

## The Scottish Survey of Old Long-Stay In-patients

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A total of 2605 old long-stay patients, defined as those admitted to hospital before the age of 65 years and in hospital more than six years, were identified in psychiatric hospitals serving 83% of the Scottish population. The bed occupancy was 59 per 100 000 of the general population, with a range among hospitals of 19–123 per 100 000. Of all patients, 64% were schizophrenic and 15% had organic brain disease; most patients were male, single and over 60 years of age; 41% had been in hospital more than 30 years; 61% had either florid psychotic symptoms or symptoms of a deficit state in marked or severe degree, and the rehabilitation potential for 70% was low. An increasing prevalence of deficit symptoms in schizophrenics was associated with increasing length of stay in hospital; the difference was most marked between those admitted before and after 1953.

In recent years reviews in Scotland of patients with long-standing psychiatric illness have examined the 'new long-stay' (McCreadie *et al*, 1983, 1985b; McCreadie & McCannell, 1989), chronic day patients (McCreadie *et al*, 1984, 1988) and the adequacy of rehabilitation and after-care services (McCreadie *et al*, 1985a). The present study extends the reviews by examining the 'old long-stay', and describes in detail their social, demographic and clinical characteristics. There have been one or two isolated studies of long-stay patients in individual hospitals (e.g. Owens & Johnstone, 1980; Curson *et al*, 1988) and a study of the rehabilitation potential of patients in Glasgow hospitals (Livingston & Bryson, 1989), but there has been no recent comprehensive national review. The survey is opportune in view of increasing pressure to close at least some mental hospitals in England, and to care for such patients in the 'community'. These plans have gained momentum by the publication and probable implementation of the Griffiths report (Griffiths, 1988).

### Method

All psychiatric hospitals in Scotland were invited to participate. Eighteen hospitals with a combined catchment population of 4.2 million, 83% of the total Scottish population (General Register Office, 1981), did so. The hospitals serve a wide range of urban, rural and mixed catchment areas (see Appendix). Each hospital identified on 1 September 1988 all old long-stay patients within that hospital. Old long-stay patients were defined as those who were admitted before the age of 65 years, and had been in hospital on the census date for more than six years. The following demographic and social information was recorded on all patients: age, sex, marital status, length of current admission and number of previous admissions. The principal diagnosis, that is, the illness primarily responsible for the patient's continued stay in hospital, was

recorded using ICD-9 (World Health Organization, 1978).

Within each hospital every fifth patient on an alphabetical list was examined in three ways. Firstly, mental state was assessed by psychiatrists who knew the patient, using the Krawiecka (Manchester) scale for chronic psychosis (Krawiecka *et al*, 1977); this assesses nine symptoms: depression, anxiety, flat and inappropriate affect, retardation, delusions, hallucinations, incoherence and poverty of speech. Each symptom is rated on a five-point scale, a score of 3 or 4 indicating that it is present in marked or severe degree. In cases where the interview proved difficult, failure to elicit a symptom resulted in that symptom being scored as not present. Secondly, using the Morningside Rehabilitation Status Scale (MRSS; Affleck & McGuire, 1984), each patient's rehabilitation status was measured by professional staff who knew the patient, usually nurses. This scale yields a total score, but also comprises four subscales which indicate levels of dependency, inactivity, isolation and current symptoms. A higher score indicates a greater degree of disability. Thirdly, the rehabilitation team in each hospital indicated where each patient would be best accommodated, on the assumption that all facilities could be made immediately available in that hospital's catchment area.

### Results

The census identified 2605 patients, which with a catchment population of 4.2 million indicates a bed occupancy of 59 per 100 000 of the general population. However, the range among hospitals was great, 19–123 per 100 000. There was a trend, not statistically significant, whereby the number of old long-stay in each hospital correlated with the number of new long-stay (Spearman's  $r = +0.59$ ) and the number of chronic day patients (Spearman's  $r = +0.47$ ). There was no correlation between numbers of old long-stay and adequacy of rehabilitation services (Spearman's  $r = -0.09$ ).

The majority of patients were male (57%), single (75%), and over 60 years of age (70%) (Table 1). Forty-one per cent had been in hospital 30 years or more and 1% ( $n = 30$ ) in hospital 60 years or more. For 54% their current

**Table 1**  
Demographic and hospital data of old long-stay patients  
(*n* = 2605)

Variable	%
<b>Sex</b>	
male	57
female	43
<b>Age: years</b>	
<20	0
20-39	4
40-59	26
60-79	58
80+	12
<b>Marital status</b>	
single	75
married	7
widowed	9
divorced/separated	9
<b>Length of current admission: years</b>	
6-14	29
15-29	30
30-49	33
50-59	7
60+	1
<b>No. of previous admissions</b>	
0	54
1-2	29
3-5	10
>5	7

**Table 2**  
Mental state examination (based on the Krawiecka scale)  
of sample population (*n* = 527) of old long-stay patients

Symptom <sup>1</sup>	%
<b>Florid psychotic symptoms</b>	
incongruous affect	20
delusions	26
hallucinations	23
incoherence	19
<b>Symptoms of a deficit state</b>	
flattened affect	26
poverty of speech	24
<b>Neurotic symptoms</b>	
depression	5
anxiety	8
retardation	12

1. A symptom was recorded as present if rated as 'marked' or 'severe' on the Krawiecka scale.

admission was the first to a psychiatric hospital. Schizophrenia (ICD 295, 297) was the most common diagnosis, 64%, followed by organic brain disease (mainly ICD 290-294, 345), 15%; mental handicap (ICD 317-319), 10%; manic-depressive psychosis (ICD 296), 7%; and other, 4%.

In the sample population of 527 patients, 5% had a total score on the MRSS between 0 and 8, indicating a high level of functioning; 25% scored between 9 and 16, a moderate level; and 70% scored 17-28, a low level of functioning.

**Table 3**  
Symptoms of a deficit state and length of stay in  
schizophrenics

Length of stay: years	No. of patients	% of patients showing symptoms of a deficit state <sup>1</sup>
6-10	30	30
11-15	37	38
16-20	36	33
21-25	33	36
26-30	30	27
31-35	37	30
36-40	45	47
41-45	42	48
46-50	24	71
51-55	13	54
56-60	8	63
61-65	3	33

1. A symptom was recorded as present if rated as 'marked' or 'severe' on the Krawiecka Scale.

On the Krawiecka scale symptoms were grouped into florid psychotic symptoms, symptoms of a deficit state, and neurotic symptoms (Table 2). Each of the four florid psychotic symptoms was present in marked or severe degree in 19-26% of the patients, symptoms of deficit in 24-26%, and neurotic symptoms in 5-12%. Fifty per cent of the patients had at least one florid psychotic symptom in marked or severe degree, 35% at least one symptom of deficit, 24% had both florid psychotic and deficit symptoms, and 18% had at least one neurotic symptom. Only 39% had neither florid psychotic nor deficit symptoms.

In the opinion of the rehabilitation teams 68% of patients in the sample population (*n* = 527) needed to remain in hospital, 22% required staffed hostel accommodation, 4% a group home, and 4% sheltered lodgings. One per cent could live independently on their own, and 1% required other forms of accommodation.

Schizophrenics comprised the largest diagnostic group. Fifty-nine per cent were male, 71% were over 60 years of age and 49% had been in hospital for 30 years or more. As assessed by the Krawiecka scale 57% had at least one florid psychotic symptom in marked or severe degree, 41% at least one symptom of deficit and 17% at least one neurotic symptom; only 32% showed neither florid psychotic nor deficit symptoms. Sixty-eight per cent required continuing in-patient care. As assessed by the MRSS, 71% were at a low level of functioning (total score between 17 and 28). An increasing frequency of symptoms of deficit in marked or severe degree was associated with increasing length of stay (Table 3;  $\chi^2$  test,  $P < 0.01$ ). No such association was found with florid psychotic or neurotic symptoms.

#### Between-group comparisons

Because of the large sample numbers only differences statistically significant at the 0.1% level are described (full details can be obtained from RGMCC).

Table 4  
Characteristics of patients appropriately and inappropriately placed in hospital

	Appropriately placed patients: % (n = 357)	Inappropriately placed patients: % (n = 170)
Age: years		
< 20	0	0
20-39	1	3
40-59	19	35
60-79	63	57
80+	17	5
Length of current admission: years		
6-14	25	29
15-29	26	41
30-49	38	26
50-59	9	4
60+	2	0
Symptoms <sup>1</sup>		
florid psychotic symptoms	61	27
deficit symptoms	45	16
neurotic symptoms	23	9
Level of functioning <sup>2</sup>		
high	0	14
moderate	14	49
low	86	37

1. At least one symptom as assessed by the Krawiecka scale. A symptom was recorded as present if rated as marked or severe.  
2. As assessed by the Morningside Rehabilitation Status Scale.

Two groups of hospitals were compared: those where the number of old long-stay patients relative to the catchment population was more than one standard deviation above ( $n=4$ ) or below ( $n=5$ ) the mean ('high' and 'low' occupancy hospitals respectively). Patients in the former 'high' occupancy hospitals had been in hospital longer and their current admission was more often their first, but fewer had neurotic symptoms ( $\chi^2$  tests). There was no difference between the two groups of hospitals in numbers requiring continued in-patient care.

The seven urban and six rural hospitals had similar proportions of patients (70 v. 72 per 100 000 of the general population). However, in-patients in the rural hospitals were older, had been in hospital longer, more often had a diagnosis of mental handicap, less often had a diagnosis of organic brain disease, and more often showed marked or severe poverty of speech ( $\chi^2$  tests). On the MRSS scales rural patients were more isolated ( $t$ -test).

Patients who in the opinion of staff needed to remain as in-patients were compared with those who could be discharged if other accommodation was available. The former were older, had been in hospital longer, showed more florid psychotic, deficit and neurotic symptoms ( $\chi^2$  tests) and were functioning at a lower level (Table 4). On the MRSS subscales they were more dependent, less active, more isolated and showed more symptoms ( $t$ -tests).

Patients whose current admission to hospital was their first, when compared with others, were older, more often single and had been in hospital longer ( $\chi^2$  tests). There

were no significant differences between these two groups on the MRSS and Krawiecka scales.

## Discussion

The present study examined patients in hospitals serving 83% of the Scottish population. We have no reason to believe that the small number of hospitals which did not participate had patients substantially different from those we examined.

Some comment is necessary on the methods of assessment. In such a large-scale national study it was not possible to assess the inter-rater reliability of the two measures, the Krawiecka scale and the MRSS. However, according to the authors of the first scale (Krawiecka *et al*, 1977), the scales' "brevity, simplicity in administration and sensitivity to change make them an ideal instrument to use where large chronic psychotic populations have to be screened with a certain amount of rapidity". An inter-rater reliability study of the MRSS (McCreadie *et al*, 1987) found that this scale can be used successfully by a rater with little previous knowledge of the patient.

There is no generally accepted definition of the term 'old long-stay' but as our previous reviews of new long-stay patients (McCreadie *et al*, 1983, 1985b; McCreadie & McCannell, 1989) defined the latter as resident more than one but less than six years, then automatically old long-stay were those resident more than six years. By deliberately choosing to examine only those admitted under 65 years of age we excluded another large but separate group, the elderly demented. Also excluded is a small group, namely patients with functional illness admitted over 65 years of age; this group should perhaps be researched in its own right.

When the present finding of 59 places per 100 000 of the general population for old long-stay patients is combined with a previous finding of 20 places for the new long-stay (McCreadie *et al*, 1983), it appears that Scottish hospitals provide overall 79 places per 100 000 for long-stay patients. It has been suggested (Wing, 1986) that the number of occupied beds per 100 000 of the population required in 1991 for long-stay patients aged under 65 years with mainly functional mental illness and those aged over 65 years with functional mental illness should be 53. If long-stay patients with mental handicap in Scottish psychiatric hospitals are excluded, places provided fall to 73. There is still clearly an 'over-provision' of beds in Scotland if Wing's suggestion is to be the norm. Scottish rehabilitation teams believe, however, that 38% of new long-stay (McCreadie *et al*, 1983) and 32% of old long-stay patients would not need

to be in hospital if facilities, especially staffed hostels, could be provided elsewhere. If such patients were found alternative accommodation the bed numbers would fall to 53, exactly what Wing recommends. However, a review of rehabilitation and after-care services in the catchment areas of Scottish hospitals (McCreadie *et al*, 1985a) revealed serious deficiencies in these services, especially those provided by local authorities. There is little evidence that local authorities have done much in the intervening years to improve services.

Within the national figures there was very considerable between-hospital variation – the hospital with the most old long-stay patients relative to the catchment population had more than six times as many patients as the hospital with the fewest. Part of this difference is probably due to very local factors. For example, one high-occupancy hospital formerly had large numbers of ‘amenity beds’ and attracted patients from throughout the United Kingdom and further afield. Another high-occupancy hospital’s catchment population was substantially reduced recently by a redrawing of its catchment-area boundaries; the result was an increase in the catchment population of the adjacent hospital, in the present census a ‘low-occupancy’ hospital. The localisation of these two high-occupancy hospitals’ catchment areas may have made it more difficult to discharge patients not originally admitted from the more restricted areas. This is supported by the finding that high-occupancy hospitals had more patients who had been in hospital for a very long period. It may also be true, however, that rehabilitation teams in high-occupancy hospitals were more reluctant than those in low-occupancy hospitals to discharge patients admitted many years previously. This possibility may also go some way to explain the lack of correlation between number of old long-stay patients and adequacy of rehabilitation facilities.

Although the number of old long-stay patients in hospitals serving urban and rural catchment areas was similar, the latter had more mentally handicapped patients. This is no doubt due to the fact that only in recent years have specific mentally handicapped facilities become available in some Scottish rural areas. There were also fewer patients with organic brain disease in rural hospitals. This is harder to explain, as inspection of the data did not reveal any single diagnostic category within the organic brain disease group that was over-represented among the urban patients.

The typical old long-stay patient in Scottish psychiatric hospitals is male, single, elderly and schizophrenic. He has spent more than 15 years in

hospital, and thus the hospital is his home. The MRSS assessment finds him to be functioning at a poor level in terms of rehabilitation potential, and the Krawiecka rating suggests he is showing florid psychotic or deficit symptoms or both in marked or severe form. When the schizophrenic group is considered separately the prevalence of delusions (32%) and hallucinations (31%) is broadly similar to that found in a schizophrenic population recently studied in long-stay wards of one English psychiatric hospital (Curson *et al*, 1988) – there, 46% showed delusions and 32% auditory hallucinations. Increasing length of hospital stay in schizophrenics was associated with an increased frequency of marked or severe symptoms of deficit. There are at least three possible reasons for this. Firstly, the symptoms of deficit may be secondary to an increasing length of stay, the ‘institutionalism’ hypothesis (Wing & Brown, 1970); secondly, severe symptoms of deficit, resistant to treatment, might persist and prevent patients from being discharged. In this context it is noteworthy that the increased prevalence of symptoms of deficit was most obvious when those admitted before 1953 (in hospital more than 35 years) were compared with those admitted after that date. Is it possible that the introduction of phenothiazines at that time has exerted a protective effect? Thirdly, the association between symptoms of deficit and length of stay may have been confounded by age. Perhaps advanced age in itself could be associated with flat affect and poverty of speech.

Although about a third of old long-stay could be discharged if further facilities were available, the remaining two-thirds in the opinion of the rehabilitation teams should stay in hospital. Eighty per cent of this group were over 60 years of age, 49% had been in hospital longer than 30 years, 86% scored more than 17 on the MRSS, 61% showed florid psychotic symptoms and 45% symptoms of deficit. These findings illustrate both the degree to which the hospital is the patient’s home, and the continuing severity of the patient’s mental illness. The present study of course is cross-sectional. Whether the judgement of the rehabilitation teams is correct could only be decided by a longitudinal study. Those deemed not suitable for discharge would be randomly allocated either to discharge or to continuing in-patient care; the two groups would then be followed over a given period and assessed through clinical and social measures. In the meantime, there are no current plans to close any psychiatric hospitals in Scotland, although some health boards have suggested targets for numbers of patients to be discharged without assessment of either individual patients or of community facilities.



In England, closures have already taken place, will continue and are the subject of study (e.g. Carson *et al*, 1989). The 'community' must be made aware of the age structure and morbidity of the old long-stay population. Discharge of such patients from hospital may be a disservice to some who have spent most of their adult life in that institution, and a disaster for others where the community psychiatric services have not developed the wide range of supports necessary.

#### Acknowledgements

This study was carried out under the auspices of the Rehabilitation Group, Scottish Division, Royal College of Psychiatrists. We thank patients and nursing staff for their co-operation. We also thank the hospital co-ordinators: Dr N. Ali, Dr D. Ball, Dr J. K. Binns, Dr F. Corrigan, Dr G. Crockett, Dr P. Dick, Dr A. M. Drayson, Dr J. Dyer, Dr S. Gilfillan, Dr D. Jones, Dr P. Kershaw, Mrs M. McCormick, Dr J. Murphy, Dr K. N. Murray, Dr H. Small, Dr S. Sutherland, Dr P. Trigwell, Dr R. Vaughan, Dr A. O. A. Wilson and Dr A. J. Yellowlees.

#### Appendix

Hospital	Type of catchment area (urban, rural or mixed)	Population of catchment area
Ailsa Hospital, Ayr	Mixed	374 752
Argyll & Bute Hospital, Lochgilphead	Rural	120 000
Bangour Village Hospital, Broxburn	Mixed	141 684
Craig Dunain Hospital, Inverness	Rural	232 000
Crichton Royal Hospital, Dumfries	Rural	146 000
Dingleton Hospital, Melrose	Rural	104 000
Dykebar Hospital, Paisley	Mixed	270 000
Gartloch Hospital, Glasgow	Urban	193 000
Gartnavel Royal Hospital, Glasgow	Urban	210 000
Hartwood Hospital, Shotts	Mixed	563 000
Leverndale Hospital, Glasgow	Urban	311 000
Murray Royal Hospital, Perth	Rural	123 607
Ravenscraig Hospital, Greenock	Urban	100 000
Royal Dundee Liff Hospital, Dundee	Urban	180 000
Royal Edinburgh Hospital, Edinburgh	Urban	438 721

Stratheden Hospital, Cupar	Mixed	350 000
Sunnyside Royal Hospital, Montrose	Rural	105 000
Woodilee Hospital, Glasgow	Urban	247 000
Total		4 211 000

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