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## **The TAPS Project. 6: New Long-Stay Psychiatric Patients and Social Deprivation**

**Graham Thornicroft, Olga Margolius and David Jones**

### **Abstract**

The clinical and social characteristics of new long-stay (NLS) patients at Friern and Claybury Hospitals are described, together with their accumulation rates within health districts in north East London, and the associations between accumulation rates and social deprivation. There is a fourfold variation between local districts in annual accumulation rates of NLS patients (between 2.5 and 11 per 100 000 population); 0.55 of this variation is accounted for by the Jarman scores of social deprivation, and 0.81 by local rates of unemployment. Other recent British studies support this finding that measures of social deprivation can statistically explain a large proportion of the variation in treated rates of psychiatric morbidity, and may be useful in predicting needs for psychiatric services.

### **Introduction**

The Team for the Assessment of Psychiatric Services (TAPS) is conducting a follow-up study of over 1100 long-term patients discharged from Friern and Claybury hospitals. Early findings have been reported on patients' social networks, the comparative costs of hospital and community care, the clinical and social outcomes for long-term patients one year after discharge from hospital, and the characteristics of psychogeriatric patients (TAPS, 1989; Leff et al, 1990; Knapp et al, 1990; Anderson, 1990). This paper will address four related issues: the definitions of the new long-stay (NLS) group of psychiatric patients (Mann & Cree, 1976) at Friern and Claybury hospitals, their social and clinical characteristics, the accumulation rates of NLS patients within the local health districts, and the statistical associations between accumulation rates and social deprivation.

### **Method**

The TAPS study includes patients admitted to Friern and Claybury hospitals before August 1984, as the old long stay (OLS) group, and the design of this study has been reported previously (TAPS, 1989). In addition, since August 1985 a number of patients have been admitted to these two hospitals and stayed for over one year; this is the new long stay (NLS) group (Jones & Margolius, 1989). The total number of NLS patients in each of the first four study years for the districts reported is 234. The catchment area of Friern Hospital comprises Hampstead, Islington, Haringey, and Bloomsbury District Health Authorities, while Claybury serves Waltham Forest, Redbridge, West Essex, and Enfield. For Enfield, the data available were incomplete, and they are therefore excluded from this study. The identity of the NLS patients was established from weekly surveys of in-patients at both Friern and Claybury Hospitals, and additional patients were identified at the other hospitals within the North East Thames Regional Health Authority (NETRHA) in which NLS patients from these districts had accumulated. Population data were made available from NETRHA based on Office of Population Censuses and Surveys population projections from census data. Data were collected by research assistants trained in the reliable use of the range of TAPS assessment instruments, including the Present State Examination (PSE; Wing et al, 1974), and the Social Behaviour Schedule (Sturt & Wykes, 1986).

## Results

The sociodemographic and clinical characteristics of the new long-stay (NLS) and the old long-stay (OLS) patients at Friern and Claybury Hospitals are shown in Table 1. The NLS patients are considerably younger than the OLS, the sex ratio is the same, but the NLS have had more, and shorter, admissions. On average they have been in hospital for 2 ½ years, the most recent admission is the longest, and the total time in hospital is about four years. In contrast, the old long-stay patients have a total of four admissions, and have been in hospital on this occasion for about 20 years and have a total time in hospital in excess of 25 years. The numbers of NLS patients accruing over the four years of the study are given in Table 2. There is more than a

**Table 1**

Characteristics of new (NLS) and old long-stay (OLS) patients at Friern and Claybury hospitals

	NLS	OLS	P
Mean Age	46	60	<0.01
% female	42	44	NS
Previous admissions	6.8	3.7	<0.01
This stay: months	33	257	<0.01
Total stay: months	47	303	<0.01
PSE ID level	5.4	4.7	<0.01
PSE total score	15.2	11.2	<0.01
Schizophrenia: %	59.5	79.9	<0.01
Social behaviour problems	4.0	5.6	<0.01

**Table 2**

Mean numbers and rates of accumulation for patients at Friern and Claybury hospitals for 1985-89 with district Jarman and census scores

District	n	Rate per 100000	Unemployment	Overcrowding	Social class 5	Jarman score
Bloomsbury	21	4.1	10.19	11.86	6.14	35.8
Hampstead	29	6.7	10.73	9.94	3.62	24.7
Haringey	46	6.0	10.71	11.70	4.04	19.9
Islington	74	11.0	12.88	12.62	7.38	38.7
Waltham Forest	45	5.2	8.85	11.07	4.29	13.2
Redbridge	7	3.1	6.58	6.88	2.98	-13.2
West Essex	12	2.5	6.36	5.23	3.20	-19.3
Total	23	45.9				

fourfold variation between districts in their annual accumulation rates, varying between 2.5 and 11 per 100 000 population for West Essex and Islington respectively. For these seven districts together (serving a total population of 985000), the mean accumulation rate is 5.9 NLS patients a year.

## **NLS accumulation rates and social deprivation**

The Jarman Index of social deprivation (Jarman, 1983, 1984) has been previously associated with both physical and psychiatric morbidity (Charlton & Lakhani, 1985; Thornicroft, 1991). The index is a single score for each health district which combines eight weighted variables drawn from the 1981 census (elderly living alone, under fives, single parents, social class 5, unemployed, overcrowded accommodation, move of house in last year and ethnic group).

The district Jarman scores are given in Table 2. Again, there are very considerable differences between districts. The average national deprivation index on this scale is zero, therefore minus figures show less deprivation than for the country as a whole, and plus figures show more deprivation. The correlation coefficient between the rates of accumulation of NLS patients and the Jarman Index was 0.74 and for individual 1981 census variables values were: ethnic minorities -0.47; overcrowded -0.81; unemployed-0.90; and social class 5-0.91. The correlation between the accumulation rates and the Jarman score is relatively high at 0.74. Three of the census variables (overcrowding, unemployed, and social class 5) are, however, much more highly associated with accumulation rates than the Jarman Index. To explore the extent to which the two districts with the lowest accumulation rates (Redbridge and West Essex) influenced these results, the analyses were repeated excluding them. There were consequent reductions in the correlation coefficients between the accumulation rate and unemployment (0.90 to 0.87) and Jarman score (0.75 to 0.46), but the value for social class 5 remained at 0.92.

The values of  $r^2$  (the variance) indicate how much variation in the accumulation rates can be statistically accounted for by each of these variables. About half of this variation can be explained by the Jarman Index, but the three census variables individually account for about three quarters of the variation in the accumulation rates for these districts.

## **Discussion**

The statistical techniques used here can now give numerical values to the associations between social deprivation within inner-city areas and rates of treated mental disorder, associations which have previously been documented descriptively in Chicago, Bristol, Nottingham, and Mannheim (Fans & Dunham, 1939; Hare, 1956; Harrison et al, 1984; Ineichen et al, 1984; Giggs & Cooper, 1987; Weyerer & Haefner, 1989; Maylath et al, 1989). There is supportive evidence for these quantitative associations from three other sources. Firstly, data drawn from seven case registers around Britain are consistent with these findings. For each of seven case-register districts, the mean annual number of new long-stay patients accumulating per 100 000 of the population is 6.8 (Wing, 1989). The range of accumulation rates, between about 2.5 and 10.7 per 100000 population for West Essex and Islington respectively, is remarkably similar to that found within the health districts in this study. It is notable that the Jarman scores are ranked in exactly the same order as the accumulation rates between the high values in Camberwell and the low in Worcester. From a correlation analysis, the Jarman Index accounts for 0.77 of the variance ( $r^2$ ) between case-register districts.

Secondly, recent research on psychiatric admission rates for the districts of South East Thames has shown similarly high correlations between such indices of social deprivation and the total number of psychiatric admissions (Thornicroft, 1991). Again, combined social deprivation indices give moderately high correlation coefficients (Jarman  $r= 0.62$ ), while some individual census items are also more closely.

Thirdly, a study conducted by the Royal College of Psychiatrists in the North West Thames Region also found high correlations between the district Jarman scores and both the total adult admission rate ( $r= 0.76$ ) and the under-65 psychiatric admission rate ( $r= 0.80$ ) (Hirsch, 1988). In this study also about half of the NLS accumulation rate is statistically explained by the Jarman scores, a similar value to that found in this TAPS study. A finer-grained approach was adopted in Nottingham; Giggs & Cooper (1987), used enumeration districts rather than electoral wards as the unit of analysis for morbidity and neighbourhood type, and showed that schizophrenia was over-represented in the inner-city areas.

These studies, spanning half a century, show that there are clear spatial patterns in the place of residence of people admitted to hospital with psychiatric disorders. Most notably, areas of low social class are markedly over-represented. This finding is most secure for patients with a diagnosis of schizophrenia and has been replicated in the UK (Goldberg & Morrison, 1963; Lomas et al, 1973), in the Netherlands (Wiersma et al, 1983) and in the USA (Hollingshead & Redlich, 1958; Eaton, 1974; Link & Dohrenwend, 1980; Goodman et al, 1983; Shapiro et al, 1984).

In short, the findings presented here relate to the 240 patients accumulating in Friern and Claybury Hospitals in the period 1985-89 for whom complete data are available. They have had on average, seven admissions in the past and now have moderate or severe symptoms and behavioural problems. There are considerable variations in their accumulation rates, and the average across all the districts is 5.9 per 100000 population per year. The Jarman Index statistically explains about half the variation in district accumulation rates of the new long-stay patients. Some individual census variables (particularly over crowding, unemployment, and proportion of the population in social class 5) may by themselves account for up to three-quarters of the variation in rates, although the stability of these findings will only emerge from applying this approach in other areas.

A pattern is now emerging from several studies in different regions that this association is consistent and important, and recent related work within Hackney further suggests that accumulation rates of NLS patients appear to be stable over time (O' Driscoll et al, 1990). The replication of these findings in other health districts, and for more specific diagnostic groups, may allow specific and robust measures of social deprivation to be established as useful tools in planning psychiatric services to meet local, quantified needs.

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