Cost of Schizophrenia in a Randomized Trial of Home-Based Treatment

by Thomas Burns and James Raftery

Abstract

A randomized trial of acute psychiatric care was conducted to compare home-based interventions with standard care. The setting of the study was a comprehensive urban psychiatric service in London. Sixteen of the 172 patients in the study had schizophrenia—11 in standard care (SC) and 5 in community care (CC). Care for patients with schizophrenia was, on average, twice as expensive as care for nonschizophrenic patients. This large and statistically significant difference was mainly the result of increased inpatient care, which averaged 33 days for the schizophrenic group compared to 7.6 days for nonschizophrenic patients. There was a modest increase in general practice and outpatient contacts among the schizophrenic patients compared with nonschizophrenic patients, but surprisingly little use of day hospital facilities. The SC schizophrenic care cost nearly twice as much as CC care, but this was not a statistically significant difference. These results suggest that provision of active community services for schizophrenic patients may lead to overall savings in care costs, mainly by a reduction in inpatient stays.

Several studies have compared nonhospital alternative treatment programs in mental illness. Some earlier studies focused on patients with schizophrenia (Pasamanick et al. 1967; Davis et al. 1974; Mosher et al. 1975), whereas subjects in many later studies have been patients with all types of psychiatric diagnoses deemed otherwise "destined for admission" (Langsley et al. 1969; Polak and Kirby 1976; Fenton et al. 1979; Stein and Test 1980; Hoult et al. 1983). All these studies purported to demonstrate the feasibility of delivering such care, in some cases with advantages to the patients in terms of either improved symptom remission or social functioning. Considerable methodological criticism has been leveled at many of the studies and, for some of the earlier ones, the control treatments are either poorly characterized or too dated to act as useful comparisons.

The studies carried out by Fenton et al. (1979), Stein and Test (1980), and Hoult et al. (1983) have generally been accepted as the most methodologically rigorous. They all used randomization of a large cohort at the point of potential admission and excluded only alcoholic and brain-damaged patients (plus severely suicidal and homicidal patients in Fenton et al. 1979). The studies also accepted patients with no social supports. All three studies attempted to measure treatment usage and costs as well as comprehensive measures of outcome. All three populations were predominantly psychotic (> 70%) and Hoult et al. (1983) singled out the 50 percent in their study who had schizophrenia for specific reporting (Hoult and Reynolds 1984).

All three studies found the nonhospital option cheaper and in the Stein and Test (1980) and Hoult et al. (1983) studies they yielded a better clinical outcome. Fenton et al. (1979) failed to demonstrate significant clinical advantages for his community option. Stein and Test (1980) had an intensive treatment package with many resources at their disposal and therefore could not claim a clear cost/outcome superiority as in the case of Hoult et al. (1983).

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Northern European services are predominantly sectorized and comprehensive, with the same team responsible for both inpatient and outpatient care. The teams are often also responsible for assessment and care of patients with mild and transient disorders as well as those with severe, long-term disabilities.

Research targeting the severely mentally ill at the point of potential admission cannot yield information on the impact of altering the style of service in the teams responsible for a truly comprehensive range of patient problems. This study (Burns 1990) was undertaken to address this question.

The St. George's Study

Over a 1-year period (October 1987 to October 1988), all new referrals to three pairs of catchment teams were randomly allocated to either the standard care (SC) or the community care (CC) team. Patients were excluded if they lived outside the catchment area, were under 18 years or over 75 years of age, or had been in touch with the catchment area team during the previous 12 months. One patient was excluded because of insufficient command of English to complete the research interviews. A total of 172 patients (78 SC and 94 CC) entered the study and most were followed up for 1 year with a comprehensive range of assessments at entry, 1, 6, and 12 months. Differences in clinical outcome were, on the whole, unremarkable and will be reported elsewhere. Treatment logs were completed by the teams from which health care costing could be derived.

Although the randomization was essentially successful and the demographic and symptom profiles for the SC and CC populations did not differ significantly, there was a nonsignificant excess of schizophrenic patients in the SC group: 11 out of 78 versus 5 out of 94 in the CC group.

Method

The treatment records completed by the clinical teams were examined, and data for the number and duration of contacts were extracted for each patient for the 12-month study period. Traveling time and status of the caregiver, along with a classification of the content of each session were also recorded and will be reported elsewhere. General practice and local authority social service notes (which had been appropriately flagged at the outset of the study) were similarly examined and all information on number, duration, and type of contact plus resources used was transcribed. Inpatient and day patient care was recorded on a per diem basis with no further detail extracted about care received. Both local and national unit costs were ascertained by the health economist (J.R.). For this presentation national unit cost data were used, based on published 1986–87 data (Her Majesty's Stationery Office 1988) updated to 1988 prices. After detailed analysis of staff mix and duration of visits, a home visit was estimated to cost the same as an outpatient appointment. Use of local unit costs did not affect the pattern of results presented below.

Results

Table 1 shows the mean use and cost, and the range of use of each of the main components of health care service by the schizophrenic patients in the SC and CC treatment groups. The mean total treatment cost for the study sample is also given for reference. The total catchment area health care costs for schizophrenic patients were significantly greater than for nonschizophrenic patients (2,084 pounds vs. 922 pounds, p = 0.0002 by log t test) for the 12 months of the study. There was also a significant difference between schizophrenic and nonschizophrenic patients in each treatment group, but the level of significance is lower (SC: 2,269 pounds vs. 1,062 pounds, p = 0.02 by log t test; and CC: 1,534 pounds vs. 592 pounds, p = 0.014 by log t test). Total mean costs fail to achieve a significant difference between treatment groups for the schizophrenic subsample (SC: 2,269 pounds vs. CC: 1,534 pounds, p = 0.44 by log t test).

Discussion

The requirements that patients could not have been in contact with the team during the previous year tended to reduce the proportion of severely ill patients in the study sample. These are often the patients who are unable to achieve successful discharge from services. The proportion of schizophrenic patients in this study—16 out of 172 (9.3%)—clearly produces a substantial underestimate of their implications for the workload of general teams. In the study, 30 percent of all patients were diagnosed by the clinical teams as suffering from a psychotic disorder, but the researchers' Present State Examination-derived categories (Wing et al. 1974) suggested that the proportion would be greater than this (40%).

Schizophrenic patient care is twice as expensive on average as care for nonschizophrenic patients. While
they averaged twice as many outpatient or home visits as nonschizophrenic patients (11.1 vs. 5.3 per annum), their use of general practitioners (GPs) was only marginally higher (9.1 vs. 7.3 per annum). Within the schizophrenic group there was greater use of the GP by SC than by CC patients. This ran counter to the expectation of the study because the CC teams encouraged GPs to be more involved in prescribing and monitoring medicines. Only one schizophrenic patient in the study (in the CC group) received day hospital care and that was for a period of 8 days. This is a remarkable finding when a total of 908 day hospital days were used in the study (an average of 5.8 per nonschizophrenic patient).

Virtually all of the cost difference between schizophrenic and nonschizophrenic patients was accounted for by the increased use of inpatient beds. Admission is obligatory (at least initially) if a patient is to be treated compulsorily under the Mental Health Act and this was the case for four SC patients and two CC patients. Seven of the 11 SC schizophrenic patients and 3 of the 5 CC group were admitted some time during the 12 months of the study. This is nearly three times the rate of admission in the nonschizophrenic group, and yields a mean of 33 days as an inpatient versus 7.6 days for nonschizophrenic patients. The difference between the SC schizophrenic patients (mean = 38 days) and the CC schizophrenic patients (mean = 22 days) is obviously substantial but just fails to reach statistical significance.

Clearly, therefore, newly referred or re-referred schizophrenic patients treated in an acute service cost much more than nonschizophrenic patients. The twofold cost difference could imply that schizophrenic patients are the most expensive group, but this is not the case. The most expensive schizophrenic patient in this study cost the health service 6,159 pounds, with only three others using more than 3,000 pounds worth of resources during the year (all four in SC). The mean cost of nonschizophrenic patients is mainly dictated by the numerically dominant short-term neurotic and adjustment disorders treated in brief outpatient care. There was, however, a small group of patients who made massive demands on resources. In SC there were 10 nonschizophrenic patients whose care cost more than the 2,274-pound mean for SC schizophrenic patients, and in CC 9 nonschizophrenic patients using more than the CC schizophrenic patient mean of 1,610 pounds. Some of these patients were much more expensive, for example, 13,000, 11,000, and 8,000 pounds for three patients with severe affective disorders.

Costing for specialist psychiatric services (i.e., noncatchment area services) has been omitted from this article because only one schizophrenic patient received such care. While the addition of specialist care costs has little impact on the comparison of overall means, it does highlight the enormous cost of certain uncommon patient groups. The young brain-damaged (15,000 pounds for one patient) and occasional severe neurotic/personality-disordered patient referred for inpatient psychotherapy care (20,000 and 7,000 pounds for two different patients) were particularly outstanding.

These preliminary results from a small group of schizophrenic patients

### Table 1. Mean treatment costs over 1 year for schizophrenic patients

<table>
<thead>
<tr>
<th>Care</th>
<th>Unit cost in pounds</th>
<th>SC (n = 11) Mean (range)</th>
<th>Cost in pounds (range)</th>
<th>CC (n = 5) Mean (range)</th>
<th>Cost in pounds (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatient/home visit</td>
<td>37</td>
<td>8.2 (1-17)</td>
<td>302 (37-624)</td>
<td>8.6 (0-23)</td>
<td>318 (0-844)</td>
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<tr>
<td>General practitioner</td>
<td></td>
<td></td>
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<tr>
<td>consultation</td>
<td>10</td>
<td>10.5 (0-26)</td>
<td>105 (0-360)</td>
<td>6.0 (0-13)</td>
<td>60 (0-130)</td>
</tr>
<tr>
<td>Outpatient days</td>
<td>49</td>
<td>0</td>
<td>0</td>
<td>1.6 (0-8)</td>
<td>78 (0-394)</td>
</tr>
<tr>
<td>Inpatient days</td>
<td>49</td>
<td>38.0 (0-111)</td>
<td>1,862 (0-5,435)</td>
<td>22.0 (0-47)</td>
<td>1,078 (0-2,301)</td>
</tr>
<tr>
<td>Total cost for</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>schizophrenic patients</td>
<td></td>
<td></td>
<td>2,269</td>
<td></td>
<td>1,534</td>
</tr>
<tr>
<td>Total cost for sample</td>
<td></td>
<td></td>
<td>1,232</td>
<td></td>
<td>855</td>
</tr>
</tbody>
</table>

Note.—SC = standard care; CC = community care.
confirmed that they are a very expensive patient group to treat in acute-care psychiatry. Our 1-year followup underestimates schizophrenic patients' demands on resources because these patients are likely to require ongoing supervision and treatment for considerably longer periods than most other patient groups. The numbers in this study are not large enough to be certain that differences in treatment patterns in the SC and CC schizophrenic patients are wholly due to treatment. There was a nonstatistically significant trend toward higher initial symptom scores in the SC psychotic patients (not yet analyzed separately for the schizophrenic patients) which may have dictated the increased inpatient care. This is unlikely, however, because a similar reduction trend in inpatient care was found across the study with no differences in initial patient characteristics. While the differences between treatment groups in the type of care for the schizophrenic patients are not significant, they are clinically striking.

The current costing for inpatient and day patient care in the United Kingdom does not include an adjustment for the value of the hospital buildings, the so-called "capital charges," which was applied beginning in April 1991. Informed opinion suggests that this addition will result in a 50- to 100-percent increase in inpatient unit costs. It is in these inpatient costs that the CC approach demonstrated the greatest gains. The inclusion of capital charging will, therefore, amplify the trend toward cost saving in the SC model examined in this study. A more extensive naturalistic study following schizophrenic patients through the two types of service over a longer period is urgently needed.

References


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