Are supplementary services provided during methadone maintenance really cost-effective

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 study examined the provision of different levels of support services to supplement a methadone maintenance programme, during a 24-week study for methadone-maintained opiate users. The study also examined the longer term-benefits of the strategies. Three strategies were considered: provision of methadone treatment with minimal counselling; provision of counselling with methadone treatment; and provision of enhanced counselling with methadone treatment. The latter offered the highest level of support, involving seven counselling sessions per week and extended on-site medical, psychiatric, employment and family therapy services.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised methadone-maintained opiate users.

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

Dates to which data relate
The effectiveness and resource use data were gathered from patients admitted to the study institution during 1991. The cost data corresponded to 1992 and 1993 prices.

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

Link between effectiveness and cost data
The costing was performed prospectively on the same patient sample as that used in the effectiveness analysis.

Study sample
Power calculations were not used to determine the sample size. The study sample consisted of 100 patients randomly allocated to receive either minimum methadone services (n=31), methadone plus counselling (n=36) or enhanced methadone services (n=33). These groups had a mean age of 42.3 (standard deviation, SD=5.1), 41.8 (SD=5.6) and 43.4 (SD=7.4) years, respectively.
Study design
The study took the form of a randomised controlled trial carried out in a single centre. The duration of the follow-up was 6 months after the 24-week trial. No loss to follow-up was reported.

Analysis of effectiveness
It was unclear if the analysis of effectiveness was based on intention to treat or on treatment completers only. The outcome measures were heroin and cocaine abstinence rate, medical needs, welfare dependency, days of illegal activity, illegal income, psychological problems, drug use, and employment at the end of the 24-week study and 6-month follow-up period, after the supplemental services were stopped. The measurement of patient outcomes was based on the addiction severity index and urine screening. Study groups were found to be comparable in terms of demographic and socioeconomic features, and in terms of heroin use.

Effectiveness results
The abstinence rates at the end of the 24-week study were 30% for patients receiving minimum methadone services, 55% for patients receiving counselling plus methadone treatment, and 68% for patients receiving enhanced methadone services. The corresponding values at the 6-month follow-up were 29, 47 and 49%, respectively.

At the end of the 24-week study, the enhanced group had significantly better outcomes in terms of decreased medical needs, welfare dependency, days of illegal activity, illegal income, psychological problems, drug use and increased employment, compared with the counselling plus methadone and minimum counselling groups.

It was reported that these differences had vanished at the 6-month follow-up, except for the abstinence rates, which were still significantly different across groups (F=4.05, d.f.=2, 97, p=0.02).

Clinical conclusions
Despite the fact that enhanced services produced better clinical outcomes at 24 weeks, only the rates of heroin abstinence remained significantly higher at the end of one year. Minimal levels of service involving methadone medication alone produced fewer abstinent clients for the cost incurred.

Measure of benefits used in the economic analysis
The measures of benefits were heroin and cocaine abstinence rates at the end of the 6-month follow-up, based on the addiction severity index and urine screening.

Direct costs
The costs were not discounted due to the 12-month timeframe adopted for the cost analysis. The quantities of resource use were reported in full and separately from the costs. The cost items were reported separately. The cost analysis covered the costs of physician, nurse, the various counselling methods, and methadone for the initial 24-week trial period; plus the cost of the 6-month follow-up service for methadone plus counselling. The perspective adopted in the cost analysis was unclear. The sources of resource use data were: for the average time spent by professional staff conducting the various service activities, a panel of drug treatment specialists; and for the number and type of services used by the clients, a weekly administered Treatment Services Review completed by the study participants. The cost data for the salaries and benefits of professional staff were obtained from a report addressing the 1993 values. The price year was 1992 to 1993. The cost analysis did not cover the costs of program operation and overheads.

Statistical analysis of costs
The cost results were reported in terms of the mean, along with SD, and median.

Indirect Costs
Indirect costs were not considered.

**Currency**
US dollars ($)

**Sensitivity analysis**
Not conducted.

**Estimated benefits used in the economic analysis**
The abstinence rates at the end of the 6-month follow-up were 29% for patients receiving minimum methadone services, 47% for patients receiving counselling plus methadone treatment, and 49% for patients receiving enhanced methadone services; there was a significant different between groups (F=4.05, d.f.=2, 97, p=0.02).

**Cost results**
The mean total cost at 24 weeks was $2,471.09 (SD=$2,479.02) for patients receiving minimal methadone services, $2,315.33 (SD=$1,550.07) for patients receiving counselling plus methadone treatment, and $3,414.03 (SD=$2,308.49) for patients receiving enhanced methadone services.

**Synthesis of costs and benefits**
The average and incremental annual costs, i.e. the cost at 24 weeks plus the cost of the 6-month follow-up period, per abstinent client were calculated as cost-effectiveness measures.

The average cost-effectiveness ratios were $16,485 for patients receiving minimum methadone services, $9,804 for patients receiving counselling plus methadone treatment, and $11,818 for patients receiving enhanced methadone services.

The incremental cost-effectiveness ratio for the counselling plus methadone treatment strategy, relative to the minimum approach, was $2,289 per additional abstinent client. The corresponding value for the enhanced strategy, relative to the counselling plus methadone treatment strategy, was $22,410.

**Authors’ conclusions**
The authors suggest that the provision of large amounts of support to methadone-maintained clients is not cost-effective, whereas moderate amounts of support are better than minimal amounts. As funding for these programmes reduce, these findings suggest a floor below which supplementary support should not fall.

**CRD COMMENTARY - Selection of comparators**
The reason for the choice of the comparator was clear and was justified by the authors as common practice. You, as a user of this database, should decide if these programmes are relevant in your setting.

**Validity of estimate of measure of benefit**
The estimates of benefit were based on a clinical trial and were supported by appropriate statistical analysis, thus increasing the internal validity of the study. However, the authors themselves stated that other measures of effectiveness, such as the percentage reduction in drug use, might have been more sensitive indicators of programme success.

**Validity of estimate of costs**
The quantities of resource use were systematically reported separately from the costs, and were based on the data. Statistical analyses of costs were performed. The authors suggest that "time and motion studies might provide more reliable measures of how drug treatment staff spend their time".

**Other issues**
The issue of generalisability to other settings or countries was not addressed clearly, although the authors did report the findings of other studies for comparison purposes. The short follow-up period may have been insufficient to fully capture the scale of costs and effects associated with each strategy. It would have been interesting to investigate the benefits of the different programmes in terms of decreased medical needs, welfare dependency, days of illegal activity, illegal income, psychological problems, drug use, and increased employment, in a longer period than one year.

**Implications of the study**
Larger studies should be undertaken to determine whether higher medical care costs persist and represent true cost offsets for more intensive programmes.

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