UPBEAT: the impact of a psychogeriatric intervention in VA medical centers

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 intervention was a package of in depth psychogeriatric assessment and mental health care co-ordination by a multidisciplinary team, termed the Unified Psychogeriatric Biopsychosocial Evaluation and Treatment (UPBEAT) programme. The comparator was usual care.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population for screening comprised people over the age of 60 admitted to hospital for inpatient medical or surgical care. The study population for the intervention consisted of those patients identified as having depression, anxiety or alcohol abuse. The majority of the study population from which the sample was drawn was male and retired.

Patients were eligible for screening if they were aged 60 years and older, and were admitted to hospital for a medical or surgical procedure. Patients were ineligible for screening if they had had an inpatient or outpatient psychiatric appointment during the previous 6 months, a diagnosed psychiatric disorder, spinal cord injury/rehabilitation, were from outside the catchment area, had no current address, were admitted from nursing home, had psychosis, dementia or other cognitive impairment, were undergoing chemotherapy, or were in a Hospice. After screening, patients were eligible for inclusion in the study if their scores equalled or exceeded any of the following: Mental Health Inventory (MHI) anxiety, 17; MHI depression, 7; Alcohol Use Disorder Identification Test (AUDIT), 16. Patients who were still hospitalised 30 days after enrolment into the study were excluded as were those patients who died within 60 days of enrolment.

Setting
The setting was secondary care. The economic study was carried out in the USA.

Dates to which data relate
Effectiveness data were collected during the period 31 March 1995 to 31 December 1998. Cost data were collected during the period 31 March 1994 to 31 December 1999. The price year was not reported.

Source of effectiveness data
The effectiveness data were obtained from a single study.

Link between effectiveness and cost data
Prospective costing was carried out on the same sample of patients used in the effectiveness analysis.

**Study sample**
The authors did not state whether power calculations were performed. Patients 60 years and older were approached during their hospital stay; those who agreed to participate were screened for symptoms of depression, anxiety, or alcohol abuse. Thus, the sample appears to have been appropriate for the clinical study question. 5,463 patients were identified and 2,779 declined screening; patients declining consent were most likely to be African American, unemployed and older. A total of 1,687 were screened as eligible for treatment. Of these, 814 patients were randomised to UPBEAT and 873 were assigned to normal care. Ineligible patients were slightly older, had higher incomes and lower education levels than eligible patients.

**Study design**
The study was a randomised controlled trial but the authors did not state the method of randomisation. The study was carried out at 9 centres in the USA. Patients were followed up for 6, 12, and 24 months. The authors did not state whether patients were lost to follow-up and did not report any methods used to mask health care professionals responsible for care, patients or trial research staff to treatment allocation.

**Analysis of effectiveness**
The authors did not state whether the analysis was based on intention to treat analysis or on treatment completers only. The clinical outcomes of the study were as follows:

- Mental Health Inventory (MHI) anxiety and depression subscales;
- Alcohol Use Disorder Identification Test (AUDIT) scores;
- RAND 36-Item Health Survey Short Form (SF-36); and
- mortality.

Except for ethnicity, there were no statistically significant differences in demographic characteristics between the two groups of patients. The distributions of patients with various combinations of anxiety, depression, and alcohol abuse were similar for both treatment groups.

**Effectiveness results**
The effectiveness results were as follows:

- MHI Anxiety and depression scores improved from baseline to 12 months in the UPBEAT group (18.5 to 15.6 and 8.1 to 7.0, respectively) and the usual care group (18.4 to 15.5 and 8.1 to 7.1, respectively); there were no statistically significant differences between UPBEAT and usual care.

- AUDIT scores improved from baseline to 12 months in the UPBEAT group (12.3 to 11.1) and in the usual care group (12.6 to 11.2); there were no statistically significant differences between UPBEAT and usual care.

- Statistically significant improvements from baseline to 12 months were detected in the UPBEAT group and the usual care group on the SF 36 subscales of:
  - Role Physical (UPBEAT group, 23.5 to 35.4 and usual care group, 19.6 to 35.7, both p<0.05);
  - Role Emotional (UPBEAT group, 49.0 to 63.1 and usual care group, 46.2 and 67.1, both p<0.05);
  - Mental Health (UPBEAT group, 59.3 to 66.2 and usual care group, 58.0 to 65.5, both p<0.05); and

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Bodily Pain (UPBEAT group, 45.1 to 54.8 and usual care group, 45.3 to 54.9, both p<0.05); on Vitality in UPBEAT (37.4 to 41.1, p<0.05); and on Social Functioning (57.8 to 66.1, p<0.05) in the usual care group. There were no statistically significant differences between the two groups on any of these outcome measures. There were no statistically significant differences between the two groups in mortality at 12 months.

Clinical conclusions
Mental health and general health status scores improved equally from baseline to 12-month follow-up in the UPBEAT and usual care groups.

Measure of benefits used in the economic analysis
The outcomes were reported in a disaggregated way and as such the study is a cost-consequences analysis.

Direct costs
The resource quantities and costs were reported separately. Direct costs to the hospital were reported. The direct costs included in the analysis were:

Inpatient services (includes bed days of inpatient care in various specialities).
Outpatient services (included all ambulatory services for a single ambulatory care visit).

Visits were defined as unique days in which patients incurred one or more clinic stops. The costs were obtained from a national average cost per service calculated from the VA Cost Distribution Report (published 1999). National average costs were used to control for site-specific differences in per unit costs. Inpatient costs were obtained by multiplying each patient's bed days of care by the relevant cost per day. Outpatient costs were estimated by multiplying the number of clinic stops by the cost per clinic. Discounting was not carried out but was not relevant to the timeframe of the study (12 months).

Statistical analysis of costs
The authors conducted bivariate and multivariate analyses of the cost data.

Indirect Costs
Indirect costs were not included in the analysis and they were not appropriate to the perspective of the study.

Currency
US dollars ($). No currency conversions were reported.

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
Incremental benefits were not calculated. See effectiveness results above.
Cost results
The cost results were as follows:

Use of inpatient services decreased in both groups but the decrease was greatest in the UPBEAT group (3.30 bed days of care, p=0.016).

There was a statistically significant decrease in inpatient costs of $3,027, (p=0.017) per UPBEAT patient during the 12-month period after enrolment compared with usual care.

Use of outpatient services increased in both groups after the enrolment hospitalisation and the increase was greater in the UPBEAT group (6.47 visits and 15.26 clinic stops, p<0.001) compared with usual care.

There was a statistically significant increase in outpatient costs of $1,171, (p<0.001) per UPBEAT patient during the 12-month period after enrolment compared with usual care.

The overall saving with UPBEAT was $1,856 (p=0.156) compared with usual care. Inpatient savings were attributable to fewer bed days of care rather than fewer admissions.

Synthesis of costs and benefits
Benefits and costs were not combined in this study.

Authors' conclusions
UPBEAT achieved an overall saving compared with usual care. UPBEAT appeared to accelerate the transition from inpatient to outpatient care for acute non-psychiatric admissions.

CRD COMMENTARY - Selection of comparators
The comparator was usual care, which seems appropriate for this study. However usual care was not defined and it was not clear if usual care was the same in all study centres or for both medical and surgical patients. It was not clear whether those patients with a positive screen for mental health problems, and allocated to usual care, received care additional to that given in the absence of screening. However, the authors reported that usual care patients did not receive in depth psychogeriatric evaluation. The authors did not report whether there were differences in usual care according to the type of mental health problem identified. You, as a user of this database, should consider whether there is sufficient information to define usual care in the trial and whether it is widely used in your own setting.

Validity of estimate of measure of effectiveness
The authors used a randomised controlled trial design to evaluate treatment of mental health problems with UPBEAT or usual care. The authors did not report the power of the study to detect statistically significant differences in outcomes. The authors did not report sufficient detail to assess the robustness of the study design to minimise bias due to randomisation method or knowledge of treatment allocation. For example knowledge of the mental health status and/or treatment allocation may have influenced the type and level of usual care delivered to patients. If this happened, then the comparison was effectively of UPBEAT versus usual care plus additional care. This could reduce the chance of observing a difference in effectiveness between the treatment groups. The authors noted a number of limitations to the study design:

the study included patients with fewer symptoms and shorter acute episodes of mental health problems, reducing the potential for UPBEAT to improve mental health;

the study enrolled patients with any of 3 different mental health problems which could also have reduced the ability of the trial to detect sub group differences;

the measurement of outcomes in hospital may have captured the impact of transient changes in outcome due to hospitalisation, confounding the impact of the interventions.
The authors used validated measures of mental health and general health status. However, they noted that the instruments used were not sensitive to change or improvements in the risk of relapse, which may differ between the two interventions. The patient groups were comparable at baseline on all measures except ethnicity. The authors used t-test to detect statistically significant differences in outcomes. The authors used a Bonferroni adjustment to take account of multiple comparisons.

**Validity of estimate of measure of benefit**
No summary measure of benefit was defined in this study. No measure of the value of health states or outcomes of the interventions was used.

**Validity of estimate of costs**
Hospital inpatient and outpatient resource use data were collected for all patients enrolled in the study. The authors stated that national average costs were used to control for site-specific differences in per unit costs. Bivariate and multivariate analysis was used to analyse resource use and cost data, controlling for pre-enrolment hospital use. The costs of outpatient pharmaceutical therapy or care provided outside the Veterans Administration (VA) system were not included due to difficulties and high costs of obtaining the data. The authors noted that this might be an important limitation to the study. As depression and anxiety can be effectively managed with appropriate medication, these costs are important and pharmaceutical use may have increased among UPBEAT patients. In addition, elderly patients will receive a significant amount of care from non VA sources. Some additional costs of the UPBEAT programme (e.g. improved access to legal care, home services) were borne directly by the study participants.

**Other issues**
The authors noted that patients who declined to take part in the study were likely to be older, African American and unemployed and thus it may not be possible to generalise the results to the entire elderly population. The authors also noted that UPBEAT had the greatest impact on patients with high level of resource use in the 12 months prior to enrolment. This group may form a target group for the intervention.

**Implications of the study**
The authors concluded that patients with undiagnosed and previously untreated psychiatric conditions benefit from UPBEAT co-ordinated care management.

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