

Changing Patterns in Mental Illness in the Elderly

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Summary: The study at Graylingwell Hospital conducted by Roth (1955) has in part been replicated in order to study the changing patterns of mental illness in the elderly over a 25-year period. Important changes in the diagnostic distribution and outcome of cases admitted have occurred. Functional illness has given way to dementia, not as a proportion of patients admitted but in the number of beds employed for their care 6 and 24 months after their index admission. Discharge rates for all diagnostic groups except acute confusional states, have undergone considerable change and death rates have fallen. The study has concentrated on the residual in-patient population, paying particular attention to increasing demand for beds for the dementing group. These changes have been quantified and reflect a four-fold increase in bed requirements for cases of dementia at two years. Despite a striking reduction in requirement for functional cases, there is an overall increase in bed requirement of 38 per cent at the two-year mark.

In 1955 Roth published a major study on the prognosis of mental disorder in the elderly; he used a precise diagnostic classification and demonstrated differences in prognosis between diagnostic groups as evidence of the validity of his classification. Thanks to this work, we continue to use with confidence Roth's five main groups:—affective psychosis, senile psychosis, late paraphrenia, arteriosclerotic psychosis, and acute confusional state. Nonetheless many important changes have occurred since that study and a further study in the light of more recent experience is now necessary.

Methods

Using Roth's diagnostic classification, all patients admitted to the psychogeriatric unit at the Crichton Royal in the years 1974 to 1976 were followed up at 6 and 24 months following admission as in the original study. Unfortunately, comparison between this group and Roth's sample at Graylingwell Hospital was hampered by a number of factors which considerably reduced the number studied. The lower age limit for admission to the respective groups differed and comparability was only achieved by eliminating Graylingwell patients between 60 and 69 and Crichton patients between 65 and 69 at the time of admission.

A further difficulty was that two-year follow-up information was not available on all of Roth's cohort, and for this reason consideration was confined to that part of the Graylingwell group (from the years

1948–49) for whom information was available concerning admission, diagnosis and condition at follow-up at 6 months and 24 months. The net effect of the changes outlined above is to reduce the Graylingwell group from the original 450 to 143 and the Crichton group from 343 to 265. The increasing age of the samples implied by these figures is strengthened by the fact that 46 per cent of the reduced Crichton group were over 80 years of age compared with only 22 per cent for the Graylingwell group. The sex distribution of the two groups was similar, as was percentage distribution by diagnosis.

Results

Six months

Table I illustrates the diagnostic categories on entry and the results at six months.

To facilitate comparison and to minimize possible diagnostic errors, the totals for all functional psychoses and all dementias were included. In each diagnostic category the number of Crichton patients discharged is higher at six months.

Of 78 Crichton patients with a functional diagnosis on admission, only 7 were in hospital at six months. By comparison, 24 out of 55 cases from Graylingwell with similar diagnostic classification were in hospital at that stage. These differences were statistically highly significant ($\chi^2 = 19.78$; $P < 0.001$). By contrast, when the dementias were considered, 63 out of the 132 Crichton cases remained in hospital, whereas only 20

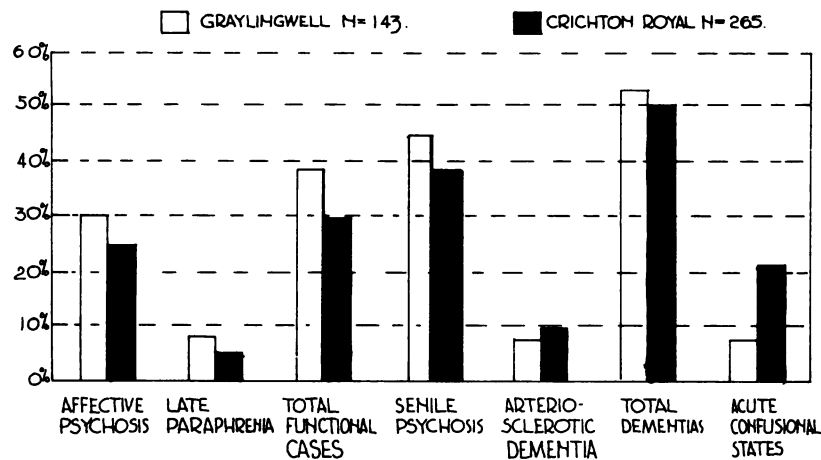


FIG 1.—Percentage distribution by diagnosis.

TABLE I
Results at 6 months

	Graylingwell 1948-49				Crichton 1974-76			
	Dis-charged	In-patient	Dead	Total	Dis-charged	In-patient	Dead	Total
Affective psychosis	23	15	5	43	48	6	10	64
Late paraphrenia	1	9	2	12	13	1	—	14
Total functional cases	24	24	7	55	61	7	10	78
Senile psychosis	8	16	40	64	28	57	15	100
Arteriosclerotic psychosis	2	4	6	12	8	6	18	32
Total dementias	10	20	46	76	36	63	35	132
Acute confusional states	7	2	3	12	34	7	14	55
Grand total	41	46	56	143	131	77	57	265

out of the 76 Graylingwell cases were still in hospital. Once again the results are significant ($\chi^2 = 8.35$; $P < 0.01$).

Fig 2 gives the outcome by diagnosis at six months. The composite picture drawn from these results is a discharge rate from Crichton of 49 per cent compared with 29 per cent for Graylingwell, and a Crichton death rate of 22 per cent compared with 39 per cent at Graylingwell. The residual in-patient rates for both hospitals were around 30 per cent, but the groups differed markedly in that the Crichton had fewer functional cases and many more dementias.

In neither study did acute confusional states exercise any great influence on the in-patient figures at 6 or 24 months. This group need not concern us

further since almost invariably death or discharge was the outcome.

Two years

The pattern exhibited at six months was maintained at two years (Table II) in respect of discharged patients and deaths. Crichton, however, now had a substantially greater number of in-patients. Five of the Crichton's original 78 functional cases were in hospital at two years, compared with 13 of the 54 Graylingwell cases. Again the differences are significant ($\chi^2 = 7.02$; $P < 0.01$).

In the dementia groups the pattern shown at six months is enhanced at two years, Crichton having 42 of its 132 patients still in hospital compared with only

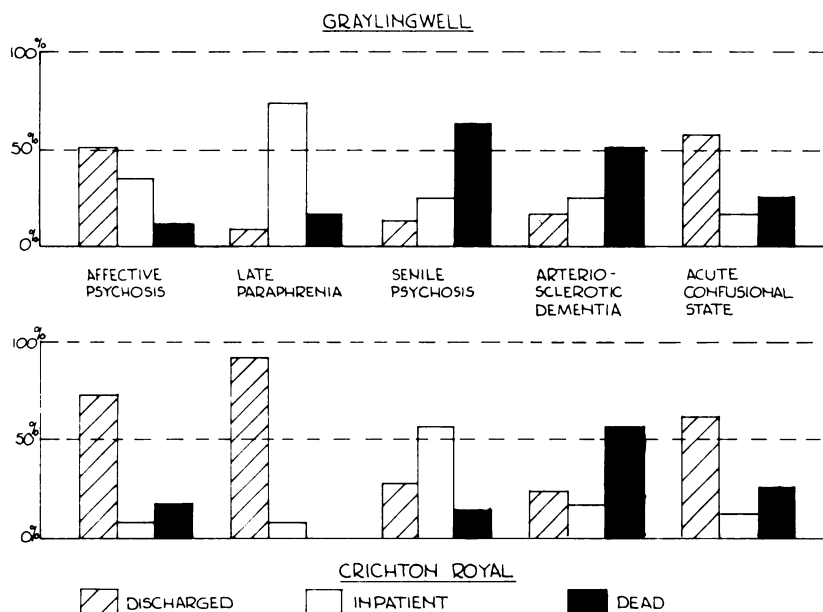


FIG 2.—Results at 6 months as percentages.

TABLE II
Results at 24 months

	Graylingwell 1948-49				Crichton 1974-76			
	Dis- charged	In- patient	Dead	Total	Dis- charged	In- patient	Dead	Total
Affective psychosis	18	8	17	43	45	4	15	64
Late paraphrenia	1	5	5	11	9	1	4	14
Total functional cases	19	13	22	54	54	5	19	78
Senile psychosis	3	5	56	64	15	35	50	100
Arteriosclerotic psychosis	2	—	9	11	3	7	22	32
Total dementias	5	5	65	75	18	42	72	132
Acute confusional states	8	—	4	12	26	2	27	55
Grand total	32	18	91	141	98	49	118	265

5 of Graylingwell's 75 patients ($\chi^2 = 15.8$; $P < 0.001$). Fig 3 gives the outcome by diagnosis at two years.

The total picture may be summarized as follows. Thirty-seven per cent of the Crichton patients were discharged at two years compared with 23 per cent for Graylingwell. Of the Crichton group, 45 per cent were dead compared with 65 per cent of the Graylingwell cases. Of the Crichton group, 18 per cent were in-patients compared with 13 per cent at Graylingwell.

Discussion

Taking as our hypothesis the idea that difference

between the Graylingwell and Crichton results reflect the evolution of old age psychiatry over a quarter of a century, we must first seek to justify comparing results from different centres at different times. Doubt must always remain on this point, but 30 years ago a multi-centre study (Royal Medico-Psychological Association, 1957) involving elderly patients from both these hospitals showed a remarkable similarity in patterns of admission, diagnosis and outcome at that time. It is therefore likely that we are justified in adopting the hypothesis. The interval between the studies is punctuated by important

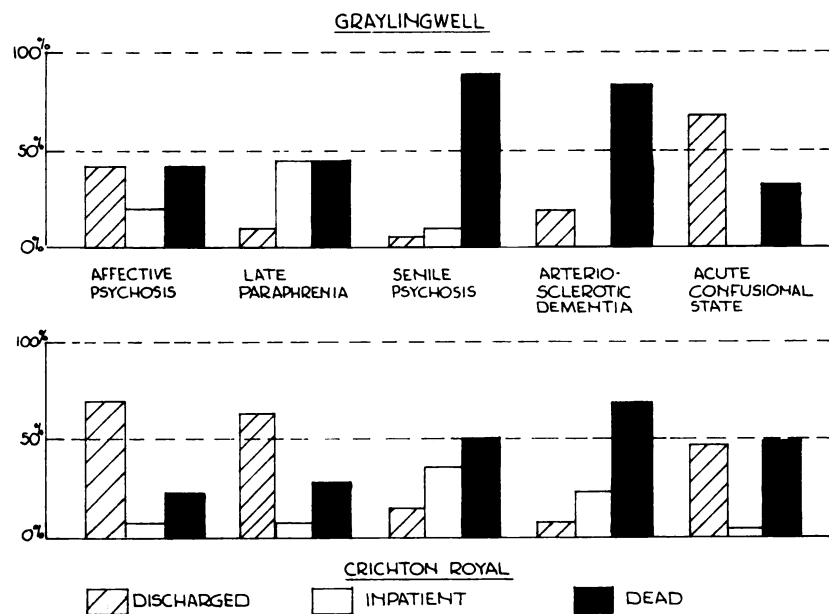


FIG 3.—Results at two years as percentages.

landmarks: in the 1950s phenothiazines were introduced; the legal basis for psychiatric care was changed by the 1959 and 1960 Mental Health Acts; antidepressant drugs were introduced in 1960, and at the same time other powerful therapeutic agents were playing an increasing part in the care of the elderly and, over the period, psychiatric services for the elderly had been developing. All these developments have occurred against a background of a changing population structure characterized by increasing numbers of the very elderly. With the exception of changing population structure, all these facts should improve the patient's prospects of effective treatment or care.

The conclusion to be drawn from the functional group is that results have improved with time. There is little or any change in the death rate at six months, but a markedly higher proportion of patients returned to the community in the 1970s. The same underlying pattern is evident at two years. Such is the recurring nature of mental illness that these results are likely to generate further demands for service. The improved outcome in these cases must in some degree reflect modern drug therapy. This point is supported by results in Roth's original paper for, despite social improvements and the introduction of ECT, results at six months quoted from the 1948-49 group for the over 69s were comparable with those of the 1934-36 period. Nowhere is the contrast between the 1940s

and the 1970s more striking than in the late paraphrenic sub-group where, despite the small numbers, the findings bear out Post's (1966) work on the value of phenothiazines in the treatment of this condition.

The results in dementia are the mirror image of those in the functional groups in respect of in-patient requirements at both review periods. Bed space no longer used by functional cases appears to have been completely taken over by cases of dementia as this problem has increased in significance (Leading Article, *B.M.J.*, 1978); at the same time discharge rates have increased and mortality rates decreased. We cannot, as in the case of the functional groups, attribute these changes to the beneficial effect of recently introduced psychotropic drugs, but it is possible that other drugs such as antibiotics have contributed to these changes.

Robinson (1965) has described the development of comprehensive psychiatric services for the elderly at Crichton Royal in the 1950s and 1960s. It is likely that this wide ranging process has greatly influenced results reported here.

Service implications of change

The bed requirements at 6 and 24 months in standardized form (per 100 admissions) for each diagnostic group can be estimated from Tables I and II, and for the cohorts as a whole from Table III. This shows that Graylingwell required four times as many beds at 6 months for affective psychosis and ten

TABLE III
In-patient rates/100 admissions in each diagnostic category

	6 months		24 months	
	Graylingwell	Crichton	Graylingwell	Crichton
Affective psychosis	35	9	19	6
Late paraphrenia	75	7	45	7
Total functional cases	44	16	24	6
Senile psychosis	25	57	8	35
Arteriosclerotic psychosis	33	19	0	22
Total dementias	26	48	7	32
Acute confusional states	17	13	0	4
Grand total	32	29	13	18

times as many beds for cases of late paraphrenia compared with the Crichton; it only required half as many beds for cases of senile psychosis, but for arteriosclerotic psychosis there was a 50 per cent higher bed requirement.

Looking at the cohorts as a whole, both hospitals required similar numbers of beds at 6 months, but the distribution differs markedly: of Graylingwell's 32 beds, 17 were required for functional cases and 15 for dementias; while of Crichton's 29 beds, 3 were required for functional cases and 26 for dementias.

At two years the same trends are in evidence with the exception of arteriosclerotic psychosis where Graylingwell's bed requirement was nil. The Graylingwell/Crichton ratio for affective psychosis is 3:1, but, by contrast, the senile psychosis group ratio has increased to over 1:4.

There are also appreciable changes in the overall requirements, the Graylingwell figure dropping to 13 beds per 100 admissions (9 functional and 4 dementias), whereas Crichton required 18 beds (2 functional, 16 dementias). In his study of organization and development of services, Brothwood (1971) cited demographic changes in the elderly population which are reflected in the present study, namely the increasing proportion of the very elderly among the Crichton group. The increased survival of patients, despite increasing age at the time of admission, supports one explanation of the paradoxical finding that admission rates for the elderly with dementia have been falling in England and Wales in the 1970s (Shulman and Arie, 1978). The prolonged survival of already admitted patients is restricting the rate for new admissions.

The fall in the proportion of affective cases, mainly depression, accords with a pattern reported at Crichton and elsewhere (Little *et al*, 1978). Whether

this reflects better home management of cases, a relegation by psychiatrists of depression in favour of dementia, a failure to diagnose depression in elderly people with multiple pathology (Ferguson Anderson, 1971), or simply the acceptance of illness by the elderly as natural in old age (Williamson *et al*, 1964) remains an open question.

This study reports marked changes among the elderly with mental illness. The age distribution among those over the age of 70 has undergone significant change. Of the 143 Graylingwell patients, 32 were over 79, whereas 122 of the Crichton's 265 patients were in that age group. These differences are highly significant ($\chi^2 = 22.28$; $P < 0.001$). Secondly, the once predominant affective group command a smaller proportion of the in-patient time. This is even more true of the late paraphrenics. These changes are probably due in some measure to the introduction of phenothiazines and antidepressants, coupled with developing day hospital and community services.

In-patient work has undergone a radical change. Functional cases have more than been replaced by a dementing population who are surviving longer than their predecessors. The number of beds required at two years for these patients has increased four-fold, and despite the decline in the number of beds required for functional cases, the bed requirements per 100 admissions at two years has now risen from 13 to 18, an overall increase of 38 per cent. The death rate at two years has dropped by 31 per cent, the fall being more marked among dementias (from 87 per cent to 55 per cent) than the functional group (41 per cent to 24 per cent).

The findings of the present study show that, despite areas of progress, the rising prevalence of dementia and the increasing survival of demented patients, is

posing serious problems for the psychogeriatric services.

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