Assertive community treatment of the mentally ill: service model and effectiveness

Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
The health intervention examined in the study was assertive community treatment (ACT) for severely mentally ill patients, namely the North East Mobile Support and Treatment Service (NEMST). The objective of the programme was the ongoing care and rehabilitation of severely mentally ill patients in community settings by a mobile, multidisciplinary team of mental health workers. The key target areas of the rehabilitation programme were core symptoms of mental illness (review of diagnosis and medication compliance, side effects, and efficacy), basic living skills (clinicians encouraging independence through improvement in fundamental living skills), and psychosocial impairments of function (the intervention targets the patients' needs in areas such as accommodation, work, relationships, leisure, finance and legal issues).

Type of intervention
Treatment and rehabilitation.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised severely mentally ill patients aged 18-64 years. Patients had severe psychiatric disability and associated psychosocial impairments.

Setting
The setting was the community. The economic study was carried out in Australia.

Dates to which data relate
Effectiveness and resource use data for the post-intervention period were gathered in the 12 months prior to September 2001. The period during which effectiveness and resource use data for the pre-intervention period were gathered was not reported. The price year was not given.

Source of effectiveness data
The effectiveness data came from a single study.

Link between effectiveness and cost data
The costing was carried out retrospectively on a sub sample of patients included in the effectiveness study.

Study sample
Power calculations, if performed, were not reported. Patients were identified through a retrospective case audit that
was carried out in September 2001. Thus, patients' data were derived from medical records. Patients were identified in two study periods. The control period consisted of the 12 months prior to registration with NEMST following which continuous case management by the NEMST was maintained. The intervention period consisted of the 12 months ending on 11 September 2001. Data for patients who were in the programme for less than 12 months were not included. Overall, 43 patients were identified. There were 24 men (56%) and the mean age of the sample was 38 years (range: 23 - 62 years). The mean illness duration was 15 years (range: 2 - 36 years). The most common diagnostic category was schizophrenia (79%) followed by schizoaffective disorder (19%) and bipolar affective disorder (2%). Other socio-demographic characteristics of the study sample were reported.

Study design
This was a retrospective within-group comparison study, which was carried out in a large urban area. The length of follow-up was one year in the pre-intervention period and one year in the post-intervention period. The time registered with the programme differed: 41% of patients were in the programme for a period of 2-4 years, 27% for a period of less than one year, and 23% for 1-2 years. No patient was lost to follow-up.

Analysis of effectiveness
All patients included in the initial study sample were taken into account in the analysis of effectiveness. The two primary health outcomes were the number of readmissions and the number of readmission days before and after the institution of ACT.

Effectiveness results
There were 24 readmissions (mean number per patient: 0.80 +/- 0.17) in the pre-intervention period and 14 (mean number per patient: 0.47 +/- 0.15) in the post-intervention period. There was a 41.7% decrease in the mean number of admissions after the introduction of the programme, (p=0.052).

The study reported 2,128 readmission days (mean: 70.9 +/- 20.9) in the pre-intervention period and 305 days (mean: 10.2 +/- 3.5) in the post-intervention period. This represented an 85% decrease in the readmission days after the introduction of the programme, (p=0.014).

Clinical conclusions
The effectiveness analysis showed that the introduction of the NEMST reduced the number of readmissions and the readmission days in comparison with standard care.

Measure of benefits used in the economic analysis
Health outcomes were left disaggregated and no summary benefit measure was used in the economic evaluation. In effect, a cost-consequences analysis was carried out.

Direct costs
The perspective adopted in the analysis of costs was not clearly stated. The economic study included bed-day costs, outpatient care costs, and annual costs of the NEMST programme. Unit costs were presented separately from the quantities of resources used for some items. Resource use data were based on a sample of 31 of the 43 patients included in the effectiveness analysis. Costs were obtained from the Finance Manager of Austin Health's Mental Health Clinical Service Unit and the Manager of Community Care Service. The authors assumed that, in the absence of the NEMST, the patients' clinical care would have been undertaken by the Continuing Care case management service and adult inpatient service when admission was required. Discounting was not relevant as costs per patient were incurred over a 12-month period both in the pre- and in the post-intervention phases. The price year was not reported.
Statistical analysis of costs
Costs were treated deterministically.

Indirect Costs
Indirect costs were not included in the economic evaluation.

Currency
Australian dollars (Aus $).

Sensitivity analysis
Sensitivity analyses were not carried out.

Estimated benefits used in the economic analysis
Please refer to the effectiveness results reported above.

Cost results
In the pre-intervention period, the cost of standard outpatient care per annum was Aus $218,000 plus Aus $961,856 for inpatient psychiatric care, making a total of Aus $1,179,856.

In the post-intervention period, the cost of standard outpatient care (NEMST) per annum was Aus $613,000 plus Aus $137,860 for inpatient psychiatric care, making a total of Aus $750,860.

Thus, the potential cost-savings were Aus $428,996 per annum or Aus $13,838 per patient.

Synthesis of costs and benefits
A synthesis of costs and benefits was not relevant since a cost-consequences analysis was carried out.

Authors' conclusions
The authors concluded that ACT significantly reduced bed-day usage and costs in comparison with standard care for severely mentally ill patient in Australia. Furthermore, a trend towards fewer admissions was observed.

CRD COMMENTARY - Selection of comparators
The selection of the comparator, care delivered in the pre-intervention period, was appropriate as it reflects the standard care for severely mentally ill patients in Australia. You should decide whether this is a valid comparator in your own setting.

Validity of estimate of measure of effectiveness
The effectiveness data came from a within-group comparison study, which has the advantage of applying both the comparator and the new intervention to the same sample of patients. Thus, a control group was not required, reducing the potential impact of confounding factors. However, the authors noted that limitations of this method might include selection bias and inability to demonstrate a causal link between exposure (the intervention) and the outcomes (readmissions). It was also noted that it was not possible to identify those aspects of the programme that led to the reduction in bed-day usage. Furthermore, time-dependent confounding variables such as variations in medical practice, evolution of subjects, or variability in the severity of illness could not be controlled due to the design of the study, and this might represent an important limitation of the analysis. As regards the representativeness of the study sample, the authors stated that their patients were similar to those enrolled in other studies, thus making the study sample quite
representative of the patient population. No justification for the size of the sample was provided, and due to the small number of patients included in the analysis, it is unclear whether the results obtained were due to the intervention or to chance. The outcomes used in the analysis were intermediate measures of the impact of the interventions on patients' health. These issues tend to limit the internal validity of the study. However, the authors noted that the naturalistic design represented a strength of the study.

Validity of estimate of measure of benefit
No summary benefit measure was used in the analysis because a cost-consequences analysis was conducted. See the commentary reported above under 'Validity of estimate of measure of effectiveness'.

Validity of estimate of costs
The perspective adopted for the analysis was not clearly stated, but only direct medical costs associated with the programme and hospital admissions were taken into account. The types of patients included in the analysis raise the issue of carer burden, thus the choice of a broader perspective and the inclusion of indirect costs would have been interesting. Unit costs were reported only for the hospital day, and a detailed breakdown of items used in the programme was not reported. Cost estimates were specific to the study setting and the impact of using alternative cost estimates was not investigated. Statistical tests were not carried out. The price year was not reported, which means that reflation exercises in other time periods will be difficult.

Other issues
The authors stated that their findings were consistent with those observed in several studies, although some evaluations had shown that ACT did not reduce bed-day usage. The issue of the generalisability of study results to other settings was not addressed and sensitivity analyses were not performed. This limits the external validity of the study. The analysis referred to severely mentally ill patients and this was reflected in the authors' conclusions.

Implications of the study
The study results support the use of ACT for the management of severely mentally ill patients.

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None stated.

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Other publications of related interest

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