1·0	1·9	3·5
2 *yrs.*	60·3	61·1	66·7	59·8	37·0	37·9	29·6	37·0	2·7	1·0	3·7	3·2

Details of 'Not Improved' Group

	Seen				*Not Seen—I.P.*				*Dead*			
	Resp.	*C.V.S.*	*Alim.*	*Sample*	*Resp.*	*C.V.S.*	*Alim.*	*Sample*	*Resp.*	*C.V.S.*	*Alim.*	*Sample*
3/12	15·6	15·8	16·6	16·5	6·5	2·1	5·6	5·3	2·8	4·2	9·3	4·4
1 *yr.*	18·5	18·0	12·9	15·5	5·6	6·3	—	4·5	11·1	7·3	9·3	9·8
2 *yrs.*	23·1	17·2	18·5	21·5	2·8	2·8	—	1·7	11·1	17·9	11·1	13·8

The results, compared in Table 25, refer only to the medical state of each patient at one point in time on three single days of the 2-year follow-up—the interval between these, but not, of course, the day of the year, being the same. Hence, the results are of less value than the assessments of progress from which they differ in some respects. However, they do show broadly the same tendencies as the assessments of progress, in that the proportion 'improved' in both the cardiovascular and alimentary groups is higher than that in the sample, while in the respiratory group the reverse is the case. These results tend to substantiate the reason given above for the atypical assessments

of progress in the alimentary group i.e. that while the frequency of relapses in this group may be high, the effects of these were not necessarily severe. As will be shown later, the frequency of relapse in this group was higher than the average, particularly in the initial period of the follow up, when, too, the severity of the relapses was greater.

Mention has already been made of the increase in the number of deaths in the respiratory group between 3 months and 1 year. In 7 of the 9 patients who died during this interval, the respiratory condition was complicated by congestive cardiac failure, and this appeared to be the decisive factor in their eventual demise during a subsequent relapse. Of the other two, one died following an operation for a gastric neoplasm, while the other, with only a short history of chronic bronchitis, died unexpectedly in one of the several exacerbations. The exact cause of death in this patient was not ascertained. All were over 40 years, and only one patient was under 50 years of age.

All but one of the deaths in the alimentary group occurred in the first three months. These patients had all had abdominal operations—2 laparotomies, 2 partial gastrectomies, and 1 colectomy for ulcerative colitis. Renal failure and acute hepatic failure respectively were the ultimate causes of death in the two patients who had laparotomies, and small bowel obstruction was the cause of death, post operatively, in the patient with ulcerative colitis. Of the partial gastrectomies, one was performed as an emergency procedure, and the cause of death was post-operative bleeding, while the other patient died suddenly during convalescence at home. The precise cause of death in this latter case was not ascertained. The number of patients in the alimentary group who were referred for surgery was 16, and apart from the five who died, their subsequent medical histories were almost uniformly satisfactory. One patient who had a partial gastrectomy for a chronic duodenal ulcer did have a major relapse between the one- and two-year visits, but he was the only one. In the only other patient in the alimentary group who died, the cause of death was bronchial carcinoma, which was diagnosed during the follow-up period.

Deaths among the cardiovascular group of patients occurred only in the over-40 age group, and out of a total of 17, 13 were over 50 years of age. The numbers increased gradually from 4

to 7 at 1 year, and finally to 17 at 2 years. Of these, 7 were females—3 with chronic rheumatic heart disease, 3 with chronic bronchitis complicated by right heart failure, and 1 with hypertension and cerebro-vascular disease. All were severely handicapped on discharge and had long histories, with several previous admissions.

Relapses and other illnesses

The morbidity rate was higher in these three disease groups than in the study as a whole—69·6 per cent. compared with 61·1 per cent. Of the three groups, the highest rate was observed in the respiratory group. Over three-quarters (79·6 per cent.) of the patients in this group had one or more episodes of illness. In the cardiovascular and alimentary groups the corresponding proportions were 62·1 per cent. and 63 per cent.

Thus, of the 257 patients who comprised these groups, 179 had one or more episodes of illness. Over 52 per cent. of the respiratory group, 50 per cent. of the alimentary group, and 28·4 per cent. of the cardiovascular group, had more than one relapse or other illness during the period of this study.

To some extent this is reflected in the proportions of the patients in each group who, subsequent to the initial convalescent period, lost time off work through illness. These data could only be compiled from the patients who were seen at the final 2 year visit, and in Table 26, which details this information, the

TABLE 26. *Time lost from work through illness, as a percentage of patients at risk*

	Main Disease Groups			
	Respiratory (90)	*Cardiovascular* (76)	*Alimentary* (46)	*Study as a whole* (325)
	%	%	%	%
Nil . . .	24·4	32·9	43·5	31·4
Less than 1 month .	16·7	18·4	21·7	25·5
1–6 months . .	35·6	21·1	26·1	29·4
7–12 months . .	10·0	5·3	2·2	7·8
1 year or more .	13·3	22·3	6·5	5·9
	100	100	100	100

percentages are based on the numbers who were seen then.

A feature of the period between discharge from hospital and the 3-month visit to which reference was made in earlier chapters, was the relatively high morbidity rate by comparison with the other two periods of 9 months and 1 year respectively. This feature was striking among patients in the respiratory group, of whom more than three-fifths had relapsed or had some other illness. In the cardiovascular and alimentary groups, the corresponding proportions were 32 per cent. and 35 per cent. respectively. These proportions are exclusive of those who had died or were again in hospital at the 3-month visit. Since patients were visited at 1 month as well as at 3 months, their memory was likely, therefore, to be more reliable for these short periods than for the longer subsequent ones. However, this can only be part of the reason; the main factor is undoubtedly that this initial period after discharge from hospital is the period of greatest risk.

Treatment

Inadequacies in provision of treatment were proportionately lower among patients with cardiovascular or alimentary diseases than among the patients studied as a whole or among those in the respiratory group. These inadequacies were usually in the provision of ancillary treatment such as physiotherapy, and in most instances the effect its absence had on the patients' subsequent progress did not appear to be very marked.

Personal factors—failure in the implementation of treatment or advice, or neglect in seeking medical assistance early in the major relapse—were more common, and appeared to play a larger and more important role in subsequent progress (or lack of it) after discharge from hospital. Examples to illustrate this have been given in the previous chapter.

The incidence of these 'personal factors' was greatest among patients of the respiratory and alimentary groups (40–50 per cent); their incidence among patients of the cardiovascular group was only 15–28 per cent. Although the percentage incidence was low at 3 months among patients of the cardiovascular group, unlike the other two groups in which the incidence fell slightly at 1 year, there was a steady increase throughout. The probable reason for the considerable difference

between the cardiovascular group on the one hand and the respiratory and alimentary groups on the other lies in the different subjective attitude to these diseases. Broadly speaking, diseases of the heart are considered by the lay person more serious than either respiratory or alimentary diseases, so that compliance with treatment and advice is likely to be better among patients with the former group of diseases.

Occupation

Return to work. Although few of the respiratory patients did not subsequently lose time off work through illness (Table 26) yet 41 per cent. were considered fit for work within 1 month of discharge, compared with 37 per cent. of the alimentary group and only 26 per cent. of the cardiovascular group. Of those patients who were seen at the 2-year visit, the proportion who did not become fit for work within the period of this study was lowest in the alimentary group (4·3 per cent.) and highest in the cardiovascular group (21·1 per cent.). Of the respiratory group, 7·8 per cent. did not become fit for work, while for the sample as a whole this percentage was 13·8 per cent.

Employment. The average percentage of patients in employment at each of the 3 domiciliary visits, inclusive of housewives, was found to be 59 per cent. and those fit, but unemployed, 5 per cent. (Chapter 3). The corresponding percentages for the three disease groups under consideration were:—

Respiratory	54·9%	employed	6·5% unemployed
Cardiovascular	51·9%	„	only 1 patient unemployed
Alimentary	64·8%	„	6·8% unemployed

The number of patients in the respiratory group who were considered unfit for work was remarkably steady throughout the follow-up period—25 at 3 months and 26 at both the 1 and 2 year visits. In the alimentary group, after a peak of 12 at 3 months, the number on sickness benefit was 6 at each of the other two visits.

Patients in the cardiovascular group were much slower in returning to work, so that 42 were unfit for work at 3 months. This fell to 29 at 1 year and 24 at 2 years, but much of this

reduction was caused by deaths, as there were only 4 more patients (3 employed, 1 unemployed) fit for work at 2 years than there were at 3 months.

Suitability of employment. Adverse occupational features were observed in 17 patients in the respiratory group; 13 patients in the alimentary group, and in only 5 patients in the cardiovascular group. The position at 2 years was as follows:—

Respiratory	(17)	2—change of work. Now suitable
		1—work no longer adverse
		5—no change—unsuitable
		9—unfit for work
	Total	17
Alimentary	(13)	5—change of work. Now suitable
		1—work no longer adverse
		5—no change—unsuitable
		2—unfit for work
	Total	13
Cardiovascular	(5)	1—change of work. Now suitable
		2—no change—unsuitable
		1—unfit for work
		1—dead
	Total	5

Least improvement in suitability of occupation was observed in the respiratory group, though the cardiovascular group was not significantly better.

Concerning those shown as being in the same job, which was no longer exerting an adverse influence at 2 years, this indicates some alteration in that work, but not such as to justify this alteration being termed a deliberate modification or a change of job. For example, in the case of the patient in the alimentary

group, the same kind of work was being performed but the responsibility was much less.

The common adverse features affecting the respiratory patients were employment in outdoor or dusty occupations, while irregular hours and responsibility were common among patients in the alimentary group. For cardiovascular patients the common adverse feature was some form of physical exertion, such as too much standing or walking about.

Housing

While adverse features in housing were observed in 30 per cent. of the respiratory group, only 5·6 per cent. and 2·2 per cent. respectively of the cardiovascular and alimentary groups lived in housing with one or more adverse features. A higher proportion of the respiratory group lived in sub-standard houses, and the commonest adverse feature in these houses was dampness, present in 15 per cent. The common adverse feature in the housing of the cardiovascular group was the presence of stairs. Overcrowding was not a major problem, but almost half of the cases of this were in the respiratory group.

At the end of this study, the housing position had improved in the respiratory group so that only 15 per cent. were now in defective housing. The reverse was the case in the cardiovascular group; 10 per cent. were now in unsatisfactory housing. In part this was due to a deterioration in the medical condition of some patients in this group, without any change in housing. The improvement in the respiratory group was mainly the result of removal to better housing. This group being younger, and usually with a growing family, consequently commanded a higher priority for rehousing. The adverse effects of defective housing were more apparent among the respiratory group than among the cardiovascular group. The numbers involved, however, were too small to draw any definite conclusions on this point.

Assessment of benefit derived from hospital treatment

To conclude this short review of the major disease groups, the durability of the benefit derived from the initial hospital in-patient treatment can be estimated, as in Chapter 3, when the sample as a whole was considered. This has been sum-

marised in Table 27, in which the corresponding percentages for the sample have been shown for comparison.

TABLE 27. *Summary of benefit derived from hospital treatment*

	Respiratory			*Cardiovascular*			*Alimentary*			*Study as a whole*
	M.	*F.*	% *Total*	*M.*	*F.*	% *Total*	*M.*	*F.*	% *Total*	%
Lasting benefit	17	5	20·4	26	7	34·7	17	4	38·9	30·0
Temporary benefit	42	13	50·9	25	8	34·7	15	1	29·6	38·5
Little or no benefit	20	3	21·3	15	2	17·9	10	5	27·8	22·5
Not assessed	8	—	7·4	5	7	12·7	2	—	3·7	9·0
	87	21	100	71	24	100	44	10	100	100
No. of patients	108			95			54			400

The registered disabled

One of the reasons advanced by patients for the fairly common reluctance to register as a disabled person is that such registration does not improve their chances of employment, indeed it impairs them. The result is that frequently they do not consent to registration until the handicap is quite marked, which in itself limits the range of employment and the chances of resettlement. Since in this study 82 patients were, or had been, registered as disabled persons, comparison of this group of patients with those in the study as a whole should show how much substance there is in this popular belief.

At the initial hospital interview, 15 males and 2 females had allowed their registration to lapse, or, becoming completely unemployable, were no longer on the register. During the period of this study, a further 2 males and 1 female allowed their registration to lapse, while one female was re-registered. Thus, at 2 years, of the 82, 18 were not in current registration. The usual reason given for lapsing was that registration did not help them to get employment and the patients felt they stood a better chance on the 'open market'. However, for the purpose of this review of the registered disabled, these 'lapsed' patients have been included.

At 2 years, 31 (including 2 housewives) or nearly 38 per cent. were working, 8 or 9·8 per cent. were unemployed, 26 or 31·7 per cent. were unfit for work, of whom 7 were permanently unfit, 1 was back in hospital, and 1 had removed from the area. Death accounted for the remaining 10 patients. The proportions in employment and unemployed are lower and higher respectively than the average, but so also is the proportion who are unfit for work. However, on the whole, these figures do suggest that, even allowing for the higher proportion who are unfit for work, proportionately fewer of the registered disabled are employed, so that there may be some substance to the popular belief.

Considered in other respects, this group of patients took longer to return to work (44 per cent. at 3 months) but the number who did not become fit for work was lower (13 or 15·9 per cent.).

However, of those who did return to work, fewer changed their jobs. The duration of unemployment was longer than the average and the number who had no period of unemployment during the study period was proportionately smaller than the average.

Montgomerie (1960) in a recent enquiry among employers in the West of Scotland of employment opportunities for the severely disabled, found that 'the percentage unemployment amongst the registered persons was still much greater than the percentage unemployment of all insured workers'.

Their progress assessments were, as would be expected, substantially poorer than the average for the study as a whole. At 2 years, only 28 per cent. were assessed as 'satisfactory' while 20 per cent. were 'unsatisfactory'. The proportions not seen and dead were lower (3·6 per cent. and 12·2 per cent. respectively).

In summary, therefore, the registered disabled, both from the points of view of employment and health, compared unfavourably with the study as a whole. A possible reason for this, and the subsequent record of ill health tends to support this, may be that registration was carried out too late in the course of the disease process. It may be that earlier registration, by making suitable placement easier before the disease process had advanced too far, would have produced an improvement in these results.

6

Discussion and Conclusions

In the preceding chapters an account has been given of a two-year follow-up study of 400 patients (one quarter of them female) who were selected by age and domicile, on discharge from certain general medical wards of three hospitals in Dundee and Arbroath.

An upper age limit of 60 years, and the inclusion of 100 female patients, decisions arrived at at the beginning of the study, precluded any close comparison with the earlier *Hospital and Community* study. Nevertheless, allowing for the younger age groups studied, the results in this study are broadly similar. As the authors of the earlier study pointed out, a considerable proportion of available beds in hospital are occupied by a comparatively small number of patients. This comment can equally well be made of this study, in which over half the patients had been in hospital at least once in the preceding seven years, and over a third were readmitted at least once in the subsequent two years. The proportions of those who had improved and those who had not were roughly comparable, and so too were the proportions who were employed or unemployed. The same trend of deterioration was observed, and the death rate was not substantially different.

A distinct difference in the incidence of disease groups was noticeable, however, the respiratory disease group in the Dundee study being numerically largest, while the alimentary group was as small as the respiratory group had been in the earlier Glasgow study.

Owing to a different method of assessment, the proportions in each study, which were considered to have derived substantial and lasting benefit, were very dissimilar, but if based on the proportion which was considered to be improved at the final domiciliary visit, closer agreement is obtained.

This study confirms the observation made in the earlier one, that the least favourable results were obtained by the semi-

skilled and unskilled group of patients. However, while in broad agreement, it was felt, on the basis of the findings in this study, that environmental factors were of less importance than the earlier study suggested. In determining the degree of benefit obtained from hospital in-patient treatment, the decisive factor, almost irrespective of age and social class, was the character of the disease process. It was shown that patients under 40 years of age, and in social classes I, II and III fared better than average. Approximately the same result could be obtained if the proportion of patients with chronic or recurrent disease processes in each of these groups is compared with the corresponding proportion in the sample. For instance, in the five social class groups, the proportions of patients with chronic disease processes were as under:—

Percentage Chronicity by Social Class

Social Classes I and II	57%
III	62%
IV	81%
V	77%

By comparing the percentage chronicity of each social class with the corresponding percentage for the whole sample (69 per cent), then it would be expected that social classes I, II and III would fare better and social classes IV and V worse than the average for the sample. This, in fact, is what Figure 2 (Chapter 4) does show.

Much the same can be shown in the comparison of assessments in the three main disease groups, except in respect of the alimentary group. Some other discrepancies were observed which could not be explained in terms of relative 'chronicity', and suggested the influence of other factors.

There was little doubt that the environmental concomitants of the social class in which the patient was classified did exert some influence. The proportion of patients whose occupation was considered wholly or partially unsuitable was much higher in the lowest two social classes, and resettlement considerably more difficult. Modification of work, or even change, was much easier to achieve in the skilled classes, and almost all patients in whose occupation a permanent modification was effected,

were in social class III. Of the patients who were in employment at any visit, however, only a small proportion (10–12 per cent.) were in unsuitable work. A similar, slightly lower proportion were unsuitably housed, so that the influence of occupation and housing was comparatively small, but difficult to correct.

With so large a proportion of patients with chronic disease processes, it was not surprising that, in the sphere of treatment, many inadequacies were observed. Increasing steadily throughout the follow-up period, the number of patients who, in one way or another, neglected to comply with the regimen of treatment, roughly paralleled the increase in relapses and other illnesses. In many instances, the relapse was closely related in time to the neglect, and there was little doubt that the latter was the main cause of the former. To a lesser extent, inadequacies in the provision of treatment were also observed, but on a diminishing scale, during the follow-up period. The incidence of each type of inadequacy was greater than the incidence of adverse features in occupation or housing, and there was a less definite relationship to either age or social class.

As shown in the earlier *Hospital and Community* study in Glasgow, much of the breakdown in health appeared inevitable by reason of the disease process itself. In the present study no other reason could be found for a proportion of the subsequent ill health which was observed. The proportionately high rate of relapse in the initial three months was similarly observed in this study, and it is unlikely to be chance or coincidence that in this period the incidence of 'inadequacies' of treatment were proportionately high. This transition period in which the patient returns to his normal environment and mode of living is a period in which much that is potentially preventable can befall him, and in which he is naturally more susceptible to relapse. It is impossible to estimate how much subsequent illhealth would be spared the patient if all that is potentially preventable could be eradicated in this transition period, but the duration of benefit derived from hospital in-patient treatment could be prolonged.

On the findings in this study it can reasonably be concluded that the decisive factor influencing the progress after hospital in-patient treatment is the character of the disease process.

Improvement depends on the prevention, in so far as this is possible, of relapses.

In the occupational and domestic environment, earlier resettlement and rehousing are indicated, since the adverse effects of both were observed most often in those patients who, by reason of age and advanced pathology, presented the greatest problems in this sphere. Earlier examination of the occupational and domestic environments, in patients who have a chronic disease process, is indicated to reduce the problems of correction. As suggested in that section of this report which considered the progress of the registered disabled, earlier registration may well achieve an improvement in the employment record of such patients. This early assessment and resettlement was one of the recommendations of the Piercy Report (1956) and the findings of this study reinforce this. It is felt that, although a resettlement clinic exists here, it was too little used. This type of clinic, referred to in the Piercy Report, brings together the various services concerned in both occupational and social resettlement, and the experience of one such clinic in Dundee has been reported (Mair 1954).

All this presupposes the agreement of the patient to the provision of these ancillary social services, and, as has been pointed out in the relevant portions of this study, this is not always obtainable.

Relevant to this aspect is the attitude of the patient regarding treatment or advice provided. The proportion of patients who failed in some way to comply with the regimen of treatment was relatively high. In some, this failure was considered attributable to a lack of knowledge of what was required. At the initial hospital interview, an assessment was made of the extent to which patients were aware of their disease condition, and the further treatment, including modification in way of life, which was advised.

Over three-quarters of the patients were considered to have a reasonable appreciation of these aspects. In the early domiciliary visits, it became apparent that this appreciation was short-lived in a small proportion. The same was observed at later visits despite reiteration of advice given at the previous ones.

In some chronic disease processes there is a time delay between neglect to comply with treatment and the effects of

such neglect. Similarly, the effects of treatment are not always immediate, and even with relatively quick-acting drugs, the effects are only obtained if the drugs are taken at the appropriate time. Thus in the former instance, as has been illustrated in Chapter 4, the patient may be so improved that he feels he does not require further treatment, and in the latter, that the treatment is of little or no value. The end result—neglect to comply with treatment—is the same. The majority of people dislike being ill, or having to conform to a regime—whether of drugs or other forms of treatment—which marks them out as different from the healthy.

Thus, though despite all efforts some will lapse, it seems desirable that the patient should become as convinced as the doctor of the need for treatment or social adaptation. Further, the patient should have some idea of what he can expect of certain drugs, and the purpose and rationale behind the regime advised.

If this were so, the reluctance to change work, housing, or mode of life might well be less difficult to overcome, and remedial measures easier to apply.

In respect of provision of treatment, some improvement, particularly (if not entirely) in the transition period immediately following discharge could be made, so that what is recommended is, in fact, provided.

While much emphasis and attention has been directed in this report to the deficiencies that were observed, this is not intended as a reflection on any of those on whose work or lives this study has been based. The good results far outnumber the poor, but, of necessity, this report has had concern only with the latter.

We owe a particular debt of gratitude to the patients, who so willingly consented to what amounted to an invasion of their private lives, beyond that which was necessary for their treatment. This study was made easier and more pleasant by their general cordiality.

We are grateful to Professor I. G. W. Hill, and to the physicians, registrars, house physicians and nursing staffs of the wards in which these patients were initially interviewed, for the facilities and co-operation afforded us throughout this study.

Similarly we would like to acknowledge the debt we owe to the general practitioners of Dundee and Arbroath, who per-

mitted us to interview their patients after discharge from hospital.

We are indebted to Dr. W. A. Wilson, of the Department of Public Health and Social Medicine, for advice and helpful criticism. We should also like to thank Miss M. McRostie, Miss A. Brinkler and Mrs. R. McLaggan of the Department of Public Health and Social Medicine on whom fell much of the burden of coding and sorting the data collected, and the typing of this report.

Finally, we are grateful to the Nuffield Provincial Hospitals Trust for the generous grant which permitted this study to be made.

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III

ABERDEEN STUDY

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Aberdeen Study

Introduction

WHEN the Nuffield Provincial Hospitals Trust invited us to carry out a survey of patients discharged from Aberdeen Royal Infirmary, two important decisions had to be taken; first, were the aims of the Aberdeen study to be similar to those set out in the earlier and pioneering survey conducted in Glasgow by Ferguson and MacPhail (see *Hospital and Community*, 1954, Oxford University Press) and secondly, should the methods used in that survey be repeated exactly in North-East Scotland? Obviously if precise comparisons at all points were to be valid between the Glasgow and Dundee investigations on the one hand and the Aberdeen study on the other, the objectives and techniques used would have to be sharply defined and rigorously controlled. At the initial planning meeting it quickly became clear that while the general aims of all three studies were to be closely allied, each team was likely to have certain preferences of its own both for the groups of patients to be followed up and for the methods to be used.

The central aims of our study were to discover what kind of problems are encountered by patients after they leave hospital, how successfully these are dealt with by the patients' own resources and by the various medical and social agencies that exist to help, and what additional services or rearrangement of existing services might be needed to solve, or at least mitigate, these problems. More precisely, we hoped to identify the groups of patients who fared worst, for example in respect of employment, to see whether their experience could be used to recognise potential problems at an earlier stage and thus perhaps to make some recommendations for improving after-care supervision.

Given a measure of latitude in design and method we decided to copy the foundation modelled by the now well known "Hospital and Community" study carried out in Glasgow in 1952 but to build rather differently upon it. Thus the Aberdeen survey here reported differs in three main respects.

(1) The sample contains medical, surgical and orthopaedic cases.

It seemed important to us to include all three groups of patients because they form the bulk of the work undertaken by a general

hospital and should therefore provide a clearer picture of the overall after-care experience of discharged patients. Moreover it was thought likely that comparisons between these broad groups would help to show where the most severe after-care problems lay and conversely, which kinds of patients encountered the fewest difficulties.

(2) The sample includes patients from the country as well as the town.

Previous experience in a resettlement clinic attached to Aberdeen Royal Infirmary had suggested that disabled patients in rural areas sometimes faced problems that differed both in degree and kind from comparable patients returning to home and work in the City. Despite the formidable travelling problems likely to be encountered we therefore decided to include as many country patients as possible.

(3) The follow-up period is one year only.

To a considerable extent the choice of both duration of follow up and the intervening points of contact with patients is arbitrary. We decided to visit our sample one month, three months and twelve months after discharge from hospital because our previous experience suggested that this was the best balance between (*a*) a follow up period so short that it could not cover adequately those patients whose problems were long drawn out and (*b*) a very extended follow-up in which losses due to death and change of residence could be relatively high and in which the research worker must depend rather heavily on patients' memories for dates of return to work and other important information.

The area served by Aberdeen Royal Infirmary includes the City of Aberdeen (population 186,000) the northern part of Kincardineshire, Aberdeenshire, and the counties of Banff and Moray; the total population of the area is about 425,000. The City of Aberdeen has a variety of industries most of which are 'light' or 'medium' rather than 'heavy' and many of these are directly or indirectly connected with agriculture which is the staple industry of the City's hinterland. Fishing, shipbuilding, and engineering and, to a much smaller extent, granite, are well known industries in this north-east town but the presence of a University also has an important influence on the professional composition of the population.

The first Royal Infirmary dates back to the early eighteenth century. The present building was erected in 1937 and now comprises some 600 beds of which approximately 70% are for general medical, surgical and orthopaedic patients. Linked administratively with the Infirmary is another smaller general hospital but after careful discussion, and largely for convenience, we decided to restrict our sample of patients to those admitted to the general and orthopaedic wards of the main hospital in the region—Aberdeen Royal Infirmary.

METHODS

Selection of patients

THE population to be sampled comprised male patients, aged 15 and over, discharged from three medical and two surgical wards and the orthopaedic ward of Aberdeen Royal Infirmary. Not all the medical and surgical wards could be covered with the resources available, so, to reduce the effect of bias due to selection of patients by individual wards, the medical units drawn upon were (1) the ward staffed by the University Department of Medicine (2) a ward staffed by part-time consultants and (3) the metabolic ward where most of the diabetic cases were treated; on the surgical side the wards sampled were (1) the professorial surgical unit and (2) a general surgical ward staffed by part-time consultants. In addition to the orthopaedic ward, a few cases were drawn from the inpatient dermatology department.

Preliminary study of hospital records showed that nearly 3,000 patients were discharged from the chosen wards during the year preceding the survey. We estimated that about 500 patients could be included in our follow up; because we wanted roughly equal numbers of medical and surgical cases we decided to aim at a 1 in 4 sample of 'medical' patients, a 1 in 8 sample of 'surgical' patients and a 1 in 12 sample of 'orthopaedic' cases. We would like to emphasize that while this procedure produced representative sub-samples of medical, of surgical, and of orthopaedic patients, the total group of 503 patients is of course not a true random sample of *all* hospital cases; it contains relatively more medical ward patients and

relatively fewer surgical patients than would be found in an overall random sample.

Throughout each week, with the help of the ward sisters concerned, lists were prepared of the patients likely to be discharged. Depending on whether the ward was medical, surgical, or orthopaedic, every fourth, eighth or twelfth name respectively was selected for inclusion in the survey. The initial interview with each patient was conducted in a private room and took over an hour; the random sampling worked well but occasionally such circumstances as sudden pressure on beds leading to discharge at very short notice, transfer to another hospital or to another part of the same hospital, or temporary lack of accommodation for confidential interview, made it impossible for the selected patient to be seen before he left hospital; when this happened we simply moved on to the next marked name on the list. Only two patients declined to participate: one was a gentleman who said he was about to sue the hospital and the other was a psychiatric case being temporarily treated in a general medical unit.

At the hospital interview each patient was given a full explanation of the aims of the enquiry and was asked to agree to his doctor being approached. This permission was given in every case and we then sent a letter to the general practitioner describing the study and seeking his approval for us to visit his patient one month, three months and twelve months after discharge. Not only did the general practitioners give this approval, many of them also took considerable trouble to keep us informed of change of address, change in the patient's condition or other circumstances which they knew would be helpful. We are deeply grateful to them for their interest and assistance.

The initial interviews were all conducted by the same doctor and responses were recorded on prepared record sheets under the following main headings.

(1) Past and present health
(2) Education and work history
(3) Family of origin and present family structure
(4) Housing
(5) Finance and use of social services
(6) Interests and disposition

Within each category of information details were obtained on a variety of relevant topics using a standardised type of interviewing technique. Hospital case-notes were used to check and amplify responses and by arrangement with the clinicians concerned copies of discharge letters to general practitioners were made available to us. At the conclusion of this first interview the patients were asked if we might call to learn of their progress in one month, again at three months and finally in one year's time. In all cases this request was agreed to and in the great majority interest in the project was at once expressed.

Follow-up Visits

One, three and twelve months after leaving hospital the patients' records were brought up to date by a visit to his home. Through obituary notices in the local newspapers an almost complete record of deaths was maintained and by means of a red sticker on the hospital case-notes ward sisters were able to identify, and tell us about, almost every survey patient who was back in hospital. It was relatively easy to contact city patients exactly four, twelve or fifty-two weeks after discharge but the need to keep travelling down to reasonable proportions forced us to group the county patients and this sometimes meant visiting a day or two later than the prescribed date; when this happened we simply sought information about the patient's condition on the day that he should have been seen.

These visits were unannounced, but most of the patients were in fact expecting us and even those who had forgotten made us welcome. Different proforma were used at one, three and twelve months but common to all was detailed information about the following topics:—

(1) Medical condition and medical attention
(2) Domestic circumstances
(3) Income and use of social services
(4) Employment
(5) Other personal effects of the illness

Contact with these patients was by no means always easy and interviews sometimes took place in unusual circumstances as the following case history illustrates:

Mr. A. was a middle-aged bachelor who lived in the 'bothy'(a single room attached to the farm buildings) of the farm where he worked. Originally admitted for investigation of chest pain, which proved negative, he was visited a month after discharge on a cold showery autumn day. On reaching the farm the interviewer was told he was out in the field gathering turnips; a rough journey along a muddy track and a long walk through a field followed and there was Mr. A. busy loading turnips into a horse drawn cart. He was pleased to see us and granted an interview there and then; the biting wind, sleety showers, slippery mud, and a restless horse provided a rather odd setting for an otherwise pleasant and profitable interview.

Finally the data were classified, coded and transferred to hand sorted punch cards.

The Hospital Population

In order to assess how typical our 503 patients were, a record was kept of certain particulars of patients discharged in the year of study from all the medical, surgical and orthopaedic wards. This 'population' of discharged cases amounted to 4,847 and because they offer an interesting bird's eye view of the work of those hospital wards the data are presented in full in Appendix A and in abbreviated form in Table 1.

Omitting deaths in hospital, younger patients are most commonly admitted for treatment of injuries, appendicitis or peptic ulcer; in middle aged men peptic ulcer, injuries and hernia are the commonest conditions found; older hospital patients are most likely to be suffering from prostatic and urethral disease, peptic ulcer or malignant disease of stomach, bowel or rectum. These patterns are of course very different from the general distribution of disease in the community and show how different hospital medicine is from that of the work of the general practitioner.

We have closely examined the correspondence between our sample and the population from which it is drawn, bearing in mind our deliberate plan to obtain roughly equal numbers of medical and surgical patients. The results of this comparison may be summarised in the finding that our sample contains fewer short-stay cases and a higher proportion of long-stay cases than the population of patients discharged from these

TABLE 1. *Distribution of seven commonest diagnoses by Age in 4847 patients discharged from Aberdeen Royal Infirmary between November 1957, and October, 1958*

Age 15–39			*Age* 40–59			*Age* 60 & *over*			*All ages*		
Diagnosis	*No.*	%	*Diagnosis*	*No.*	%	*Diagnosis*	*No.*	%	*Diagnosis*	*No.*	%
Injuries	331	22·0	Peptic Ulcer	271	15·1	Prost. hyperpl. and stricture	176	11·4	Injuries	667	13·8
Appendicitis	210	14·0	Injuries	213	11·9	Peptic Ulcer	154	10·0	Peptic Ulcer	594	12·3
Peptic Ulcer	169	11·2	Hernia	107	6·0	G.I. Carcinoma	134	8·7	Appendicitis	331	6·8
Diabetes	65	4·3	Appendicitis	86	4·8	Injuries	123	8·0	Hyperpl. prost. and stricture	210	4·3
Haemorrhoids, anal fissure and perianal abscess	59	3·9	Arteriosclerotic heart disease	83	4·6	Arteriosclerotic heart disease	100	6·5	Hernia	207	4·3
Acute Backache & prolapsed discs	51	3·4	Diabetes	63	3·5	Diabetes	71	4·6	Diabetes	199	4·1
Hernia	49	3·3	Renal stone and colic	59	3·3	Hernia	51	3·3	Arteriosclerotic heart disease	193	4·0
Other	571	37·9	Other	915	50·9	Other	736	47·6	Other	2446	50·5
Total	1505	100%	Total	1797	100%	Total	1545	100%	Total	4847	100%

wards; this is explained by the difficulty of contacting patients admitted for only one or two days and is not considered to be a serious bias since it is likely that such short-stay cases presented fewer of the after-care problems in which we were primarily interested.

FINDINGS

The survey patients and their diseases

(*a*) *Medical Wards*

Among patients discharged from medical wards the most common conditions were, coronary heart disease (42 cases), bronchitis (21), cerebral haemorrhage (17), peptic ulcer (15), diabetes (19), acute respiratory infection (13), and hypertension (16).

(*b*) *Surgical Wards*

The most frequently encountered conditions in surgical patients were peptic ulcer (37), appendicitis (29), hernia (24), malignant disease of stomach and bowel (16), renal stone and colic (15), and retention of urine (17).

(*c*) *Orthopaedic Wards*

Fractures of limbs, acute backache, and laminectomies together accounted for two thirds of all the orthopaedic patients seen.

There was of course a wide variety of diseases represented in the whole sample but the above list of commonest conditions shows how a few diseases predominate in the work of a modern general hospital. Stomach ulcer, coronary heart disease, disorders of the vascular system, appendicitis, hernia, diabetes, and injuries are indeed 'modern epidemic diseases' and together their treatment must account for the use of a very substantial proportion of our hospital resources. One way of measuring this is duration of stay in hospital and this is shown for age and certain diseases in Tables 2 and 3.

As would be expected, patients with appendicitis and hernia are in hospital for shorter periods than those with prostatic disease (the main cause of urinary retention); this is still true

when allowance is made for the cases of retention which were missed because they were admitted for only a day or two. Among medical patients coronary thrombosis cases are relatively much longer in hospital than either bronchitics or diabetics and this also obtains when missed short-term cases are

TABLE 2. *Duration of stay in hospital, by age, of sample patients with three surgical diagnoses*

Disease	*Age Group*	*Days in Hospital*			*Totals*
		1–6	7–21	22 & *over*	
Appendicitis	15–39	4	12	2	18
	40–59	1	9	–	10
	60 & over	–	1	–	1
	Totals	5 17%	22 76%	2 7%	29 patients 100%
Hernia	15–39	1	5	–	6
	40–59	2	10	–	12
	60 & over	1	5	–	6
	Totals	4 17%	20 83%	–	24 patients 100%
Urinary Retention	15–39	–	–	–	–
	40–59	–	–	2	2
	60 & over	–	5	10	15
	Totals	–	5 29%	12 71%	17 patients 100%

included. Quite apart therefore from the fate of these people after they leave hospital, it is clear that hospital patients are a very heterogeneous group in respect of the diseases from which they suffer, of the time they spend in hospital, and of the claims they make on the hospital service.

Previous Health

To establish a base-line from which the patients' progress could be measured it was necessary to look first at the health of

the sample before they entered hospital. To measure this we classified people as follows:—

Good previous health—only minor illnesses of short duration.

Moderate previous health—history of some protracted episode of ill health but with little or no loss of work or period of incapacity in the last five years.

Poor previous health—history of ill health causing frequent absence from work or incapacity in the past five years.

TABLE 3. *Duration of stay in hospital, by age, of sample patients with three medical diagnoses*

Disease	*Age Group*	*Days in Hospital*			*Totals*
		1–6	7–21	22 & *over*	
Coronary heart dis.	15–39	–	–	1	1
	40–59	–	4	16	20
	60 & over	1	10	11	22
	Totals	1 3%	14 32%	28 65%	43 patients 100%
Bronchitis	15–39	–	–	–	–
	40–59	–	10	3	13
	60 & over	1	7	1	9
	Totals	1 5%	17 77%	4 18%	22 patients 100%
Diabetes	15–39	1	4	2	7
	40–59	–	8	1	9
	60 & over	–	3	1	4
	Totals	1 5%	15 75%	4 20%	20 patients 100%

Such arbitrary classifications have many imperfections but repeated checks of the data by three observers suggested that the ratings were reasonably consistent.

Good Previous Health. Mr. G., age 44, an excavator driver, had poliomyelitis as a child affecting his left leg; it was a long time before he could walk and he did not go to school until he was eight but

thereafter had a good attendance. He played football (as goal-keeper), could run after a fashion and lived (he felt) a full and adequate life. At a dance he was knocked over and was admitted to hospital with a fractured femur.

Moderate Previous Health. Mr. F., age 52, a commercial traveller, had suffered from intermittent dyspepsia for over twelve years. He had long free spells and before admission had had no symptoms for over a year. For the past two years he had been bothered with eczema apparently caused by contact with detergents. Following the sudden onset of severe abdominal pain, he was admitted to hospital with a perforated duodenal ulcer.

Poor Previous Health. Mr. B, aged 57, was admitted to a surgical unit with epididymo-orchitis. Two years previously he had been working in the South of England as a contractor's labourer and had suddenly experienced severe chest pain; he went to a doctor 5 miles from the camp where he was working but on being told there was nothing wrong and that he was fit for work, decided to return to Aberdeen. The pain returned while he was on the train and he was admitted directly into hospital on arriving in Aberdeen. After a month in hospital he was discharged but readmitted within 10 days with a third attack and, in fact, a year later was admitted to hospital with his fourth coronary thrombosis. Mr. B. now has severe angina and can only walk 100 yards before the pain forces him to rest, he needs 4 pillows in bed, and has not been able to lie down flat for over a year. He had had a hydrocele and later cystitis for three months before his admission with epididymo-orchitis.

The results are shown in Table 4.

Two trends are visible in Table 4. As age increases the proportion of patients previously in good health diminishes. Secondly, surgical and orthopaedic patients under age 60 were on the whole in better health prior to the onset of the illness that brought them into hospital than were the medical patients; over age 60 the relationship is reversed and while this might be due to the play of chance in sampling, it could also be explained by the fact that older medical patients with chronic disease are often diverted to one or another of the two geriatric hospitals in Aberdeen. To emphasize the important point that medical ward patients have as a group a greater load of previous ill health, we divided patients whose previous health

TABLE 4. *Previous health of medical, surgical and orthopaedic patients, by age*

*Previous Health**	*Medical*				*Surgical*				*Orthopaedic*				*Survey Totals*
	Age			*Totals*	*Age*			*Totals*	*Age*			*Totals*	
	15–39	40–59	60+		15–39	40–59	60+		15–39	40–59	60+		
Good . . .	19 38%	30 24%	23 31%	72 28%	32 51%	32 40%	14 29%	78 40%	13 65%	16 53%	1 12%	30 52%	180 35·9%
Moderate . .	20 40%	50 39%	29 38%	99 40%	21 33%	31 38%	28 57%	80 41%	7 35%	11 37%	3 38%	21 36%	200 39·7%
Poor . . .	11 22%	47 37%	23 31%	81 32%	10 16%	18 22%	7 14%	35 19%	– –	3 10%	4 50%	7 12%	123 24·4%
Totals . . .	50 100%	127 100%	75 100%	252 100%	63 100%	81 100%	49 100%	193 100%	20 100%	30 100%	8 100%	58 100%	503 100%

* For criteria see text

was other than good into those whose condition on admission was related to their previous ill health and those who were admitted for a 'new' complaint; among medical cases 108 out of 180 (60%) were admitted for a recurrence or aggravation of some pre-existing condition whereas only 52 out of 143 (37%) surgical patients came into this category. The importance of this difference will become apparent in the analysis of after-care experience.

It is well known from many morbidity and mortality studies that patterns of disease vary with Social Class as defined by the Registrar General. When to previous health by age and ward, Social Class was added, numbers in each cell became small and percentage fluctuations increased; nevertheless a fairly clear trend emerged, the proportion of Social Class IV and V (the semi-skilled and unskilled) patients with good previous health being lower than in Social Class I & II (professional and higher technical occupations) with Social Class III (skilled workers) occupying an intermediate position. The interpretation of such results must however be modified by the probable operation of selection factors such as the tendency of men in higher income groups to seek specialist care in nursing homes.

Condition on Discharge

As a further index of the state of these patients when they left hospital, capacity for movement was examined. Three categories are shown in Table 5; 'mobile' includes all patients whose condition or treatment did not interfere with their ability to get about; 'restricted' means a patient who was able to move around but with some difficulty; the 'housebound' category contains both patients who were up but unable to leave the house and those who were confined to bed.

As expected, increasing age is associated with a reduction of mobility. Medical patients tend to be less restricted than surgical and orthopaedic cases on discharge but the proportion of housebound patients from medical wards is on the whole higher—as might be predicted from the higher incidence of severe chronic disease among them. The findings in Table 5 can be summed up by saying that, age for age, surgical and orthopaedic patients are roughly twice as likely to be disabled when they leave hospital—most of them temporarily so—as

TABLE 5. *Capacity for movement on discharge by age and ward*

*Capacity for Movement**	*Medical*				*Surgical*				*Orthopaedic*				*Survey Totals*
	Age			*Totals*	*Age*			*Totals*	*Age*			*Totals*	
	15–39	40–59	60+		15–39	40–59	60+		15–39	40–59	60+		
Mobile . . .	41 82%	57 45%	27 36%	125 50%	21 33%	18 22%	11 22%	50 26%	2 10%	5 17%	2 25%	9 15%	184 36·6%
Restricted . .	7 14%	53 42%	26 35%	86 34%	41 65%	61 75%	24 49%	126 65%	16 80%	22 73%	5 63%	43 75%	255 50·7%
Housebound . .	2 4%	17 13%	22 29%	41 16%	1 2%	2 2%	14 29%	17 9%	2 10%	3 10%	1 12%	6 10%	64 12·7%
Totals . . .	50 100%	127 100%	75 100%	252 100%	63 100%	81 100%	49 100%	193 100%	20 100%	30 100%	8 100%	58 100%	503 100%

* For criteria see text

are medical ward patients, and thus throw a correspondingly greater immediate strain on domestic resources.

FINDINGS ONE MONTH AFTER LEAVING HOSPITAL

Losses

SEVEN patients had not survived the first month after leaving hospital. Four were proven cases of malignant disease who went rapidly downhill, one was a suspected carcinoma, one was a chronic bronchitic with hypertension, and the seventh death was due to recurrence of a coronary thrombosis. Six died at home, and one died in hospital the day after an emergency re-admission.

In one case only did there seem to be a possible precipitating factor. This was a man of 64 who, two weeks after leaving hospital where he had been treated for a myocardial infarction, returned to his own business because there was no one else to attend to it.

Progress in health

Table 6 was compiled to show the degree of improvement in medical, surgical and orthopaedic patients during the four weeks after leaving hospital, using capacity for movement on discharge as the base line.

Rather surprisingly, it was found that older patients had improved about as much as younger patients; we must however again point out that in the admissions to an acute general hospital some selection inevitably takes place, older more chronic patients tending to be diverted to other units specially adapted for the care of long-term patients. Table 6 shows a fairly marked difference between wards, orthopaedic patients as a group having the lowest rate of improvement, surgical patients the highest, and those from medical wards occupying an intermediate position.

There were wide variations within ward groups according to the nature of the patient's disease. At one extreme was the patient with appendicitis whose mobility, on discharge home after perhaps only 8 days in hospital, was at first very restricted but who within a few days was fully mobile again; at the other

TABLE 6. *Improvement in capacity for movement one month after discharge*

Mobility at one month compared with mobility on discharge	*Medical*				*Surgical*				*Orthopaedic*				*Survey Totals*
	Age			*Totals*	*Age*			*Totals*	*Age*			*Totals*	
	15–39	40–59	60+		15–39	40–59	60+		15–39	40–59	60+		
Improved . .	15 30%	34 27%	26 37%	75 30%	31 49%	47 59%	26 54%	104 55%	3 15%	5 17%	1 12%	9 16%	188 37·9%
Same . . .	31 62%	77 61%	40 55%	148 60%	29 46%	26 33%	18 38%	73 38%	16 80%	25 83%	7 88%	48 82%	269 54·2%
Worse . . .	4 8%	15 12%	6 8%	25 10%	3 5%	6 8%	4 8%	13 7%	1 5%	–	–	1 2%	39 7·9%
Totals 100% . .	50 100%	126 100%	72 100%	248 100%	63 100%	79 100%	48 100%	190 100%	20 100%	30 100%	8 100%	58 100%	496 100%
		1 death	3 deaths			2 deaths	1 death						

were the hemiplegic who at one month was still unable to get beyond the confines of his own home, and the man whose fractured leg had not yet reached the stage of healing when he could begin to move around with freedom. Numbers were not large enough to compare improvement by individual diseases.

Return to employment

A second index of recovery from illness is return to work. There are, however, some drawbacks to a straightforward tabulation of this kind; men over 65 may be retired and men under 65 may, through illness or disability, have been out of work prior to entering hospital. We therefore decided to break this analysis up into (*a*) men under 65 who on leaving hospital said they had a job waiting for them, (*b*) men under 65 who had no job to return to, and (*c*) men age 65 and over.

(*a*) *Patients under age* 65 *with a job waiting*

351 men (83·1% of the total under age sixty-five) thought on discharge that their employers were willing to take them back when fit. When interviewed a month later 110 of the 347 survivors (31·7%) had resumed work but further analysis showed that the proportion varied under the influence of a number of factors.

Age

In the 15–39 age group 38·8% were back at work within a month, at age 40–59 this proportion fell to 26·4% but in men age 60–64 the figure was 31·4%; when the trend with age was examined separately in medical and surgical patients a consistent decline in the proportion back at work was again observed in all categories except the oldest age group. Two explanations are possible, the first that this is a chance effect in small numbers, the other based on the effects of selection; it will be recalled that we are examining those men who had been working before their illness and who had a job awaiting them; it is reasonable to suggest that these men are 'survivors', i.e. men who had remained fit enough to work up to or near the time of admission to hospital, a suggestion strengthened by the finding that 39% of the 60–64 age group had been doing heavy work prior to their illness compared with 27% and 33% in the

age groups 40–59 and 15–39 respectively. Further evidence of this selective effect will be presented when the fate of men who were not working before admission is examined later.

Type of work

When, with due allowance for age, the proportion back at work a month after leaving hospital was studied in relation to the heaviness of the job they were doing, light workers were more fortunate than others both in medical and surgical groups. On the whole relatively more medical than surgical patients were back in employment at one month, and both these categories had a higher proportion of returns to work than among orthopaedic patients.

Social class

We could discern no consistent pattern with social class though there was a suggestion that, after allowing for the above factors, semi-skilled and unskilled workers had a lower rate of return than their more skilled fellows; again this could be due to the selection effects described above but the point will be discussed in a later context.

Method of payment

We also studied the difference between return to work in men who were self-employed, in those who enjoyed the benefits of a sick-pay scheme, and in those men whose only income while off work was from national insurance benefits or assistance allowances. In this analysis where other factors such as age, ward, and work heaviness have to be standardised, numbers in each cell of a table become extremely small and percentages correspondingly variable; there was however a rather higher rate of return to work among self-employed men in the youngest and oldest age groups.

Town and country

A further breakdown was examined—between town and country patients. One difference stood out immediately; according to our classification, 28·6% of city men were heavy workers compared with 51·4% in the country. ('Work heaviness' is of course rather a subjective assessment but our ratings

were the product of three independent opinions and are, we believe, reasonably reliable). Despite this markedly higher proportion of heavy workers in the rural sub-sample the proportion back at work one month after discharge was much the same as in the city workers, suggesting a 'cultural' difference in attitude to return to work. Other explanations are possible—fewer alternative jobs in rural areas for example—and these we think should be the subject of further research.

(*b*) *Patients under age* 65 *without a job*

As previously explained, we separated patients under age 65 who for one reason or another had, on discharge, no definite job awaiting them. That these patients differed in certain important respects from those who said their previous employment would be open to them is apparent from the following comparison.

	347 *men with a job waiting*	71 *men with no job waiting*
Proportion of country patients . . .	33·7%	41·9%
Proportion of men aged 40 and over . .	65·1%	79·0%
Proportion of patients from medical wards .	48·1%	63·3%
Proportion of patients in poor previous health .	19·9%	53·2%

Thus it emerged that patients who were jobless on discharge were more often from the country, older, and more likely to be chronically disabled than were those patients who had a job to return to. Spells of unemployment were much more common in the past history of this group but it was often difficult or impossible to be sure why such men had been out of work; previous experience with unemployed men had made us aware of the tendency to attribute loss of job, or failure to find a job, to minor disabilities even when much more likely factors such as poor attitude to work were prominent. We therefore examined the patients' work records with great care and only when the evidence for ill health as a main cause of the unemployment immediately preceding hospital admission was

beyond reasonable doubt did we record it as such. The findings suggested that in about one half of the men who had no job awaiting them, their previous unemployment experience was to be explained largely on the grounds of disability.

In view of their record of ill health and unemployment, their recent hospital experience, and the fact that each man had to seek a new job, it came as no surprise to find that, one month later, this group compared much less favourably with those who on discharge had a job open to them. The findings were:—

One month after discharge	*Men with a job waiting*	*Men with no job waiting*
Proportion whose mobility had improved	41·2% (143 out of 347)	15·5% (11 out of 71)
Proportion at work	31·7% (110 out of 347)	4·2% (3 out of 71)

The evidence then shows clearly that male hospital patients under 65 fall into two groups which can be distinguished by their medical and occupational experience *prior to admission.* There is some overlap between the two groups and a study extended over a long period would no doubt reveal those patients who move with the passage of time from one group to the other, thus making it feasible to identify the vulnerable patients before they reach the stage at which little or no remedial action is possible.

(*c*) *Patients aged* 65 *and over*

At or about age 65 the pattern of return to work is modified by retirement. Of the 78 men aged 65 and over who survived the first month after discharge, 48 (61·5%) were retired before their admission to hospital; when seen a month later 47 regarded themselves as retired and one man had found a part-time job.

15 men had been working part-time and 15 full-time before their admission to hospital; four weeks after discharge eight of the part-timers were back at their former jobs, only two of the full-timers had resumed work, and three men had changed from full-time to part-time work. Of the eleven men who were doing part-time jobs one month after discharge no less than

ten were self employed men, either farmers, crofters, or business owners; such men were able to suit the amount of work they did to their state of health, the usual arrangement being that a relative, friend, or partner carried on the more strenuous work leaving the patient to supervise and tackle such lighter tasks as he felt fit to do. Where it is feasible and desired, this kind of arrangement is admirable and allows even a severely disabled old man to perform useful and satisfying work at his own pace.

Mr. K., age 68, had been admitted to hospital for the treatment of prostatic enlargement. He rented a very large farm which was run by his two sons and four men. He had long since stopped doing much heavy work and was available to stand in if any of the other workers were unfit. Otherwise he looked after the poultry, kept the books and attended the marts. As he said, it was his whole life's experience and he was loath to give it up although he felt the time was coming when he must leave his sons to run the farm themselves.

Mr. J., age 75, a retired harbour worker, was admitted to hospital for the treatment of a papilloma of the bladder. Mr. J. had retired from superannuated employment ten years before and a month after he stopped work his daughter-in-law found him a job as a Sunday caretaker at a sportsground. His whole week revolved round his day at work, for which he prepared with great care; it gave him a sense of purpose and he was extremely pleased with life. In his own words, 'It's a fine little job for me, I have a warm room and they've newly done it up for me'. With his part-time employment, his small superannuation and his old age pension, Mr. J.was financially and comfortably independent.

Mr. C., age 74, a retired chauffeur, was treated in hospital for a right lower lobar pneumonia. After the death of his employer he had taken a light part-time job in a garage showroom looking after the cars on display, but this employment was marred by a slight prejudice on his part. Mr. C. was exceedingly (and rightly) proud of the fact that he held the first certificate in the north-east of Scotland as a maintenance-driver of a Rolls Royce. He was then asked by a retired business man to look after and drive his car; this was really a part-time job as well, since his new employer did not go out a lot. Needless to say the car was one for which Mr. C. held a certificate of competence.

The relationship between health and retirement has been extensively studied and only a brief mention is appropriate here. The findings for all men aged 65 and over were as follows:—

Health before admission to hospital	*Proportion working before admission (2 deaths excluded)*		*Proportion back at work (full or part-time) one month after discharge*	
Good	$\frac{14}{26}$	54%	$\frac{7}{14}$	50%
Moderate	$\frac{11}{38}$	29%	$\frac{5}{11}$	46%
Poor	$\frac{3}{17}$	18%	$\frac{1}{3}$	33%

30 men had been in employment before admission to hospital; when seen a month later 15 of the 28 survivors were not at work, and, with the exception of one who had decided to retire and two who intended to go back, were unable to say whether they would resume either whole or part-time jobs. Some hoped they would recover sufficiently to do so, others were so doubtful of their future capacity for work that they had begun to think of retiring. This uncertainty about fitness for work one month after leaving hospital was observed at all ages and quite soon after the one month visits began we became aware how difficult it often was, both for the patient and his advisers, to reach a decision about his occupational future so soon after discharge from hospital.

Mr. T., age 43, a mechanic, had been admitted to hospital with a carcinoma of his large bowel which had been treated surgically by a resection and colostomy. When seen at one month Mr. T. had not recovered from the psychological effects of his operation. He was extremely unhappy and pessimistic about his ability to control this 'new opening' and his eventual fitness for work. But at three months he was back at work, employed on light servicing of cars and was very pleased both with the results of the operation and his own progress.

Problems at one month

One of the aims of this study was to examine the nature and extent of problems encountered by patients after they left hospital. Broadly speaking these problems may be of two kinds, those which are a direct effect of the illness which brought the patient into hospital, and those which are unrelated to the

hospital admission. The interviews brought to light a considerable number of problems in both categories. For example, a partially paralysed labourer appeared very worried while in hospital about his ability to resume work with a weakened hand and arm; a month later he was back at his job but still a very worried man because a large debt incurred by his wife some months before he became ill was still unpaid. Another man was acutely depressed when seen four weeks after discharge because he saw no possibility of returning to his job as a trawl fisherman; such however was the improvement in his health during the next few weeks that he was back at work by the time the three month interview took place—his problem had solved itself.

We have already described the group of 71 men under 65 years of age who, on leaving hospital had no definite job awaiting them. One month later 68 men were not at work and could, on that account, be said to have an employment problem. This however is not a realistic viewpoint since the majority of this group were not yet in a position to say whether they could or could not work—a further period of observation was essential to determine whether recovery to the point of fitness for employment would take place.

In fact the commonest 'problem' at this one month stage was medical; apart from those—about one quarter of the men under 65—who had resumed employment, most of the men were still 'patients' whose medical care and convalescence had not reached the point at which further improvement was unlikely and it was therefore often difficult or impossible to know whether a financial, occupational or other problem attributable to the illness really existed. Nevertheless over one hundred patients told us at the one month interview that they were worried about the present or future and the following example and list show some of the situations encountered.

Mr. W., a small crofter, age 63, was admitted to hospital for a prostatectomy but following his operation he became mentally confused. When visited at one month his confusion persisted and—not to put too fine a point on it—the visit was unwelcome. His wife was extremely distressed at his behaviour and was worried about the running of the croft. When seen at twelve months Mr. W. was a completely changed man, looking extremely well, working hard and a most courteous host.

28 men were afraid that their jobs might not be kept open much longer.
24 had begun to doubt whether they would be fit to return to their old jobs.
22 were beset by housing difficulties, such as being unable to negotiate stairs, having no bath or an inconveniently placed W.C.
12 were back at work but finding their jobs a serious strain.
8 were mentally disturbed and appeared to need psychiatric help.
6 were drinking heavily to the distress of their families.
4 had started work and been paid off within a few days.
4 were in serious financial difficulties.
4 were involved in family disputes.

Some of these problems antedated the illness and were either unrelated to it or aggravated by it, others were directly due to being ill and off work. But, both among these men and the remainder who had no specific problem, there was at this early stage of recovery the hope that before long disability would disappear or lessen to the point at which employment could again be resumed. The common farewell to this first domiciliary interview was 'it'll be different when you come back'.

FINDINGS THREE MONTHS AFTER DISCHARGE

Losses

BETWEEN the first and second follow up interviews a further 14 patients died, of whom twelve were medical cases and two surgical. Their age group and cause of death are shown below:–

Age 15–30	Hodgkin's Disease
	Leukaemia
Age 40–59	Leukaemia
	Hypertension, cardio-renal failure
	Brain tumour
	Lung cancer (2 cases)
	Cancer of alimentary tract

Age 60 *and over*	Coronary thrombosis (2 cases)
	Lung cancer
	Brain tumour
	Cancer of bowel and kidney infection
	Cardiac failure

Only one of those who had been employed prior to their illness was able to go back to work before death. 9 of the 14 died in hospital and 5 died at home. Information obtained either through relatives or from hospital staff revealed the heavy domestic burden of caring for a very ill patient but in all cases the medical and related services such as home nursing and home help had done all that was possible to relieve the relatives.

In seven cases contact at three months proved very difficult owing to a change of address to an area outside the north-east region. For example two men had moved to London but their new addresses were eventually obtained and one of us interviewed them during a professional visit to London for other purposes. In fact all seven were finally traced and provided information about their situation three months after leaving hospital.

Mobility

Using the same criteria for measuring mobility as were applied at the time of discharge and at one month after leaving hospital, a further improvement in capacity for movement was found at three months.

Two fairly clear trends are visible in Table 7. At each point in time medical, surgical, and orthopaedic patients show a decline in mobility as age group increases. Secondly, within age groups each category of patients shows an improvement in mobility as they move from discharge through to three months. There are, however, variations in the rate of improved mobility; at the time of discharge medical patients have the advantage but surgical patients improve more quickly whilst orthopaedic cases show a slower rate of improvement to begin with and a relatively large improvement between one and three months. Both medical and surgical patients improve more rapidly in the first month than they do in the subsequent two months.

TABLE 7. *Proportion of men with unrestricted movement by age and medical category*

Age	*Time*	*Medical*	*Surgical*	*Orthopaedic*	*Totals*
15–39	Discharge	41/50 82%	21/63 33%	2/20 10%	64/133 48%
	One month	42/50 84%	52/63 83%	6/20 30%	100/133 75%
	Three months	46/48 (2 deaths) 96%	50/63 79%	16/20 80%	112/131 (2 deaths) 84%
40–59	Discharge	57/127 45%	18/81 22%	5/30 17%	80/238 34%
	One month	65/126 (1 death) 52%	58/79 (2 deaths) 73%	8/30 27%	131/235 (3 deaths) 56%
	Three months	76/121 (6 deaths) 63%	66/79 84%	16/30 53%	158/229 (6 deaths) 70%
60 and over	Discharge	27/75 36%	11/48 23%	2/8 25%	40/131 31%
	One month	39/72 (3 deaths) 54%	28/47 (1 death) 60%	2/8 25%	69/127 (4 deaths) 54%
	Three months	42/70 (5 deaths) 60%	34/46 (2 deaths) 74%	5/8 63%	81/120 (7 deaths) 68%

As might be expected most of the improvement took place in men who were initially restricted rather than housebound. On discharge 60 men were housebound, at three months the number was 55 but some movement in and out of this group had taken place. For example a hemiplegic had recovered sufficiently to get out for a walk while a man with advancing inoperable malignant disease had lost his restricted mobility and was bed-fast.

Return to work

Following the practice described earlier we examined separately the employment experience at three months of (*a*) men who were working before admission and had a job to go back to and (*b*) those who had no definite prospect of employment.

(*a*) *Patients under age* 65 *who were employed before admission*

The overall proportion of men back at work had doubled since the last interview—31·4% at one month, 66·6% at three months. With increasing age in both town and country patients the proportion in employment fell and this age effect remained when medical, surgical and orthopaedic groups were compared.

Surgical patients had a higher rate of return to work than medical patients; the lowest proportion in employment at three months was among orthopaedic cases. These general trends concealed wide individual variations within categories and it was not always easy to decide whether a man should be classed as working or not working; for example 12 self-employed men, either farmers or shopkeepers, were officially sick but had in fact begun to take some part, usually a supervisory one, in the running of their business. 7 men had been working but were back on sickness benefit when we saw them at three months.

Of the 112 men who were not working, 13 were drawing unemployment benefit because the job they held before admission and hoped to resume was either not available or was unsuitable; three of these 13 had started work but been paid off, five more were paid off while still unfit for work, and

five said their doctors had advised them not to resume their former jobs.

The other 99 men not back at work were drawing sickness benefit and their doctors must therefore have decided that they were not yet fit to return to the jobs they had formerly held.

(*b*) *Men under* 65 *who were not employed on admission*

12 out of 71 men in this group or 17% were working at three months compared with 4·2% at one month. The pattern with age and ward category was very similar to that found among men with a job on admission. 17 of the 59 not at work were drawing unemployment benefit and so could be regarded as fit for some kind of employment; the remainder of 42 were drawing sickness benefit and if this be taken as a general criterion of unfitness for employment some 59% of this group were unfit at three months compared with 30% of the men who were employed before admission.

The findings at three months then confirm the conclusion reached at one month that patients without a job to return to on discharge are a more disabled group than their fellow patients under 65.

The effect of skill on return to work was also examined. The previous work record was used to allocate men to three broad classes of occupational skill—non-manual, skilled and unskilled. Analysis showed that in the group of men under 65 who were employed before their illness 43·7% were unskilled compared with 72·9% among those who were not employed before admission. When return to work at three months was broken down by level of skill, there was little difference between men who were back at work, and men who were not, in the group who had a job to return to, but there was a difference in the other group; among men who had had to seek a new job and were successful 58% were unskilled, whereas 76% of those who were not back at work were unskilled. This confirms the wellknown fact that, other things being equal, the unemployed unskilled man is less likely to be resettled in work than his more skilled contemporary.

(*c*) *Men age* 65 *and over*

In this age group also there was a rise between one and three

months in the proportion back at work. The number of part-time workers had increased from eleven to seventeen and the number doing full-time work from two to six. The occupations are listed below with the individuals' ages in brackets:—

Full-time	*Part-time*
Welfare supervisor (67)	4 Farmers (65) (66) (70) (75)
Welder (68)	2 Drivers (66) (74)
Plater (69)	2 Smallholders (68) (86)
Farmer (73)	2 Crofters (66) (82)
Labourer (71)	2 Businessmen (68) (73)
Farm worker (68)	Secretary (68)
	Caretaker (75)
	Accountant (67)
	Personnel Officer (72)
	Telephonist (71)

Twelve of the seventeen part-time men were able to choose how much or how little they did each day and both they and the five others in the group left us in no doubt of the satisfaction these part-time occupations gave them.

It is interesting to note that these illnesses severe enough to be treated in hospital were in only six cases an actual *cause* of complete retirement from full-time work. The others were either retired before admission or retired afterwards for some reason unconnected with their illness; for example, one man retired because his wife was ill and he was needed at home, another gave up because he disliked the work.

Summary of factors affecting return to work

The main discussion of our findings will follow the results obtained from the one year follow-up but it may be useful at this point to summarise the variables which appear to affect return to employment during the first three months after leaving hospital. In this analysis men who were retired before admission have been excluded.

We have already shown that age group and ward category (medical, surgical and orthopaedic) are important but the relevant data are reproduced below in Table 8.

TABLE 8. *Employment position at three months, by age and ward category, of men who were not retired before admission to hospital*

Age Groups	*Wards*	*At work*	*Not at Work*	*Number of Patients*
15–39	Medical	78%	22%	50
	Surgical	83%	17%	63
	Orthopaedic	58%	42%	19
40–59	Medical	51%	49%	119
	Surgical	61%	39%	80
	Orthopaedic	30%	70%	30
60 & over	Medical	36%	64%	42
	Surgical	48%	52%	25
	Orthopaedic	50%	50%	6

To examine the influence of other factors on return to employment it was necessary first to standardise for age and ward category. The results can be summarised as follows:—

Characteristics of patients with highest rate of return to work	Good previous health Mobile on discharge Less than 14 days in hospital Skilled occupation Employed before admission Job medium to light
Characteristics of patients with lowest rate of return to work.	Chronic illhealth Restricted mobility on discharge More than two weeks in hospital Unskilled occupation No job to return to on discharge Previous jobs heavy

The data did not allow detailed analysis of the relative importance of these various factors and we would certainly not claim that they are the only characteristics that determine the employment situation three months after leaving hospital.

Moreover in many patients there was a mixture of favourable and unfavourable factors, the interplay of which could sway the occupational outcome one way or the other. It is however fairly clear that if, on discharge, a certain combination of factors is present, then employment difficulties are likely and special after-care supervision will be required.

Finally, we attempted to tease out the effect of individual diseases on return to work. This is by no means an easy task even when the medical condition is comparatively homogeneous; in a previous follow up study of 114 patients with perforated peptic ulcer (Weir and Webster, 1959) considerable variation was found in their general health and in several cases it proved difficult to be sure when a non-return to work was due to health factors or to some personal or social circumstance, or to both. In the present study we were able to make only a few very limited comparisons:—

	Proportion at work by three months	
Appendicitis . .	27 out of 28	96%
Diabetes . . .	12 out of 18	67%
Hernia . . .	12 out of 20	60%
Bronchitis . . .	6 out of 16	37·5%
Coronary heart disease .	6 out of 37	16%

With such small numbers only an approximate standardisation of other factors was possible in arriving at these comparisons and we put them forward merely as suggestive evidence of the effect of individual disease groups on return to work. Only in very large scale follow-up enquiry would it be feasible to isolate with confidence the purely medical factors from all the others that influence the time off work.

FINDINGS ONE YEAR AFTER LEAVING HOSPITAL

Deaths

BETWEEN the three and twelve month interviews a further 30 patients died making a total of 51 deaths (10%) since discharge. Of these 51, 23 patients died from malignant disease, 15 from cardiac failure, and the remainder from various causes.

29 of the 51 patients died in hospital and 22 died either in their own homes or in the homes of relatives.

Classification of deceased patients by their state of health prior to the onset of the illness that brought them into hospital at the start of our study showed that only 2 out of the 12 surgical cases had previously been in poor health compared with 22 out of the 39 medical cases. The apparent discrepancy between deaths from malignant disease and 'surgical' deaths is explained by the presence of 5 cases of malignant blood disease and five cases of cancer of lung or bronchus in medical wards, the latter having been admitted for investigation of respiratory symptoms and found to be beyond surgical help.

Information about the circumstances of death varied so much that no useful analysis can be made of the services used or how adequate they were. But from several relatives we learned of the heavy burden borne by those who have to care at home for a dying patient and we think that more systematic study of this problem is required.

Change of address

41 patients had changed their address since leaving hospital; 3 were abroad but were contacted by letter; 7 had gone to England and all were interviewed either at their new address or during a return visit to Scotland; 7 were living in the south of Scotland and all were seen; of the remaining 24 who were still in the north-east area only one was not interviewed but we managed to contact him by letter.

A new job was the main reason for moving out of the area; a change of house or lodgings usually accounted for internal moves. In all cases we were able to get a good deal of information about the state of health, occupation and domestic circumstances exactly twelve months after the man left hospital.

Readmissions

Of the 452 patients who survived the full year after discharge, no less than 113 (25%) had been readmitted to hospital on one or more occasions. Almost 90% of these readmissions were for recurrence or complications related to the condition for which the patient had been admitted when first seen in our study. Whilst readmission policy probably varied a little

between units, depending for example on the clinician's interests and research, the main consideration was of course the state of the patient's health; thus diabetics were fairly frequently readmitted for short periods to enable the condition to be stabilised; some surgical procedures such as reconstruction of a severely damaged hand required up to four spells in hospital; recurrent wound infection, repeated attacks of renal colic, chronic bronchitis, a secondary coronary thrombosis, complications following prostatectomy, leukaemic relapse, and chronic nephritis were other conditions that led to readmission.

We found it difficult to assess how far readmission was determined by non-medical factors such as bad housing. In a very few cases overcrowding, sanitary defect, misunderstanding or neglect of therapeutic instructions seemed to play some part in causing breakdown. To test the association between housing conditions and readmission we used the health rating described below and in Appendix B. When all the data were tabulated no difference was found between those in good health and those in poor health in respect of crowding, sharing a house, or toilet amenities—yet the readmission rates rose from 6% in Group A (the best health group) to 45% in Groups C & D (the groups with poorest health). Had there been any noticeable associations between readmissions and housing conditions in Aberdeen we would have expected indices such as overcrowding to increase as health rating deteriorated. With the exception therefore of the occasional case where impression indicated otherwise we have been unable to demonstrate any effect of housing conditions upon admission to hospital; this certainly does not mean that no such association exists elsewhere, for example in the field of infectious disease or in geriatric units, but the negative findings quoted above do suggest that it may be all too easy to attribute recurrence to bad housing when the real explanation lies elsewhere.

Health

The limitations of measurements of health are well known, indeed their very profusion is evidence of the difficulties involved in trying to reduce a complicated concept to a form that can be handled numerically. The health ratings that follow must therefore be regarded no higher than as the least

unsatisfactory index we could devise of the patients' state of health one year after leaving hospital.

The ratings were based on six pieces of information:—

(1) Readmission to hospital.
(2) Patients' assessment of their health before, and at the end of the period covered by this study.
(3) Symptoms complained of at the end of the follow up period.
(4) Mobility.
(5) Amount and nature of contact with the general practitioner.
(6) Time on sickness benefit, or periods of incapacity (excluding readmission) during the twelve months of survey.

The four rating groups were:—

A No further ill health during the year.
B Some slight recurrence or minor new complaint but with complete recovery before the end of the study.
C Recurrence of the old complaint, or the development of a new one, without complete recovery by one year.
D Little or no recovery, or actual deterioration.

These were arrived at by scoring the response to standardised questions put to each patient at the final interview. An outline of the method used is given in Appendix B.

The relationship between age and health rating is shown in Table 9.

TABLE 9. *Health ratings at twelve months by age groups*

Age	*Health Rating*				*Totals*
	A	*B*	*C*	*D*	
15–39	69–53%	44–33%	16–12%	2–1%	131–100%
40–59	72–34%	79–37%	39–18%	22–10%	212–100%
60 & over	23–21%	41–38%	27–25%	18–16%	109–100%
Totals	164–36%	164–36%	82–18%	42–10%	452–100%

A=Complete recovery B=Complete recovery but with some preceding minor illhealth
C=Not fully recovered D=No improvement or worse

There is a decline in health with age, a pattern that obtained in both medical and surgical patients. When original ward categories were compared by age groups, the proportion of surgical (including orthopaedic) patients who had made a good recovery at twelve months was rather higher than the corresponding figure for medical patients—the actual proportions were:—

	AGE		
	15–39	40–59	60 & *over*
Proportion of surgical patients with A and B health ratings .	92·6%	82·7%	64·7%
Proportion of medical patients with A and B health ratings .	75·4%	59·7%	53·5%

It is however important to remember that the proportion of medical ward patients with a long history of chronic disease preceding their admission to hospital was much higher than in the surgical group; nevertheless, when medical and surgical patients, whose previous health was good, were compared, the health ratings of surgical patients as a group at twelve months were still considerably better than among medical patients. To put it another way, a surgical illness is rather more often an isolated and curable episode, a medical illness is more likely to leave the patient with residual disability.

Health and skill

This distinction between surgical and medical patients also held when skill levels were compared. Among men whose previous occupations had been unskilled, 43% of the patients who had been in a medical ward were in the poorest health rating groups compared with only 20% of surgical patients; at the other end of the health rating scale, 27% of the medical non manual and skilled manual workers were in the best health group compared with 55% in the former surgical patients of equivalent skill. Some of this difference between skill groups was due to skilled workers being forced in the past by disability to move into light unskilled jobs but examination of occupational histories suggested that such moves could not account for all the difference observed between the health

ratings of skilled and unskilled men; at least some of it is probably due to the greater liability of the lower social classes to suffer from various chronic diseases such as bronchitis.

Housing

Reference was made under readmissions to the fact that little or no difference was observed between the housing conditions of the various health rating groups. A summary of the data is given below:—

	HEALTH RATING	
	A + B (*the better groups*)	*C + D* (*the worse groups*)
Proportion living in households with 1 or less rooms per person	66%	65%
Proportion with shared household . .	4%	8%
Dry toilet or use of shared W.C. .	34%	29%
No. of patients .	327	125

The higher proportion of shared dwellings among men in poor health is due to their being more often obliged by serious disability to live with relatives or friends. That about one-third of any group of people should not have modern toilet amenities available is of course unsatisfactory but the main point that is relevant to this discussion is the absence of any marked difference between those whose recovery was good and those who were less fortunate; whilst this does not suggest that poor housing has any direct effect on the progress of disease, there can be no doubt that various housing factors such as stairs, toilet facilities, and overcrowding can create difficulties for disabled ex-hospital patients—for example, the hemiplegic who remains housebound because he cannot safely negotiate the rickety stair of antiquated tenement building. These and other housing difficulties will be dealt with under the later heading of problems.

Health and job

During the year of follow up a total of 86 men recorded some change in their occupational history. A man may change his job

for a variety of reasons and we were naturally interested mainly in those which were the outcome of their hospital treated illness. It proved extremely difficult to compute with confidence how many men had had either to modify their previous jobs or move to new ones solely on account of disability, but the best estimate we can give is that 36 men who were at work up to the time of admission to hospital came into one or other of these categories.

Mr. N., age 36, an excavator driver, was admitted to hospital with a severe coronary thrombosis. The manager of the firm visited him in hospital and assured him that not only would he be taken back but that an alternative job would be available. Mr. N. returned to work after three months convalescence and was employed in maintaining the firm's fleet of staff cars.

Mr. G., age 56, who worked on a sulphuric acid plant, was admitted to hospital for a partial gastrectomy. When he returned to work he was employed on the maintenance of sewing machines within the same firm for three months before being transferred back to his old job.

Mr. P., age 63, a warehouse packer, was admitted to hospital for prostatectomy and subsequently developed septicaemia; as a result of this an abscess formed in his shoulder joint and after a number of operations and repeated readmissions Mr. P. was told he could return to light work. His employers were very considerate and agreed that he could work for as many hours each day as he felt fit to do. Over the next six months Mr. P. gradually regained his confidence and his ability to do a full day's work.

As would be expected the number of job changes on grounds of health was substantially higher in men with the lowest health ratings than among men whose recovery had been complete; indeed, in this latter group the few job changes were of a precautionary nature, for example the mild case of coronary disease who was quite well but decided to seek lighter work 'just to be safe.'

The picture was more complicated among men who were unemployed before admission to hospital. It was earlier estimated that in about half of these cases previous disability had been to some extent responsible for their unemployment; a

further spell in hospital had often added to their difficulties. Since our health rating was based, *inter alia*, on periods of incapacity it was to be expected that most of these unemployed men would fall into the two poorest health groups. The employment position one year after discharge of the 48 men who were not working on admission is shown below by health category:—

Health rating at twelve months	*Proportion employed at twelve months*
A Good recovery	13 out of 15=86·7%
B Good recovery	9 out of 13=69·2%
C+D Poor recovery	0 out of 20=Nil

The ranks of these long unemployed men had been swelled by those who for various reasons had given up the jobs they held and had not secured alternative work. Excluding older men who had decided to retire, these additions to the unemployed group were made up of 10 men in whom disability following the hospital-treated illness appeared to be the main cause of unemployment, and 12 men who were out of work for non medical reasons—but we would again emphasize the need for caution in ascribing unemployment to health factors.

Employment position one year after leaving hospital

To round off this section of the report, the factors associated with return to work at the end of the follow-up period were examined. Because retirement complicates the picture after age 65, the analysis is confined to men between the ages of 15 and 65 years.

385 men under age 65 survived the whole year; of these 292 (75·8%) were at work one year after discharge from hospital (temporary absence from work from minor causes and short temporary employment were ignored); 54 (14%) were on sickness benefit; and the remaining 39 (10·1%) were drawing unemployment benefit.

(*a*) *Age and health*

As was shown earlier the proportion of patients who were fully recovered at one year was rather lower in medical cases than in surgical cases at each age. To simplify presentation

this difference has been ignored in Table 10 which shows the relationship between health and employment category.

TABLE 10. *Proportion of men fully recovered at twelve months by age and employment category*

Employment Category	*Proportion of men fully recovered (Health rating A+B)*		
	Age 15–39	*Age* 40–59	*Age* 60–64
Employed . .	$\frac{106}{117} = 91\%$	$\frac{139}{158} = 88\%$	$\frac{16}{17} = 94\%$
Unemployed. .	$\frac{7}{10} = 70\%$	$\frac{10}{21} = 48\%$	$\frac{2}{8} = 25\%$
Unfit for work .	$\frac{0}{4}$	$\frac{2}{33} = 6\%$	$\frac{2}{17} = 12\%$

Nine out of ten employed men were in good health; about half of the unemployed men appeared fit for work but the proportion declined with age; among those on sickness benefit very few had made a good recovery. These, of course, are the trends one would expect but it is interesting to note again that one out of every two unemployed men was disabled.

The effect of age on employment may be summarised by stating that in the employed group 60% of the men were over age 40, whereas among the unemployed and sick, the proportions over 40 were 74% and 93% respectively.

(b) Readmission history

The proportion of men who had been readmitted to hospital was of course substantially higher among men classed as unfit for work at one year than it was among the employed and unemployed categories; these last two groups showed little difference probably because the unemployed, despite their greater proportion of men with incomplete recovery, included so many men with a long history of chronic disability for which no further remedial treatment was possible.

Prediction of employment problems

A central aim of this enquiry was to identify those patients who ran into employment problems during the follow-up period and to see whether such difficulties could be forecast from evidence available at the time of their first interview in hospital—in short we hoped to be able to list those characteristics of hospital patients which could be used to distinguish the vulnerable groups.

Using the three twelve-month categories, employed, unemployed and sick, as measures of outcome, the influence of a number of variables was examined; these were all recorded and classified when the patients were first seen and are therefore free of any 'hindsight' bias. The results are contained in Table II.

TABLE II. *Relationship between various characteristics of the 385 survivors under age 65 when first seen and their employment situation one year after leaving hospital*

Characteristics when first seen	*At Twelve Months*			*Totals*
	Employed	*Unemployed*	*Sick*	
(1) Age 15–39	117–89·3%	10– 7·6%	4– 3·1%	131–100%
40–59	158–74·5%	21– 9·9%	33–15·6%	212–100%
60–64	17–40·5%	8–19·0%	17–40·5%	42–100%
(2) Proportion with poor previous health	42/292 14·4 %	16/39 41·0 %	29/54 53·7 %	
(3) Proportion more than 14 days in hospital	145/292 49·6 %	15/39 38·5 %	33/54 61·1 %	
(4) Proportion of unskilled workers	125/292 42·8 %	31/39 79·5 %	33/54 61·1 %	
(5) Proportion of heavy workers	105/292 36·0 %	20/39 51·3 %	15/54 27·8 %	
(6) Employed on admission	269–83·5%	20– 6·2%	33–10·3%	322–100%
Unemployed on admission	23–36·5%	19–30·2%	21–33·3%	63–100%

The patients least likely to be employed one year after leaving hospital were older, had a history of chronic ill health or disability, were more often unskilled heavy workers, and had no secure job awaiting them on discharge; also, as previously shown, they were more often medical than surgical patients. Duration of stay in hospital was longer in those men who were unfit for work at twelve months but was shorter in the unemployed—probably because, as with readmissions, so many of these men suffered from chronic disabilities not amenable to further treatment. When town and country patients were compared the only consistent difference found was that whereas 46% of the town men age 60–64 were employed at twelve months, the proportion among men of this age from the country was 33%.

One important factor could not be listed in Table 11—the exact pathology of the original disease. Numbers were insufficient for detailed tabulation of the wide variety of disease groups. Nevertheless certain impressions were gained from the data; conditions such as chronic bronchitis, coronary heart disease, recurrent backache, and severe injuries were, when associated with the characteristics listed in Table 11, very liable to be followed by unemployment or unfitness for work one year later.

Such findings are not new. Most clinicians, general practitioners, medical social workers, and employment personnel are aware of the occupational problems presented by older disabled unskilled men who have been on heavy jobs and have a history of intermittent employment. What does need emphasizing is that many of these men can be recognised at an early stage; Table 11 is in fact a rough prediction table which leads us to suggest that, whilst *medical* prognosis is a well established part of clinical care, more attention needs to be given to *social* prognosis when patients leave hospital. To this important point we shall return later.

PROBLEMS

REPEATED and fairly intimate contact with patients over a period of one year brought many problems to light. These

varied so greatly in nature, severity and duration, that classification was at times extremely difficult. Where several problems were present in one patient we tried to identify the root of the difficulty and thus minimise multiple counting. Brief reference has already been made to the patients who died; only the survivors are considered here.

Employment problems

106 patients reported some problem in connection with employment, either difficulty in getting a job, unsuitable employment, or, in the case of the older men, compulsory retirement. By the end of the follow-up period 52 of these problems had been solved either by the finding of a new job or the modification of an old one. The unresolved occupational problems at twelve months were:

Unemployed	23 patients
Employed but job unsuitable . .	22 patients

In addition to these 23 unemployed problems, nine men were unemployed at twelve months from causes that appeared to be unrelated to the hospital illness inasmuch as either they antedated its onset or appeared later for quite extraneous reasons such as redundancy in a particular industry. (Another 7 men were registered as unemployed have not been included because all were expecting to be recalled for further treatment and were not therefore seriously concerned meantime about obtaining jobs). As examples of employment problems which were related to the hospital admission the following cases are typical:

Andrew W., age 49, was a storeman in a textile mill. Four years before admission he began to notice hand tremor and slight blurring of vision; his doctor referred him to the outpatient department where a provisional diagnosis of disseminated sclerosis was made but he was not told of this at the time. He was then a foreman and soon he found it difficult to execute the fine mechanical adjustments required in his job. The employer transferred Mr. W. to the store where he carried on successfully for three years. The symptoms gradually became worse but it was sudden loss of sight in one eye that led to his admission to hospital. After discharge he approached his employers but they did not consider him fit to resume his old job as a storeman and offered no alternative. He had been registered as

a disabled person for three years and when seen at twelve months he was still unemployed despite his own efforts and those of the Ministry of Labour.

James L., age 43, was a farm worker. He was admitted with hypertension and a cerebral thrombosis involving his right arm and leg. He made a good recovery but was left with some weakness of hand and arm. Five weeks after discharge from hospital he returned to his old job despite considerable difficulty in carrying and lifting objects such as pails and tools. When seen at a year he said the work was too heavy and that he was quite exhausted each night; but, because of the shortage of jobs in the area and since his cottage was tied to his work, he told us there was no alternative to struggling along in his present unsuitable work.

All the men who were in unsuitable jobs told the same story —no alternative work could be offered by the employer so they preferred to remain employed under strain until a secure and suitable job prospect came to their notice. In fairness to employers in general it must be said that we came across numerous cases where, at considerable inconvenience to himself, an employer, manager or foreman had provided either a modification of an old job or a new job suited to his disabled employee. Apart from two or three cases where disability appeared to be an excuse rather than a genuine reason for not re-employing a man, the commonest explanation for being unable to fit a disabled employee back into work lay in the smallness of the business; large concerns could usually manage to fit a man in somewhere whereas farmers, merchants or manufacturers with only a handful of employees simply could not afford to do so.

17 of the unemployed men were registered at the employment exchange as disabled persons; of these 5 were so severely handicapped that only sheltered employment could offer much prospect of resettlement. To draw firm conclusions about the merits of registration as a disabled person from such small numbers would be unjustifiable, but the information we obtained permits the comment that in an area where unemployment is relatively high the value of registration under the Disabled Persons Act seemed to be correspondingly less.

Anxiety about health

52 patients expressed considerable anxiety about their health; most were severely disabled men who were very worried about their failure to improve but in nine cases the anxiety was primarily due to uncertainty about the nature of their illness and its prognosis. To some extent such problems are a function of personality but they also depend upon the adequacy or otherwise of medical explanation; we did not ascertain objectively what these patients had been told, or not told, but in a few cases there could hardly be any doubt that misunderstanding had arisen and led to needless anxiety. Anecdotal evidence of this kind can easily be overrated but it was sufficient to suggest a need for systematic study of what and how patients are told about their illness both inside and outside hospital.

At the end of the follow-up period 12 of these 52 patients were no longer worried, the usual explanation being improvement in their health as time went on. The following case illustrates the kind of problem that remained:

A highly skilled laboratory technician, age 49, was admitted to hospital with a third severe coronary thrombosis. His recovery was slow and incomplete; a year after discharge he was still housebound by crippling angina and although his job was still open his disability was so great that he could not contemplate return to work in the foreseeable future. This was a source of constant anxiety and was indeed the main topic of conversation at each interview.

It is difficult to make any constructive suggestions which might help these unfortunate patients. Perhaps the further growth of associations of people with similar handicaps, like the Multiple Sclerosis and other Societies, together with local authority centres for the adult handicapped may go some way towards providing social support for these patients.

Housing problems

21 patients reported a problem connected with housing but 6 of these had been solved by the end of the year. The 15 problems still present when the survey ended were in the main of two kinds; among the elderly especially the problem was either restricted mobility due to tenement stairs or restricted capacity

for self-care in old men living on their own; the second group of problems were associated with sanitary defects and is illustrated by the following case:

N.F., a nightwatchman of 55, had been in hospital with hypertension, an arterio-venous aneurysm, and longstanding chronic bronchitis. When seen at one month he was back at work against his doctor's advice but his main problem was housing. He and his wife lived in two small basement rooms with windows at street level. The walls were damp, there were holes in the floor, and the front windows had to be kept shut to exclude dust from the pavement and to reduce traffic noise when Mr. F. was trying to sleep during the day. The outside lavatory was shared with the family above who dumped their rubbish in front of the only side window that could have been opened. Mr. F. and his wife said they were afraid to complain to the authorities as there was already more than enough unpleasantness with the neighbours; although they had been promised help with rehousing by the hospital nothing had happened. Before the end of the year Mrs. F. had been admitted to hospital for five weeks with pneumonia. Mr. F's parting remark was 'They told me to get better before I started work, but how can I get better in this place and if I don't work how do I live?'

The best answer to some of these unresolved accommodation problems lay in the special cottages and flats being built in increasing numbers for older people. As yet there is a serious shortage of such dwellings but when the supply is adequate arrangements between the hospital and the housing department for early rehousing of suitable patients should reduce the size of this after-care problem.

Problems in personal relationships

11 patients were involved in serious family disharmony and only one of these problems had been settled by the end of the study. In three cases the dispute appeared to be unrelated to the hospital admission. It was well nigh impossible to sort out the facts of these situations and equally difficult to be sure what kind of help was likely to lead to a solution.

Mr. A., age 23, worked in a small family business with his widowed mother and brother-in-law. He was admitted to hospital with vague abdominal pain for which no cause could be found. It later emerged that the mother wanted to make the boy an equal partner with

herself but he felt extremely guilty about this proposal since his sister and brother-in-law had carried the main burden of the business following the father's death. Relationships within the family had seriously deteriorated and the mother was furious with the general practitioner for listening to the boy's anxieties and 'for putting stupid ideas about psychiatrists into his head'. When last seen young Mr. A. was in a state of acute anxiety and no solution was in sight. His need for help seemed near desperate.

Without much deeper exploration of these distressing cases it would be hazardous to suggest what kind of skilled help was indicated or even that further help was called for. If the professional casework service in hospital were up to adequate strength a more complete effort to detect these problems could be made but as things stand at present the almoners' case load is so heavy that systematic cover of all wards is unfortunately impossible. This point will be taken up in the general discussion.

Financial problems

Among the 11 patients with financial worries was the following case:

Mr. K., age 38, a self-employed agricultural contractor, was admitted to hospital with advanced rheumatic heart disease. During the war he suffered great hardship as a prisoner of war and was discharged from the army with 'a bad heart' in 1945. He had been a farm servant and labourer before becoming a regular soldier in 1936. On demobilisation the Ministry of Labour placed him in clerical work but before long, with the aid of a government grant, he branched out on his own in a small poultry farm. While running this business he noticed how often local farmers were unable to find time to attend to various repairs on their land so with the aid of one employee he built up an extensive business which was compatible with his disability. In the midst of considerable capital expenditure and a developing programme of commitment to his customers, Mr. K. took ill and was admitted to hospital. After discharge he was confined to bed for six weeks and thereafter had an extremely worried convalescence while he tried to sort out his financial obligations. Fortunately his reputation was already sufficient to attract help from various sources and when last seen he had overcome his difficulties and become re-established in business —but the future was uncertain because his cardiac condition was liable to breakdown.

By the end of the one year of follow up only two serious financial problems remained unresolved suggesting that this kind of difficulty is more amenable to solution. This must not be taken to mean that no financial worry at all remained when the survey closed; many men who had been living for some time only on social security benefits complained of shortage of money but the adequacy of such benefits was a question beyond the scope of our enquiry.

Other problems

Only brief reference can be made here to a miscellaneous collection of problems encountered at various points in the follow up period. Two single old men living alone were clearly unable to care adequately for themselves, four others were trying to run their homes and look after sick relatives, at least ten old men complained of loneliness and boredom. Multiple problems are illustrated by the case of Mr. S:

Age 67 and a shipyard worker, Mr. S. was admitted to hospital with a perforated appendix and peritonitis. Recovery was very slow and when he returned home his daughter had to give up her part-time job to look after him and her invalid mother. They lived in a new housing estate where rents were relatively high; after some months off work Mr. S. felt he could not afford the rent and other bills so they arranged an exchange to cheaper property in the city centre. He did not feel fit to go back to work and eventually took over management of the home thereby freeing his daughter to take full time work. At the end of the year Mr. S. was reconciled to his retirement, but with debts still unpaid, and the family was living in two small rooms with none of the new house amenities they once enjoyed.

With the help of the Royal Infirmary almoners we endeavoured to ascertain at the end of the study how many of these patients with problems were known to the social service department of the hospital. Out of just over 200 patients in whom we encountered a problem at some point in the twelve months of study, only 30 had been referred to the almoners during that year; a further 33 are known to have been referred since the end of the study. Even with generous allowance for those problems that were ultimately solved by some other means

and for those that might not strictly be regarded as coming within the almoners' province, there can be little doubt that there is a serious discrepancy between the number of patients who should have been referred and the number that actually were.

DISCUSSION

THE outcome of any illness depends upon the interplay of a large number of influences most of which fit into one or other of three main categories—quality of medical care, personal resources of the patient, and the services that society provides to help him. To a varying extent, the study reported here had been concerned with all three areas and we shall therefore discuss the findings and the conclusions they lead to separately and then fit them together in a final summary.

MEDICAL CARE

AT the outset of this survey it was decided to make no attempt to evaluate the technical quality of medical care provided either in hospital or outside it. This would have involved clinical judgement and skills which we did not possess and we have therefore accepted the diagnostic and therapeutic records as they stood. It would, however, be less than just to leave the impression that all was well in the clinical sense; even with generous allowance for human imperfection, we feel bound to report that a small proportion of patients expressed such dissatisfaction with the medical handling of their cases that their complaints could not lightly be dismissed. The one feature common to these cases seemed to be inadequate explanation of what was wrong with them and why certain procedures were necessary; having heard as it were only one side of the story, we found it next to impossible to decide just what was the basis of these misunderstandings. Informal contacts with a few of the general practitioners concerned revealed that they too were sometimes uncertain as to precisely what had transpired in hospital and were thereby handicapped in their conduct of after care.

There was much variation between wards, and between clinicians in the same ward, in the frequency with which discharged patients were asked to attend as outpatients for review of their progress. Sometimes—too often to be ignored—there was confusion as to whether the hospital would send for the patient or the general practitioner was to arrange the appointment. In a few cases the patient received conflicting advice from the hospital and his own doctor; some such differences of opinion are to be expected and may not be of much importance but, when a patient is advised by one doctor to give up his job and by another to do no such thing, the effect may be quite serious. There would seem to be room for closer liaison between specialist and general practitioner on this matter of vocational guidance—pooling of knowledge of the patient's condition and of his social circumstances might reduce the number of these unfortunate cases of opposite advice. More important, however, is the whole question of outpatient review; our data could not be fully analysed in time for this report but preliminary inspection certainly suggested that the system of follow up in use could be the subject of a separate study designed to ascertain how far regular outpatient review is successful in detecting and solving the numerous problems encountered in our own follow up, and to observe the difficulties of communication between hospital and domiciliary doctors.

Rehabilitation

One quarter of the 385 men under 65 who survived the full year of follow up were not back at work when the study ended. 45% of the 385 were off work more than three months. These two facts raise the whole question of rehabilitation facilities in the north east area of Scotland.

Whereas the other three large Scottish cities all have convenient access to one or other kind of rehabilitation centre, Aberdeen has no special unit of this kind. True there is a physical medicine department in the Royal Infirmary where, under a consultant in this field, valuable work has been done despite shortage of space, equipment and staff. A resettlement clinic has also functioned in the Royal Infirmary. The conclusion of those participating in these activities is that further progress is difficult to impossible without a rehabilitation centre

where physical therapy, occupational therapy, and thorough assessment of working capacity can be carried out.

The results of our survey support these conclusions, and confirm which patients could with the greatest profit be referred to such a centre. First there are the older unskilled disabled men who have either given up their previous work or who feel unable to return to the jobs they were doing. Secondly, there are the patients whose recovery time might well be shortened by a period of intensive rehabilitation in a special centre. The groups overlap to some extent but in both the aims are the same —to restore maximum fitness, to assess working capacity, and to help the patients to obtain whatever kind of job is best suited to their particular abilities.

It is not easy to estimate precisely either how many patients need the facilities of a rehabilitation centre or to predict how much actual benefit would accrue. But there seems to be fairly widespread agreement that a well-equipped and staffed rehabilitation unit can promote recovery and resettlement in selected patients provided facilities exist for early ascertainment and planned therapy. The choice of inpatients suitable for rehabilitation presents no great difficulty; our findings point again to the need for after-care supervision of all patients so that those whose employment problems only appear some weeks or months after discharge may be identified and referred to the centre. No doubt the building of a rehabilitation unit would by itself lead to an increased rate of referral but we would like to see a systematic follow up, jointly by hospital and general practitioner, of all patients whose health and occupational history suggest the likelihood of a resettlement problem; if and when a rehabilitation centre becomes available in this area, it would also seem desirable to make patients aware of its aims and methods so that they too can take the initiative when problems arise and before they become intractable.

Personal resources of the patient

One great advantage of a rehabilitation centre is the opportunity it affords of measuring the occupational capacities of those patients for whom new jobs have to be found. Psychology has provided many useful tests for this purpose and trained occupational supervisors can, by direct observation of per-

formance on trial tasks in a rehabilitation workshop, provide valuable evidence as to the kind of work best suited to individual patients. By these means the patient's personal resources can be assessed and later mobilised by those who are responsible for vocational placement. In this kind of careful assessment an important role is played by the social worker who, whether she works inside the hospital or outside it, knows the personal circumstances of the patient and his family. Unfortunately, there is a serious shortage of such social workers so that even if all patients with problems were referred to them the existing service could not cope adequately with the demand. Nevertheless it can be argued that if rehabilitation facilities were available to patients at an *early* stage of their illness some of the more serious problems such as those due to long unemployment might well not arise.

Under this heading of personal resources there seems to be a rich field for further research. We found for example that about three quarters of the men who took up new jobs obtained them either through a relative, friend or press advertisement and that in only one case out of four had the Ministry of Labour been responsible for placing the individual. A more detailed exploration of the difference between these two groups might well throw a good deal of light on the reasons why some disabled ex-patients resettle themselves while others remain unemployed despite the efforts of the statutory employment services. If a prolonged spell of unemployment is itself a handicap to return to work, a period in a rehabilitation centre may be one way of breaking the vicious circle.

The Social Services

Reference has already been made to the fact that only a small proportion of patients with problems had been seen by the hospital almoners. There were several reasons for this; the existence of a problem was either not known to the clinicians concerned or did not become apparent until long after discharge, the patient did not feel he should bring up the problem or he did not know that almoners were available to help. Making good the serious shortage of medical social workers would be only a partial solution because even if adequate cover of all hospital pateints could be provided, two

problems would still remain. The first of these, the appearance of difficulties related to the illness after the patient has left hospital, has already been touched on. The other has to do with the hospital's responsibility for problems that are only remotely or not at all connected with the patient's illness—long standing debt or housing difficulties for example; vague statements about 'psychosomatic' effects are neither very convincing nor helpful in sorting out the role of the hospital in dealing with such cases. We estimated that about 80% of the patients with problems unrelated to their illness were not receiving all the help they needed—the question is not so much who is to help—a wide variety of statutory and voluntary services are available—but rather how are those in need to be brought into touch with those who can help? We would suggest that there is room here for experiment. One scheme might be to attach liaison workers from the local authority to the hospital—either social workers or welfare department staff. A second arrangement would be to attach such social workers to a few general practices where all hospital patients could be screened when they returned to the care of their own doctors. A third plan might be based on the outpatient department of the hospital. In each case the aim would be to discover patients with after-care problems, to distinguish between those that were part and parcel of the illness and those that were not, to decide which patients required intensive case work and which patients needed more material help, and then to allocate them accordingly. Though there is some overlap between medical social workers, health visitors, welfare workers, and others involved in the social services, we believe that closer liaison between them could do a good deal to ensure both a proper distribution of work and a more complete cover of the problems encountered in this study. Provided machinery for evaluation of these experiments is incorporated in them at the beginning, valid comparisons between results would soon become available and might provide the answer to the question posed above.

SUMMARY AND CONCLUSIONS

503 patients in Aberdeen Royal Infirmary were interviewed in hospital and followed up one month, three months and one year after discharge. The composition of the sample was:

252 medical patients	—a 1 in 4 sample of all patients discharged from three medical wards.
193 surgical patients	—a 1 in 8 sample of all patients discharged from two surgical wards.
58 orthopaedic patients	—a 1 in 12 sample of all patients discharged from the orthopaedic ward.

The total sample of 503 patients is therefore intentionally stratified in that it contained relatively more medical cases than would be found in a straight random sample of hospital patients. Comparison with all the patients discharged from the selected wards over the period of study showed that the sample included rather more longer stay patients, a bias caused by the difficulty in contacting patients admitted for only a few days.

At the hospital interview and again in the patient's homes, information was obtained under five main headings:

(1) Past and present health
(2) Domestic circumstances
(3) Income and use of social services
(4) Employment
(5) Personal problems

Capacity for movement, employment status, and a health score calculated at twelve months, were used to measure the progress of the survivors. One month after leaving hospital the majority of the patients were neither back at work nor recovered sufficiently to be sure if and when they would be able to do so. But, both at one month and three months after leaving hospital, a marked difference in recovery and return to work was noted between patients who had a job waiting for them and those who

had not; this difference was due largely to the poorer health and employment record of the men who were not employed before admission.

A more detailed analysis of the data obtained one year after discharge confirmed and amplified these findings. Of the 503 men originally seen 452 survived the full year and of these one in every four had been readmitted to hospital on one or more occasions, the rate of readmission being higher in medical patients than in surgical or orthopaedic cases. Whether a patient was employed, registered as unemployed, or drawing sickness benefit at twelve months, depended on the interplay of a number of factors such as age, previous health, ward category, disease, occupational skill and heaviness of work, previous employment record, whether he came from the city or the country, and also on the willingness and ability of his employer to provide suitable work. It is therefore suggested that more attention could be paid at an earlier stage to the potential employment difficulties of certain patients and that by a combination of medical and occupational prognoses the most vulnerable patients could be given occupational guidance before the problem becomes irremediable.

Numerous other problems were encountered throughout the one year of observation and these, together with employment difficulties, seem to call for more systematic arrangements for referral of patients to the various social services. At present too many of these problems are either missed in hospital or do not become apparent until some weeks or even months after discharge. Some suggestions are made for improving the detection and solution of untreated problems by linking together the welfare agencies both inside and outside the hospital.

The major conclusion reached is that a full scale rehabilitation unit, to serve the north east of Scotland, would be the development most likely to improve rate of return to fitness and employment among hospital patients. Not only could such a unit accelerate recovery, it would also provide much needed facilities for combined medical, occupational and social assessment both of inpatients and those outpatients who run into difficulties. Related to this last point is the need for closer examination of the machinery for review and after care of

discharged patients; this might well be incorporated in a wider study of the use of outpatient services in the area.

ACKNOWLEDGEMENTS

WITHOUT the assistance of many people in the hospital service and in the community this study would have been impossible. To all those who so willingly co-operated with us, and especially to the patients, we extend sincere thanks. We are indebted to the Ministry of Labour for making the services of Murdo McKenzie available for two years, to the Nuffield Provincial Hospitals Trust for financing the survey and to Professor Maurice Backett and Dr. John Mann for their helpful criticism. Finally we are grateful to Miss Margaret Birnie for her patient and painstaking part in the analysis, and to Mrs. Mary Allan for much clerical help.

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APPENDIX A

Nature of disease in relation to age of patient for total admissions and sample interviewed coded by international classification

Disease classification	International statistical classification of diseases and injuries		Aberdeen Royal Infirmary, September, 1957–August, 1958							
			Total admissions Medical, Surgical and Orthopaedic wards				Sample of patients from wards 1, 2, 4, 5, 7, 8, 10 and 14			
	Intermediate list numbers	Detailed list numbers	Age			Total	Age			Total
			15–39	40–59	60 and over		15–39	40–59	60 and over	
INJURIES—BONE AND JOINTS										
Head Injury	AN.138, AN.143	N.800–4, N.850–6	92	31	9	132	3	3	2	8
Other injuries and accidents	AN.141–2, AN.144–6	N.830–48, N.860–929	124	101	49	274	1	2	0	3
Internal derangement of knee	(detailed list 734)	734	35	10	3	48	4	3	0	7
Fractures, upper and lower limbs	AN.140	N.810–29	115	81	65	261	8	9	2	19
Acute backs and prolapsed intravertebral discs	AN.139 (detailed list 735)	735, N.805–9	51	28	81	81	2	10	1	13
Infective disorders of bone	A.4, A.124	012–3, 730	21	8	1	30	1	0	2	3
Other disorders of bone	A.125, A.126 (Bar detailed list 700–716 and 734–5)	731–3, 736–49	16	19	34	69	7	4	5	16
CARDIOVASCULAR SYSTEM										
Rheumatic heart disease	A.80	410–6.	32	35	34	101	4	4	1	9
Arteriosclerotic heart disease	A.81	420–2.	10	83	100	193	2	22	21	45
Hypertension	A.83, 84	440–7.	5	32	17	54	1	10	2	13
Diseases of arteries	A.85	450–6.	6	39	24	69	0	2	1	3
Congenital disorders of circulatory system	A.128.	754	8	0	0	8	1	1	0	2
Varicose veins	(Detailed list 460)	460	4	31	23	58	1	0	0	1
Other circulatory diseases	A.82, A.86 (Bar detailed list 460–461)	430–4, 462–8	0	16	19	35	0	5	0	5
GASTRO-INTESTINAL SYSTEM										
Peptic ulcer	A.99, A.100 (Detailed list 542)	540–2.	169	271	154	594	15	24	11	50
Appendicitis	A.102.	550–3.	210	86	35	331	18	9	1	28
Carcinoma G.I. system	A.45–8	150–8.	18	41	134	193	1	8	7	16
Hernia and obstruction	A.103.	560–1, 570	54	117	71	242	7	12	7	26
Haemorrhoids anal fissure and abscess	(Detailed list 461, 574–5)	461, 574	59	56	18	133	2	7	0	9
Other G.I. disorders	A.3, A.98, A.101, A.105–7 (Bar detailed list 542, 574–5)	011, 530–5, 543, 536–9, 544–5, 573, 576–80, 582–3, 586–7	60	67	82	209	4	7	4	15
RESPIRATORY SYSTEM										
Acute respiratory infection	A.87–91	470–5, 480–3, 490–3	21	23	13	57	3	6	4	13
Bronchitis	A.92–3	500–2.	8	40	36	84	0	13	9	22
Carcinoma lung and bronchus	A.50	162–3.	6	16	29	51	0	3	2	5
Pulmonary tuberculosis	A.1 (Detailed list 006 nil)	001–8.	3	8	3	14	0	1	1	2
Other respiratory disorders	A.94–7 (Detailed list 241)	510	7	34	26	67	5	0	3	8
CENTRAL NERVOUS SYSTEM										
Vascular lesions of C.N.S.	A.70	330–4.	4	32	36	72	1	8	8	17
Carcinoma of C.N.S.	(Detailed list 193)	193	17	4	0	21	1	3	1	5
Other C.N.S. disorders	A.2, A.72, A.73, A.78, A.127	010, 341–5, 350–69, 380–4, 386, 388–90, 394–8, 751	19	46	22	87	3	5	2	10
GENITO-URINARY SYSTEM										
Prostatic hyperplasia and stricture (retention)	A.112 (Detailed list 608)	608, 610	10	24	176	210	0	1	12	13
Carcinoma G.U. system	A.54 (Detailed list 178–181)	177–81	0	41	31	72	0	2	1	3
Renal stone and colic	A.111.	602, 604	25	59	17	101	5	7	3	15
Other G.U. disorders	A.108–110 (Detailed list 016) A.114 (Bar detailed list 608)	590–4, 600–3, 605–7, 609, 611–7, 622–37	43	57	73	173	4	6	2	12
OTHER CONDITIONS										
N.Y.D.	A.137.	780–93	28	38	35	101	6	9	1	16
Haemopoietic system	A.58, A.59 (Detailed list 290–9)	200–5, 290–9	17	16	34	67	1	3	1	5
Suicide	(Detailed list E.970–9)	E.970–9	11	7	3	21	1	2	2	5
Other carcinoma	A.44, A.49, A.51, A.55–7, A.60 (Bar detailed list 178–81, 193)	140–8, 155–61, 164–5, 170, 192–5, 198–9	11	18	6	35	4	4	2	10
Diabetes	A.63	260	65	63	71	199	8	9	6	23
Disorders of the skin	(Detailed list 700–716)	700–716	14	18	16	48	4	6	1	11
Other miscellaneous conditions	A.5–43, A.61–2, A.64–9, A.71, A.74–7, A.79, A.121–3, A.129–30, A.136, AN.147–150 (Bar detailed list 016, 241 and 290–9)	014–5, 017–138, 240, 242–5, 250–89, 300–25, 340, 370–93, 400–2, 690–8, 720–7, 750–9, 760–1, 794, N.930–6, N.940–9, N.950–9, N.960–99	107	101	44	252	5	8	4	17
			1505	1797	1545	4847	133	238	132	503

The above classification is based on the intermediate international classification of 150 causes of morbidity and mortality and the 'N' code alternative classification of accidents, poisonings and violence, with minor additions from the detailed list to simplify the identification of specific or related conditions during the analysis.

APPENDIX 'B'

HEALTH RATING

The primary purpose of this rating was to provide a rapid method of identifying comparative health groups at the end of the study based not upon a single criterion of health but on the sum total of information available. In this way it was hoped to reduce the subjective element inevitable in such assessments, and to arrive at an abstract measurement of health which could be handled numerically.

There are, of course, various pitfalls in any arbitrary method of division based on a number of related criteria. It is possible to score (albeit unintentionally) the same item under different headings and so bias the ratings of people in these categories; however, every attempt has been made to avoid such mistakes. The criteria used were:

(1) Readmissions
(2) Comparisons of health
(3) Symptoms at 12 months
(4) Limitations on mobility at 12 months
(5) Contact with general practitioner
(6) Periods of sickness benefit or incapacity

1. READMISSION	*Score*
Not in hospital	0
Readmitted because of:	
Complication of initial treatment, 2nd stage operation or reassessment	1
Different complaint	2
Original complaint	3
More than one admission excluding re-assessment	4

2. COMPARISON OF HEALTH, before admission and at 12 months	
Much better	0
Better	1
Same, Don't know	2
Worse	3
Much worse	4

3. SYMPTOMS	*Score*
No symptoms	0
Symptoms: related to original complaint,	
Minor	2
Major	4
related to different complaint,	
Minor	1
Major	3

4. MOBILITY	
Unlimited	0
Mobile	1
Restricted	2
House-bound	3
Bed-fast	4

5. AMOUNT OF, AND REASONS FOR, CONTACT WITH PRACTITIONER	
None, since signed off sickness benefit	0
Less than 3 separate episodes involving a new complaint. Any number for routine examination or maintenance therapy of original complaint.	1
3 or more separate episodes with a new complaint or any recurrence of original complaint.	2

6. COMPARISON OF HEALTH, 5 years before admission and at 12 months	
Much better	0
Better	1
Same, Don't know	2
Worse	3
Much worse.	4

7. PERIODS OF SICKNESS BENEFIT OR INCAPACITY	
Nil or not off work	0
In hospital	1
Sickness and incapacity for:	
Less than 21 days	2
More than 21 days	3
Two or more separate periods in total exceeding 21 days, or never off sickness benefit	4

RATING BY RESPONSE:

A 0–6; B 7–12; C 13–17; D 18–26

A. No further ill-health during the twelve months.
B. Some slight recurrence or minor new complaint, but with complete recovery before the end of the study.
C. A recurrence or the appearance of a new complaint without complete recovery before the end of the study.
D. Little or no recovery, or deterioration during the twelve months.

The ranges of the individual ratings were worked out before any of the cases were analysed, by scoring hypothetical examples; the upper limit of each rating being determined by the highest score compatible with the appropriate definition.

The proportion of patients by age and ward within each rating is shown in Table B.1.

TABLE B.1. *Health rating at 12 months by age and ward*

Health Rating	*A*	*B*	*C*	*D*	*Total*
All medical patients					
Age: 15–39	17 36·7%	19 38·7%	11 22·4%	1 2.0%	48 100%
40–59	25 23·3%	39 36·4%	27 25·2%	16 14·9%	107 100%
60 & over	6 10·3%	25 43·1%	14 24·1%	13 22·4%	58 100%
			52 24·4%	30 14·1%	
Total	48 22·5%	83 39·0%	82	38·5%	213 100%
All surgical and orthopaedic patients					
Age: 15–39	52 62·6%	25 30·0%	5 6%	1 1·2%	83 100%
40–59	47 44·7%	40 38%	12 11·4%	6 5·9%	105 100%
60 & over	17 33·3%	16 31·4%	13 25·5%	5 9·8%	51 100%
			30 12·6%	12 5%	
Total	116 48·5%	81 33·9%	42	17·6%	239 100%
All patients					
Age: 15–39	69 52·6%	44 33·5%	16 12·2%	2 1·5%	131 100%
40–59	72 34%	79 37·2%	39 18·4%	22 10·4%	212 100%
60 & over	23 21·2%	41 37·6%	27 24·7%	18 16·5%	109 100%
			82 18·1%	42 9·3%	
Total	164 36·2%	164 36·2%	124	27·4%	452 100%

Nearly three-quarters of the surviving patients obtained scores placing them in the better health ratings (A and B). The proportions of patients from both surgical and orthopaedic wards within each health grade were very similar and it appeared legitimate to combine these figures. However, there was a marked difference between medical and surgical patients in this respect; in fact, there were twice as many surgical as opposed to medical patients in the best health rating, with exactly the opposite finding in the combined poorer health ratings. When allowance was made for this bias, the effect of age was found to be similar in both groups of patients.

Because of these differences, a distinction in the text is made between medical and surgical patients, and the tabulations are presented in three age groups (15–39, 40–59, 60 and over) and by three health ratings (Group A, Group B, and Groups C and D combined).