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Review Article

Day-Hospital and Community Treatment for Acute Psychiatric Illness
A Critical Appraisal

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Findings on the efficacy of day-hospital and community treatment for acutely ill psychiatric patients have been contradictory. This review confirms the methodological problems previously noted, but highlights the variation in feasibility of day care: staffing levels and the attitudes of staff appear to have been responsible, along with the severity and chronicity of illness. The comparison of day and in-patient care to see which is 'superior' has been unrewarding, and further research is needed. Day-hospital treatment is unlikely to be more widely used for acutely ill patients until: (a) there is clear evidence that certain patients are best treated in this way; (b) the social and clinical characteristics of such patients are defined; (c) adequate staffing is achieved (i.e. day care is not regarded as a cheap option); and (d) day centres are available for chronic patients.

Although it is nearly 15 years since the Department of Health and Social Security (DHSS) recommended that acutely ill psychiatric patients be treated in day hospitals rather than in-patient units (Department of Health and Social Security, 1975) the efficacy of such treatment remains unproven and the role of the day hospital unclear. Numerous reviews have been published, but their conclusions are contradictory.

One American and three English reviewers (Braun *et al*, 1981; Vaughan, 1983; Wilkinson, 1984; Tantam, 1985) have concluded that claims of the superiority of day-hospital over in-patient care for severely ill patients are premature because most of the studies have been beset with methodological inadequacies. Two further reviews (Greene & de la Cruz, 1981; Schene & Gersons, 1986) concluded that day-hospital treatment was superior in terms of social adjustment, but in all other respects the evidence was too flimsy to draw definite conclusions. On the other hand, three further American reviewers (Kiesler, 1982; Mosher, 1983; Rosie, 1987) have been prepared to accept the evidence as scientifically sound, and recommended that day care should become more widespread.

It is partly because of this lack of satisfactory empirical work that the development of day-hospital treatment has been described as being "disordered" (Vaughan, 1983) and determined "more by fashion than by experimental evidence" (*Lancet*, 1985). However, there are practical problems also. Some day hospitals cannot care for acutely ill and severely neurotic patients because they are full of chronic patients, especially those with psychotic illnesses (McGrath & Tantam, 1987; *Lancet*, 1987).

This review examines the scientific and practical problems of assessing the efficacy of day-hospital treatment for acute illness. Firstly, we consider whether the methodological weaknesses of previous studies can be overcome in future. Secondly, we assess the specific questions raised in previous reviews: (a) which patients benefit most from day-hospital treatment (Wilkinson, 1984), and (b) what are the essential ingredients of day-hospital treatment, compared with both day-centre and in-patient facilities (Vaughan, 1983)?

The term 'acute' is used in this review to indicate those illnesses that present to psychiatrists for a fresh episode of treatment and not transfers from a long-stay bed. Although we have tried to concentrate on services that are confined to direct admissions from the community, this has not always been possible, because some published reports have not been sufficiently clear about the source of patients, and some studies have admitted a mixture of out- and in-patients to the day hospital.

A number of studies have been included that have evaluated community services set up and run with the specific aim of avoiding in-patient admission. These may or may not have included day care, but have been mentioned in this review because the published studies of day hospitals have not been as detailed as these community-service evaluations regarding the requirements of a service that can treat seriously ill patients without recourse to in-patient admission.

The term 'day hospital' is used in the sense of Rosie (1987), to indicate a facility that provides diagnostic and treatment services for acutely ill patients who would otherwise be treated on traditional psychiatric in-patient units. This distinguishes them from 'day-treatment programmes' for specialised groups of patients, or those with partially

remitted illness, and 'day centres' that have the maintenance of chronic psychiatric patients as their primary task.

Methodological problems with previous research

Wilkinson (1984) found that existing studies have used small numbers of patients, with a selection bias, only partial or no randomisation, and little control of important variables such as diagnosis, medication, and treatment between discharge and follow-up. Day care and in-patient care have not been clearly defined, outcome measures have not been standardised or rated blindly, and too many patients have been lost to follow-up. Wilkinson clearly hoped for an ideal study, but did not consider the practical problems which may prevent this. His list of criticisms was similar to that of Guy & Gross (1967), and during the last 20 years the 'ideal' study has not been performed. It is necessary to understand why this is so if future research is to be different, and we must decide what tentative conclusions can be drawn from the literature. Some of Wilkinson's criticisms are likely to continue to vex those who try to research the efficacy of day hospitals, and these are considered first.

Blind ratings

Blind ratings are, of course, desirable, but are very difficult to achieve. Washburn *et al* (1976) hired outside trained raters, who were not told of the patient's experimental group, but they 'inevitably' learned of this during the interview. To make blind ratings, every interview would have to be recorded, the clues as to the modality of treatment removed, and the recording then rated by a second research worker. Such a method is unlikely to be feasible unless enormous research funds become available.

Number of subjects and standardised assessments

The number of subjects has tended to be inversely proportional to the detail of the patient assessment. Thus the large survey of the DHSS (1969) merely used a clinician's judgement of 'improvement' as an outcome measure, and Wilder *et al* (1966) used readmission rates and the unstandardised criterion of 'adjustment perceived by patient and family'. More recent studies have used standardised measures, but groups have generally been limited to 45–60 patients, because such measures are time consuming, must be done by independent research staff, and involve interviews with both patient and informant if they are to be done properly. In view of this limitation of numbers, the study population must be chosen with care.

Outcome criteria

As with the studies of discharged in-patients (Avison & Speechley, 1987) different outcome criteria have been used to evaluate day-hospital treatment, making comparison of studies difficult. Readmission rates have been widely used, but measures of clinical and social change, and the level of burden on the patient's relatives, may be more meaningful. With so many different measures of outcome to be considered, it is meaningless to speak of the 'superiority' of one form of care over another, unless there is evidence for this in a majority of these parameters.

Readmission rates

Three measures have been used: proportion of patients readmitted after the study period has ceased; duration of such readmissions; and, conversely, days spent in the community. Patients have been followed up after one or two years. The one-year follow-up study of Herz *et al* (1971) found that day patients had a lower readmission rate than in-patients, but Michaux *et al* (1973) found no difference on this measure. Wilder *et al* (1966) found no significant difference at two years between day and in-patient groups in the readmission rate or cumulative hospital stay, whereas Endicott *et al* (1979) found some evidence that day care following brief in-patient care reduced the duration of any subsequent readmissions.

The only important additional finding in the community-care studies was that of Stein & Test (1980), who found that the reduction of in-patient care during the study year was not maintained over the subsequent two years.

These results do not provide any clear evidence that treatment in a day hospital prevented further in-patient admissions. This may be because readmission is closely related to previous admissions (Avison & Speechley, 1987), and only a study of new patients would show whether day-hospital admission is superior to in-patient treatment in this respect. Hoult (1986) provides anecdotal evidence to support this contention so far as treatment in the community is concerned. Other evidence suggests that there are subgroups of patients who have high and low readmission rates, and these should be considered separately in future research (Lavik, 1983). Although readmission rates can easily be measured, they are of limited value in assessing the efficacy of day-hospital treatment.

Clinical versus social findings

Superiority of day care over in-patient care has generally been more evident on measures of social functioning rather than symptom remission. For example, Herz *et al* (1971) found their day-care group was superior at follow-up on the scales of daily routine (leisure time and housekeeper role), whereas the two groups had similar symptoms. Wilder *et al* (1966) found that in-patients reported better family adjustment at follow-up than the day patients, but did wonder whether discharged in-patients denied their family problems in comparison with day patients, who had received family therapy.

An interesting result emerged from the naturalistic study of Michaux *et al* (1973), which seemed to indicate greater symptomatic improvement among the in-patients during the period of admission, whereas at two-month and one-year follow-up, day patients showed superior social functioning, although symptomatic status was similar at these times.

A similar pattern has emerged among community studies. Fenton *et al* (1979) identified the superiority of community treatment only on social measures. Stein & Test (1980) found improvement on both clinical and social measures at the end of the study period, but relapse in both spheres had occurred at two-year follow-up, although the community group retained its superior employment status.

These findings include disparate aspects of social functioning (role performance, employment, and social adjustment), as studies to date have not used uniform measures. However, the apparent concordance of results indicating the superiority of day care with respect to social, rather than symptomatic, recovery needs to be examined further and possible reasons for this are discussed below.

The burden on the patient's relatives

A rather different outcome measure, used in a minority of studies, is reduction of the burden that the patient's illness imposes on his relatives, or others in close contact with him/her. Evidence on this question is limited and confused, owing to the problems in conceptualising various aspects of burden (Platt, 1985; Fadden *et al*, 1987), but some interesting observations have emerged.

Michaux *et al* (1973) found that relatives of day patients expressed greater satisfaction with the patient's role performance and free time activity after a year than the relatives of in-patients. It is not clear whether this represents superior performance on the part of the patient, or a more favourable perception of it by the relative. Washburn *et al* (1976) also found that at one year the relatives of day patients were continuing to report a reduction in burden, whereas the relatives of in-patients were reporting an increase. This could mean that day-hospital treatment is more effective than in-patient treatment in alleviating burden, but that the full effect of this is delayed (Creed *et al*, 1988).

The community study of Fenton *et al* (1979) throws further light on this subject, because their comprehensive evaluation of burden indicated that, after one month of treatment, the relatives of the in-patients complained of having to carry the responsibilities ordinarily carried by the patient, and so in-patient admission was associated with more burden on the relatives, even though admission is generally regarded as reducing this, at least in the short term. Much more research on burden is required. The subjective and objective aspects need to be clarified (Fadden *et al*, 1987), and if day-hospital treatment does in fact reduce burden in the long-term, the reasons for this must be explored.

Follow-up rate

Two studies mentioned in this review have achieved follow-up rates of 90% (Wilder *et al*, 1966; Michaux *et al*, 1973), but two other studies with highly selected populations (Herz *et al*, 1971; Fenton *et al*, 1979) followed up 77% and 56% respectively. These low follow-up rates limit the usefulness of these studies, which are otherwise informative. The studies of community programmes, whose results are quoted where they throw additional light on treatment outside of hospital, have rated at follow-up 88% of patients at one year (Hoult, 1986) and 81% at two years (Stein & Test, 1980).

It would be wrong to equate follow-up rate with the quality of a study, however, as the proportion of patients seen at follow-up depends partly on the nature of the population studied. A true cross-section of patients entering a district psychiatric service will often include some highly mobile people, so a considerable attrition rate is inevitable. In fact there has been a tendency for those studies with a high follow-up rate (Michaux *et al*, 1973; Stein & Test, 1980; Hoult, 1986) to have included a high proportion of patients with chronic illnesses, as indicated by the low proportion with no previous admissions (Table I).

Patients admitted to hospital are relatively accessible for research interviews, and most will be prepared to co-operate at this time. However, follow-up interviews may be resisted if they involve visits to the patient's house and further interviews with an informant. To skew the research towards the

TABLE I
Percentage values for demographic, diagnostic, and treatment data in comparative studies

	Diagnosed as schizophrenic	*No previous admission*	*Male*	*Married*	*Aged <35 years*
Random-allocation studies (day or community v. in-patient care)					
Wilder *et al* (1966)	40	44	43	—	—
Herz *et al* (1971)	49	63	41	36	65
Fenton *et al* (1979)	42	40	40	41	52
Washburn *et al* (1976)	50	—	0	—	c.55
Hoult (1986)	54	25	c.45	20	—
Stein & Test (1980)	50	17	55	27	c.60
Dick *et al* (1985*a*,*b*)	0	—	21	58	c.50
Descriptive studies/matched samples					
Hogarty *et al* (1968)	40	39	—	—	—
Michaux *et al* (1973)	54	27	25	55	c.50
Gudeman *et al* (1983, 1985)	48	28	—	3	—
Penk *et al* (1978)	48	—	0	66	c.55
Gath *et al* (1973): large	40	—	39	39	c.16
small	8	—	42	47	c.51
McGrath & Tantam (1987)	62	—	—	—	—
Brief v. standard in-patient care (all admissions)					
Knights *et al* (1980)	23	36	40	49	—
Kennedy & Hird (1980)	17	53	50	40	34
Herz *et al* (1975)	63	45	44	34	65

chronically sick improves the follow-up rate, but means that the results cannot be generalised to the acutely ill. Information on those subjects lost from follow-up is sparse. Herz *et al* (1971) found that they had been less ill at admission than the remainder, whereas Fenton *et al* (1979) and Creed *et al* (1989) found they were similar to the whole cohort in terms of severity.

Diagnosis and previous treatment

The populations of patients included in the various studies have been very different (Table I). The experimental studies have comprised approximately half schizophrenics, but this proportion is approximately twice that of the population of patients entering the in-patient unit of the brief-stay district services studied by Knights *et al* (1980) and Kennedy & Hird (1980). Such differences must challenge the assumption that day care is an alternative to in-patient care for all patients.

However, diagnosis and treatment history do not, in themselves, provide an adequate description of the populations studied. Although Penk *et al* (1978) and Gudeman *et al* (1983) included identical proportions of patients with schizophrenia, the number who were married were 66% and 3% respectively, so the availability of social support may have varied greatly. Another indicator that previous studies have included widely differing populations is duration of previous admissions. Data are very sparse on this point, but it is probably the simplest indicator of whether a day hospital is used for acute admissions or rehabilitation. Stein & Test (1980) reported that 34% of their patients were transferred from prolonged stay in a hospital bed, whereas all of the patients studied by Herz *et al* (1971) and Dick *et al* (1985) were acute admissions.

Large studies or selected populations?

Studies of selected groups of patients with a single diagnosis are attractive because this reduces the number of variables to be considered, but trying to isolate a homogeneous group may exclude a large proportion of patients. When Dick *et al* (1985) confined their study to certain diagnostic groups, they had to exclude four-fifths of recently admitted patients. If additional criteria to that of diagnosis are added, the selection becomes more severe; an extreme example of this is found in the literature concerning chronically ill patients. When Wing *et al* (1972) evaluated a day-hospital rehabilitation programme for unemployed psychotic patients, they

found that out of 380 psychotic patients on the case register, only 28 fulfilled all the inclusion criteria and were willing to be involved in the study. The results were satisfactory from a scientific point of view, but could not be generalised to the larger pool of psychotic patients under the care of a district psychiatrist. This study illustrates the dilemma facing the researcher. The present state of day-hospital research suggests that large studies are still needed, so that diagnostic or demographic subgroups which seem to benefit most from day care can be identified. More rigorously controlled studies can then be applied to these selected subgroups. At present, our knowledge is far too limited to identify these patients, so inclusion of certain diagnostic groups (e.g. Dick *et al*, 1985) runs the risk of excluding those patients who might benefit greatly from day care.

Feasibility of day care for acutely ill patients

If day-hospital treatment is a preferable form of care, can it be utilised for all, or most, patients? Vaughan (1985) thought not, and indicated that approximately 25% of all patients considered for admission to hospital could not be treated as day patients because of disturbed behaviour that was uncontainable in the community and would disrupt day-hospital treatment programmes. Others have thought differently, and have been able to allocate to a day hospital or community service all patients between 18 and 65 years of age, except those with a primary diagnosis of drug or alcohol dependence, organic brain disorder or mental retardation (Wilder *et al*, 1966; Stein & Test, 1980; Hoult, 1986), as shown in Table II. This variation may reflect the nature of the patients or their illnesses, and/or the number and attitudes of staff.

Dick *et al* (1985) limited their study to patients with diagnoses of neurosis, personality disorder and adjustment reaction, presumably considering that psychotic patients could not be treated in the day hospital. However, they also excluded many neurotic patients on the grounds that they were 'too ill', but no definition of this term was given. Since all patients with schizophrenia, affective psychosis, and organic syndromes were excluded, only a tiny proportion of all admissions would have been included in this study. Another British study which attempted to allocate patients randomly between day and in-patient care also indicated that the clinicians involved believed that day care was not suitable for acutely psychotic patients. Platt *et al* (1980) abandoned their study when they discovered that only 10% of all possible patients had been included. These two studies suggest that clinicians already have criteria regarding who is suitable for day-hospital treatment, but without detailed clinical and social assessments on those patients deemed unsuitable, these criteria cannot be ascertained.

Two American studies that had very similar patterns of exclusion were those of Herz *et al* (1971) and Fenton *et al* (1979). They randomly allocated 22% and 19% of patients respectively, and the proportions in each exclusion category were similar (Table II). This is surprising because Herz *et al*'s study was of day care, whereas Fenton *et al*'s was a community programme, with a 24-hour on-call system. Twenty-two per cent was also the figure in

TABLE II
Percentages of patients excluded from comparative studies

	Of all admissions included	*Reasons for exclusion*		*Admission refused*
		Too ill	*Too well*	
Wilder *et al* (1966)	100% in-patients	—	—	—
	66% day patients	33[1]	—	—
Herz *et al* (1971)	22	38[2]	20	20
Fenton *et al* (1979)	19	35[3]		46
Washburn *et al* (1966)	15	58		27
Hoult (1986)	100[4]			
Stein & Test (1980)	100[4]			
Dick *et al* (1985)	22	30	12	36
Platt (1985)	12	56[5]	22	10

1. Organic brain syndrome/alcohol or drug dependence/physical illness, 17.
2. Organic brain syndrome/alcohol or drug dependence/physical illness, 7; suicidal/homicidal, 17; psychotic/too disorganised, 14.
3. Organic brain syndrome/alcohol or drug dependence/physical illness, 19; suicidal/homicidal, 16.
4. After organic brain syndrome/alcohol or drug dependence/physical illness excluded.
5. Suicidal/homicidal, 28; psychotic/too disorganised, 28.

Penk *et al*'s (1978) study which, although not a random-allocation study, did individually match day patients with in-patients in terms of age, type and severity of illness, and personal resources.

Unlike most authors, Herz *et al* (1971) provided data on those patients who were excluded from the study because they were too ill: they were comparable to those included on major demographic variables, but they had had more previous admissions to hospital, their illnesses were more severe, particularly in terms of disorganisation, and they included more patients with organic brain syndromes. Staff resistance prevented Washburn & Vanicelli (1976) from allocating a reasonable proportion of patients, even after several weeks of in-patient care. However, attitudes must have been quite different in the study of Wilder *et al* (1966): 378 patients were randomly allocated and two-thirds of those referred to day care were accepted for treatment in that facility. The category 'too ill' for treatment in a day hospital must therefore be regarded as partly a reflection of staff attitudes.

Perhaps the best way to discover which patients can feasibly be treated in a day hospital is to study those who are allocated to such care, but have to be transferred to in-patient care during the study period. Such transfers are not rare. Wilder *et al* (1966) found it necessary to 'board' 40% of patients in the in-patient unit for short periods because of risk to the patient or others; this usually occurred during the first two weeks of treatment. Herz *et al* (1975) similarly boarded 22% of their day patients because of suicidal or violent behaviour. Such boarding lasted between 1 and 27 (mean 13.7) days. Attempts to treat patients primarily as day patients led Gudeman *et al* (1983) to admit 79% of patients for a mean of 10 days to the intensive care unit at the start of treatment.

The community-treatment programmes provided similar results. Fenton *et al* (1979) admitted 30% of patients for a mean of 1.8 days, and a further 8% required longer admission. Hoult (1986) needed in-patient care for those who 'were heavily sedated following immediate tranquillisation, who refused to cooperate thus needing compulsory treatment and those too disorganised in their behaviour to be treated immediately in the community'. Forty per cent of patients received in-patient treatment during the year, even though still under the care of the community team; 26% for less than one week and 14% for more than one week. Stein & Test (1980) found hospital admission necessary but rarely for more than two weeks. A few patients obviously spent considerable time in hospital, since the mean length of stay was 16 days. On the other hand, on no occasion did Dick *et al* (1985) find it necessary to transfer a patient to the in-patient unit following allocation to day hospital – presumably a reflection of their very stringent inclusion criteria.

None of these studies has provided separate data for those patients who could not be managed solely in the day hospital. If these patients could be identified by particular clinical or social characteristics, selection for admission to the day hospital could be put on a more secure footing, and future research could compare more accurately the effects of day and in-patient treatment for these subjects. It seems likely that a greater proportion of acutely ill patients can be managed in the day hospital than at present occurs. Doctors' resistance to day-hospital treatment is an important factor (Washburn *et al*, 1976; Platt *et al*, 1980; Rosie, 1987), but their resistance is unlikely to be overcome by the over-enthusiastic claims of those who run a community service and who minimise the importance of immediate, but brief, in-patient admission for a significant proportion of patients (Tantam, 1985; Hoult, 1986).

Which patients benefit most from day-hospital treatment?

The ideal study to answer this question would involve a large cohort of day patients, so that those who did best could be identified, using matched in-patients as a control group. Unfortunately this has not been the design of most studies, which have simply aimed to demonstrate that day care is as good as in-patient care.

One uncontrolled study (Carney *et al*, 1970) did examine subgroups of day patients and found that many previous admissions, diagnosis of personality disorder, and admission for the purpose of general support predicted a poor outcome; these results would presumably hold for in-patient care also. In a controlled, but not a random-allocation study, Michaux *et al* (1973) noted some differences between schizophrenic and non-schizophrenic patients. The former showed slower but more lasting clinical improvement with day care, whereas in certain aspects of social role performance it was the non-schizophrenic patients whose improvement was greatest in the day-care group.

The only study of day care to have included sufficient numbers to permit examination of outcome by diagnosis was that of Wilder *et al* (1966). Female schizophrenics formed the only group that did better with day-hospital than in-patient treatment. Patients with affective psychosis did better with in-patient care, although a second admission was often required

before full recovery was achieved. This latter result is similar to that of Kennedy & Hird (1980), who found that patients with affective psychosis did not benefit from a brief in-patient admission and needed a longer initial stay. This benefit was contrasted with the effect on alcoholics, whose second admission was not beneficial and whose care has been shown to be equally satisfactorily completed in a day hospital (Potamianos *et al*, 1986), casting doubt on the need to exclude such patients from day-hospital studies.

In their study of brief in-patient treatment followed by day care, Endicott *et al* (1979) isolated two factors that were significantly related to outcome according to treatment group. Those patients with high initial scores of 'overt anger' on the Psychiatric Status Schedule fared very much better on brief in-patient care followed by day care, rather than on in-patient care alone. Secondly, although patients with no previous admissions did equally well in either treatment group (in terms of days subsequently spent in the community), those with many previous admissions fared much worse with standard in-patient care.

Conversely, Hoult (1986) found the greatest difference in patients never previously admitted. Although numbers were small, these patients were more likely to be readmitted if their initial treatment was in-patient rather than community care.

Possible reasons for superiority of day-hospital treatment

Length of stay

One reason that day care might appear to bring about superior social functioning than in-patient care could be the longer duration of stay. Wilder *et al* (1966) noted that day care lasted eight weeks on average, compared with two weeks for in-patients, and in two other studies day care was twice as long as in-patient stay (Fink *et al*, 1978; Dick *et al*, 1985). Bowman *et al* (1983) found a similar duration of stay (36 and 42 days) and Gudeman *et al* (1985) found that their reorganisation towards greater day care did not significantly change length of stay. In only one study was in-patient stay longer (Herz *et al*, 1971), but Wilder *et al* (1966) suggested that day patients were discharged prematurely as they looked well, travelled alone and assumed home responsibilities.

The reasons for the longer stay of day patients need to be understood. One suggestion, concerning schizophrenic patients, is that recovery is slower in the day hospital (Michaux *et al*, 1973). Wilder *et al* (1966), however, explained that pressure on beds led to early discharge from their in-patient unit, whereas a planned course of family/occupational treatment in the day hospital took eight weeks. A day-hospital programme that sets satisfactory social functioning as its goal is likely to last longer and produce superior social functioning than an in-patient admission, which aims principally to induce symptom remission.

One study did hold the length of stay constant, thereby improving the scientific nature of the experiment (Penk *et al*, 1978), but this study suffered other shortcomings: the patient groups were 'matched' but not randomly allocated; follow-up assessments were performed on only 60% of subjects, and many would regard the treatment duration chosen (33 days) as rather short to obtain the maximum benefit from day care.

Medication

Wilkinson (1984) listed medication as an important variable which has not been controlled in most studies. None of the studies of day care for acutely ill patients has examined this issue, but one study of day care following in-patient care (Glick *et al*, 1986) reported no difference in levels of medication between groups, who also showed no difference in outcome. Two studies of community programmes examined this factor. Fenton *et al* (1979) recorded similar amounts of medication being taken during the follow-up period, so this could not account for the differences found at follow-up. Stein & Test (1980), on the other hand, noted better compliance of their index patients compared with controls; this could have accounted for the success of this group, rather than psychosocial interventions. Compliance fell and symptoms relapsed after follow-up.

Staffing levels

The *Lancet* (1985) stated that satisfactory day care required "a well-staffed unit that is prepared to accept a wide range of patients and include several treatment programmes that can be run simultaneously." Most studies have provided rather sparse details of staffing levels, and these can be related only to proportion of patients allocated, rather than outcome of treatment.

Dick *et al* (1985) noted that the staffing level of their day hospital was only one-third of that of Zwerling & Wilder's (1964); the latter was able to accept two-thirds of all patients presenting. In general, those studies with a high allocation rate had a high staff:patient ratio (Washburn *et al*, 1976; Penk *et al*, 1978; Gudeman *et al*, 1983).

More precise details were provided in the community studies: Hoult (1986), Fenton *et al*

(1979), and Stein & Test (1980) all had 24-hour nursing available, and had adequate numbers of staff to provide intensive treatment in the community. Stein and Test described 'assertive' staff, who visited the patient immediately if he failed to attend for work, and Hoult described how relatives could page a member of the team at any time. The close one-to-one work noted in these community programmes must have been a powerful therapeutic ingredient.

Whether the same is true of day hospitals will depend on numbers of staff. The well staffed day hospital envisaged in the *Lancet* (1985) would probably be able to offer closely supervised individual treatment, including 'chasing' the patient who is late or fails to attend. Thus greater staff availability in a day hospital compared with an in-patient unit could account for differences in outcome.

The only study that offered day and in-patient care in the same setting, thereby ensuring similar staff availability and treatment approach, was that of Herz *et al* (1971). The superior social functioning recorded at the end of this study could not therefore be attributed to different staffing levels. However, this was also the study in which day patients were discharged much more rapidly than in-patients, so the results could be attributed to early discharge, continued contact with the family, or a combination of both.

Fortunately a further study (Herz *et al*, 1975) indicated the importance of rapid return to the family when a patient is admitted to an in-patient unit. Brief in-patient stay led to the best social outcome, whether or not it was followed by day care, suggesting that rapid return to the family is more beneficial than prolonged in-patient treatment. In fact, only half of the patients allocated to day care actually attended the day hospital, suggesting that this treatment has little to offer after in-patient care. There is an important proviso to add to this conclusion. This study was confined to patients with families. The authors rightly point out that the results cannot be generalised to those without families (one-third of all admissions). It is possible that a family can provide the support and stimulus that the recently discharged patient needs, whereas those without such a family might benefit from further day care.

Staff attitudes

Several authors have commented on the attitudes of staff involved in the switch from in-patient to day care in the experimental studies. Herz *et al* (1971) noted that the staff were initially antagonistic, later accepting but still preferring in-patient care for seriously ill patients. These authors stated that administrative pressure is necessary to overcome staff resistance. Washburn *et al* (1976) noted that staff resistance actually prevented random allocation of a proportion of patients. Junior medical staff were especially prone to warn their patients of the problems involved in day care, thereby decreasing the chances that the patient would agree. Unexplained administrative delays also meant that some patients for whom day care had been 'agreed' did not reach that treatment facility in time to be included in the project.

Fink *et al* (1978) also identified the bias of the clinicians involved. Most thought that in-patient care was preferable because it was safer and provided more intensive treatment, and some thought the separation from family was desirable. These authors noted that of ten clinicians receiving admissions, the three attached to the day hospital admitted 86% of the day-hospital patients, so the other seven clinicians must have treated their patients almost exclusively as in-patients. They also commented that the families of many patients were initially resistant to day care, but later reported more satisfaction from it.

Both Hogarty *et al* (1968) and Fink *et al* (1978) commented that relatives were initially resistant to the idea of day or community treatment, but were satisfied with it by the end of the treatment.

Platt *et al* (1980) noted that junior medical staff were more likely to admit to the in-patient unit than senior staff. Although Bowman *et al* (1983) found that severity of illness was recorded by doctors as their main reason for admission to the in-patient unit rather than the day hospital, the following reasons were also given: family's request (important in 66% of cases), referring doctor's request (50%), medical complication (26%), and the patient refusing day care (26%).

Lipsius (1973) studied the attitudes of both staff and patients directly. Both agreed that two-thirds of admissions could have been avoided! There was good agreement between staff and patients that most admissions of patients with personality disorders were unnecessary, and that half of those with schizophrenia could have been avoided, but there was disagreement regarding affective psychosis: many more patients than staff felt that these admissions could have been avoided.

Many staff evidently resist using day care as the primary treatment modality for acutely ill patients. This may prevent a random-allocation study from taking place (Platt *et al*, 1980), or cause the bias in allocations that Wilkinson (1984) criticised. It is certainly a practical problem for researchers. What is not known is whether negative attitudes of this sort influence the nature of the treatment offered.

Zwerling & Wilder (1964) commented that staff morale must be good to retain psychotic patients through a course of treatment. The descriptions of the community programmes (Stein & Test, 1980; Hoult, 1986) suggested high staff enthusiasm for the experimental treatment; the deterioration of the patients after the experiment ceased indicated that staff enthusiasm may have been a key ingredient. On the other hand, Gudeman *et al* (1985) reported consistent staff enthusiasm for primary day-hospital treatment over four years, suggesting that the change in attitude was more than a Hawthorne effect.

Staff attitudes would merit further study, especially as they are very likely to be related to the quality of care. If positive staff attitudes can be maintained in a day hospital this may be therapeutic for the patients, but it is also important to find out the determinants of negative attitudes, as these may prevent the implementation of the DHSS (1975) recommendations that day care should be used more widely for acutely ill patients.

Cost–benefit studies

Day care is potentially much cheaper than in-patient care, because of the saving of overheads and staff at night and weekends. However, there is little empirical evidence to support this statement, and certainly the greater length of stay noted above will militate against this.

Gudeman *et al* (1985) recorded a 13.5% reduction in the cost of providing a service for acutely ill patients by changing from a predominantly in-patient service, to one in which nearly half the patients were treated as day patients without requiring in-patient facilities. Glick *et al* (1986) demonstrated that there was no clinical or social advantage to be gained from admission to a day hospital following in-patient stay. Since such treatment was ten times as expensive as out-patient care, it was considered a waste of money. However, neither of these studies were concerned with a typical day hospital admitting acutely ill patients directly from the community – the main focus of this review. Of the community programmes, one was found to be as expensive as in-patient care (Weisbrod *et al*, 1980), and one was found to be cheaper (Hoult, 1986).

Conclusions

Greene & de la Cruz (1981) pointed out that it is far easier to design than execute laboratory-precise studies in social and community psychiatry. They quoted Cowen (1978), who stated that "ultimate conclusions about the effectiveness of community service programmes may . . . have to come about slowly and cumulatively, based on convergent findings from many individually less-than-ideal outcome studies". This is true of day-hospital research.

The first difficulty in evaluating previous research is the varying pattern of day hospitals. Some have taken patients direct from the community as an alternative to in-patient care (Herz *et al*, 1971; Michaux *et al*, 1973; Penk *et al*, 1978; Dick *et al*, 1985). Such studies have had to exclude the majority of patients presenting for admission because they are apparently too ill to be cared for primarily in the day hospital. Others have assessed day-hospital treatment as an adjunct to in-patient care of either short- or medium-term duration (Herz *et al*, 1975; Washburn & Vannicelli, 1976; Blick *et al*, 1986) and found that day care has little to offer in this respect, not least because many patients failed to attend. Finally, the innovation of Gudeman *et al* (1983, 1985) is interesting because all new admissions went directly to the day hospital, but over half were transferred to an intensive-care unit or residential 'inn' for overnight accommodation. The lesson to be learned from studies of community programmes (Fenton *et al*, 1979; Stein & Test, 1980; Hoult, 1986) seems to be that many acutely ill patients can be treated in the community, provided there are adequate staff and recourse to brief in-patient admission.

Thus the idea of demonstrating the 'superiority' of day-hospital treatment over in-patient treatment in a single ideal study is naive, and there are a number of different questions concerning day care that now need to be addressed. Studies of the highest possible standard will be required, but researchers must be realistic in their aims if they are not to fail in the manner of Platt *et al* (1980).

Population

At present, the groups of patients who can feasibly be treated in a day hospital are best defined by exclusion. The largest group of exclusions has always been the category 'too ill', but this criterion depends, in part, on the attitude, number, and availability of staff. Our search for diagnostic or demographic factors to define those patients who cannot be treated in the day hospital has been unrewarding, and it is likely that specific symptoms or behaviour will provide the best indicators as to which patients require in-patient treatment, and which can be treated in the day hospital.

Two studies (Szmukler *et al*, 1981; Creed *et al*, 1989) have found that particular symptoms or behaviour are associated with compulsory admission.

If overactivity, self-neglect, and disturbed sleep are features that require in-patient care (Creed *et al*, 1989), these might be treated rapidly and enable transfer to day care. The suggestion of Michaux *et al* (1973) that psychotic symptoms resolve more quickly among in-patients, but social performance is more satisfactorily regained among day patients, must be studied further, because it might become clear that the two aims of treatment (symptom resolution and improved social performance) require different modes of treatment. It is hoped that further studies will publish details of previous psychiatric history, symptom levels, and social functioning, as well as demographic and diagnostic categories, so that the nature of the population being studied is clear. In addition, if changes in symptoms and social functioning are presented in detail, it should be possible to see which change most under what aspects of treatment. This is a necessary step away from previous studies, which have been content to demonstrate that day care is 'as good as' in-patient treatment.

Possible advantages of day-hospital treatment

This review has indicated that there are a number of studies that indicate better social functioning for those patients treated in a day hospital rather than in an in-patient unit. This may simply reflect the difficulty in ensuring complete random allocation (Wilkinson, 1984). However, the reasons why day care might lead to better social functioning should become the focus of research. The possibilities are several: remaining in the community and/or remaining in contact with the family; specific programmes aimed at good social adjustment; more involvement of nursing staff in the community; and better compliance with medication after discharge. If these are defined, it will be possible to decide whether the apparently beneficial effects of day care can be included in in-patient programmes, or whether the act of admission itself prevents these. The specific value of 24-hour nursing care needs to be evaluated; it may help because in-patient admission is avoided, or it may allow quite a different form of staff–patient relationship that is helpful in improving social adjustment.

Costs of day-hospital treatment

For some acutely ill patients, it is clear that day-hospital treatment can provide a potentially cheaper form of care than in-patient care. However, there are a number of factors to be considered if a day hospital is to accept severely ill patients and retain them throughout a course of treatment. Firstly, it must be adequately staffed with medical, psychology and occupational therapy personnel, as well as nursing staff. Secondly, a neighbouring in-patient unit is necessary to facilitate brief admission for some patients, and some continuity of care is necessary for such transfers. Thirdly, if recovery is slow in a day hospital, this may make it as expensive as brief in-patient care. Finally, according to Rosie's (1987) definition, diagnostic services are needed, so the day hospital must be situated within the general hospital psychiatry unit, not elsewhere as has been suggested (*Lancet*, 1985). This might also help to engender the right staff attitudes, as Fink *et al* (1978) noted that autonomous day hospitals can evolve their own 'exclusion criteria', which reduce the number and type of patients they will accept; this would militate against day hospitals being used for the acutely ill.

Day-hospital treatment should be evaluated as an important treatment in its own right, because of the potential advantages to the patient, and not simply as a cheap alternative to in-patient care. It clearly has much to offer a certain group of patients, but the nature of this group has yet to be defined.

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