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Evidence Briefing for NHS Bradford and Airedale

Alternatives to inpatient admission for adolescents with eating disorders

- NHS Bradford and Airedale currently commissions out of area placements involving long-term inpatient admission for a small number of adolescents with eating disorders. The basic cost of these placements varies from £454 to £750 per bed–day.
- Two recent systematic reviews have evaluated the evidence for alternatives to inpatient admission for children and young people with mental health conditions. A number of different service models have been evaluated but the evidence base provides limited guidance for decision making.
- Probably the best evidence in relation to eating disorders comes from the recent TOuCAN trial. This randomised controlled trial compared generic outpatient services, specialist outpatient services and inpatient admission for adolescents (aged 12–18) diagnosed with anorexia nervosa. The trial found no differences in clinical outcomes between groups at follow-up after 1 and 2 years.
- The economic evaluation of the TOuCAN trial supported the provision of specialist outpatient services on cost-effectiveness grounds. In addition, patients and carers valued the perceived expertise of specialist services and access to dietetic therapy, which was not always available through generic services.
- The findings of this trial imply that it may be possible to provide services for adolescents with anorexia nervosa in a specialist outpatient setting in a cost-effective manner without loss of clinical effectiveness.
- No relevant evidence was found for young people with other eating disorders and it is uncertain whether findings for patients with anorexia nervosa also apply to those with bulimia nervosa or binge eating disorder.
- The conclusions that can be drawn about the effectiveness of individual interventions that might be used within a specialist outpatient service are limited by weaknesses in the evidence base (few trials with generally small samples), the methodological quality of the available systematic reviews or both. Furthermore, it is difficult to evaluate the effectiveness of individual components separately from the programme of care as a whole.
- The magnitude of any possible clinical or cost benefits from expanding outpatient services and/or reducing out of area inpatient placements in Bradford and Airedale is uncertain.

This evidence briefing has been produced for NHS Bradford and Airedale by the Centre for Reviews and Dissemination as part of TRiP-LaB (Translating Research into Practice in Leeds and Bradford).

What is the current situation?

NHS Bradford and Airedale commissions out of area placements for a small number of young people with eating disorders. During 2008–9 and 2009–10 to date, ten patients have been admitted to specialist inpatient units for a total of 1,647 bed–days at a basic cost ranging from £454 to £750 per day.

How was this briefing produced?

The briefing is mainly based on existing sources of synthesised and quality-assessed evidence, primarily systematic reviews. The main sources are:

- Systematic reviews performed to inform the NICE guidance on eating disorders
- UK HTA Programme reports (clinical trials, systematic reviews and economic evaluations)
- CRD databases: DARE (systematic reviews), NHS EED (economic evaluations) and HTA database (health technology assessment reports)
- Cochrane library database of systematic reviews.

In the absence of evidence from such sources we consider other sources of evidence (for example, single randomised trials) but we have not systematically reviewed the primary research literature. The evidence has been evaluated for overall strength (using a standard method), clinical significance of effects and applicability to Bradford and Airedale.

What is the evidence base for clinical effectiveness of inpatient admission*?

Evidence for inpatient admission specifically for adolescents with eating disorders is limited. Most of the systematic reviews identified evaluated specific types of intervention or treatment approaches without reference to setting. Some relevant evidence comes from the TOuCAN trial[1] as discussed below. Descriptions of inpatient programmes suggest that the length of admission is variable[2]; there appears to be no evidence to estimate an optimum length of stay. Evaluation of length of stay is related to the outcome measures used to evaluate the 'success' of treatment. The NICE guideline on eating disorders indicates primary outcome measures to be weight adjusted for height in anorexia nervosa; frequency of binge eating and purging and abstinence rates for bulimia nervosa; and frequency of binge eating in binge eating disorder.[3] Interview-based measures such as the Morgan–Russell Average Outcome Scale and Health of the Nation Outcome Scale for Children and Adolescents provide broad measures of severity and are often used in research.

There is a larger evidence base for inpatient admission across all types of mental health condition. For ethical and practical reasons, most of this evidence comes from observational studies. A systematic review of this evidence[4] is quoted in a number of sources. This review found that psychiatric hospitalisation is often beneficial but it dates back to 1990

* Throughout this briefing, inpatient admission means planned admission aimed at promoting recovery rather than for treatment of acute medical problems.

and its relevance to current practice is therefore uncertain.

Evidence for the clinical effectiveness and costs of inpatient treatment in the NHS comes from the UK national Child and Young Persons Inpatient Evaluation (CHYPIE) study.[5] This prospective cohort study enrolled 150 patients (16 with eating disorders). There was a statistically and clinically significant improvement in health (measured on the Children's Global Assessment Scale) from admission to discharge and this improvement was sustained at follow-up 1 year after discharge. The subgroup with eating disorders showed a similar or greater improvement compared with the cohort as a whole. The mean length of admission was 116 days and mean cost £24,100 (separate data not reported for eating disorders). This study was of reasonable quality and the conclusions appear valid but its value is limited by the lack of a control group and the small number of patients with eating disorders.

The potential benefits of inpatient admission for some patients need to be weighed against evidence that hospitalisation is a major predictor of poor outcome[6] and the trend of policy towards providing treatment in the least restrictive setting. Potential benefits include physical health monitoring, access to intensive therapy and a range of therapeutic expertise, and respite for family members or other carers.[2]

What is the evidence base for alternatives to inpatient admission?

Two recent systematic reviews have evaluated the evidence for alternatives to inpatient admission for children and young people requiring care beyond the scope of generic outpatient services. These reviews included people with any kind of mental health condition and would be expected to have identified the evidence relevant to eating disorders. A review commissioned by the NIHR Service Delivery and Organisation (SDO) Programme[7] included studies of any design, while a more recent Cochrane review by the same authors[8] was restricted to randomised controlled trials (RCTs). The authors concluded that overall, the evidence provided very little guidance for the development of services.

The alternatives to inpatient treatment evaluated in the two reviews were classified as multisystemic therapy at home; day hospital (intensive day treatment); case management; specialist outpatient services; home treatment; family preservation services; therapeutic foster care; and services provided in residential care.

The SDO systematic review found one non-randomised trial comparing intensive day treatment with inpatient treatment; this study involved adolescents with substance abuse disorders, not eating disorders, and the results were inconclusive. Evaluations of intensive day treatment for adults with eating disorders in the UK[9] and Germany[10] indicated that this type of treatment can improve symptoms but no relevant systematic reviews or controlled studies were found.

The only alternative to inpatient admission that has been evaluated for young people with eating disorders is specialist outpatient services. The SDO systematic review identified one RCT (the TOuCAN trial) and two small case series. The case series are not considered here

because they do not provide useful evidence of effectiveness in the absence of a comparison group.

None of the studies in these systematic reviews covered patients with eating disorders other than anorexia nervosa. A technology assessment company in the USA has recently published a report on inpatient treatment for bulimia nervosa[11], but this does not appear to be publicly available.

Given these limitations, the best available evidence source appears to be the TOuCAN (Treatment Outcome for Child and adolescent Anorexia Nervosa) trial, which was designed to compare generic outpatient services, specialist outpatient services and inpatient admission for adolescents with anorexia nervosa in England. This trial has published results on clinical effectiveness of these different service types[1] together with an economic evaluation[12] and an evaluation of user satisfaction.[13]

What is the evidence from the TOuCAN trial?

Very briefly, adolescents (aged 12–18) with anorexia nervosa were randomly assigned to receive inpatient treatment in generic CAMHS units with substantial experience of eating disorders (57 patients), specialised outpatient treatment (55 patients) or treatment as usual in general community CAMHS (55 patients).[1] The primary outcome was improvement on the Morgan–Russell Average Outcome Scale, a measure frequently used in anorexia nervosa research. The treatment phase of the trial lasted for 6 months.

Participants were assessed at the start of the trial (baseline) and after 1 and 2 years. By 1 year, all three groups showed considerable improvement from baseline and further improvement was seen at 2 years. Differences between treatment groups were small and not statistically significant (i.e., they could be caused by chance). Two years after the start of the trial, 33% of participants had fully recovered but 27% still had anorexia nervosa. Of the 57 patients allocated to inpatient treatment, more than half (29) did not actually receive it. Some patients allocated to CAMHS treatment subsequently required inpatient treatment and this was associated with a poor outcome.

The evidence from this trial thus indicates that all three types of service can benefit adolescents with anorexia nervosa. The trial does not provide evidence of differences in effectiveness between treatments. This was a well conducted randomised trial and the findings are likely to be reliable. However, it should be noted that inpatient treatment was given by generic CAMHS inpatient units and not by specialist eating disorder units. This means that the outcomes may not be fully representative of those achieved in specialist units.

What is the evidence base for particular interventions in specialist outpatient services?

The main interventions used in the specialised outpatient group in the TOuCAN trial were an initial motivational interview; individual cognitive–behavioural therapy (CBT) plus parental feedback; parental counselling with the patient; dietary therapy; and multi-modal feedback.[1]

Additional evidence for the effectiveness of some of these interventions is available from systematic reviews.[3, 14, 15] The evidence base appears to be relatively strongest for family therapy, particularly the Maudsley approach, for anorexia nervosa and specialised CBT (CBT-BN) for bulimia nervosa. However, the conclusions that can be drawn from systematic reviews are limited by weaknesses in the evidence base (few trials with generally small samples), the methodological quality of the available reviews or both. Furthermore, in a complex intervention such as this, it is difficult to evaluate the effectiveness of individual components separately from the programme of care as a whole.

What other evidence on effectiveness is available?

Earlier systematic reviews comparing inpatient and outpatient care for eating disorders have been published but the findings were inconclusive because of lack of evidence.[16, 17] Numerous systematic reviews have evaluated the effectiveness of specific interventions and treatment approaches. These are not considered in depth here because this briefing is concerned with alternatives to inpatient admission. An example of a systematic review evaluating a wide range of interventions across all types of eating disorder is the report produced for the Agency for Healthcare Research and Quality in the USA by Berkman et al. (2006).[18]

What is the evidence base for cost-effectiveness?

The economic evaluation of the TOuCAN trial[12] found that over 2 years specialist outpatient treatment (mean total cost per patient £26,738) was less costly than inpatient (£34,531) or generic outpatient (£40,794) treatment. The differences in cost were not statistically significant. Exploration of the uncertainty surrounding costs and effects indicated that specialist outpatient treatment had the highest probability of being cost-effective. The authors concluded that provision of specialist outpatient services for adolescents with anorexia nervosa is supported on cost-effectiveness grounds. The study used valid methodology and the authors' conclusions are likely to be reliable.

Other economic evaluations were located in the NHS EED database. An intensive day programme for people with severe anorexia nervosa in Leicester was evaluated in 2002 and the authors concluded that the programme had potential to facilitate the management of severely ill patients as day patients.[9] However, the age range of participants in this study was not stated. A study in the USA[19] evaluated usual care compared with a more intensive strategy involving a longer period of inpatient treatment. The authors appeared to recommend the more intensive strategy. The generalisability of this study to adolescents and to settings outside the USA is uncertain.

Limited evidence on cost-effectiveness was found from the available systematic reviews. The 2001 review by Meads et al. reported that for anorexia nervosa the mean

cost per inpatient episode in different health authorities ranged from £18,924 to £32,636 at 1998 prices.[16] The mean number of outpatient sessions per year varied from five to 13 and the mean cost per outpatient session ranged from £60 to £90. The authors estimated the cost of inpatient treatment to be approximately ten times higher than that of outpatient treatment in the UK. Again these data are limited by not being specific to treatment of adolescents.

The NICE Guideline Development Group on eating disorders did not find enough evidence to allow an economic model of cost-effectiveness of inpatient versus outpatient management of anorexia nervosa to be developed.[3]

What are the potential implications for NHS Bradford and Airedale?

The findings of the TOuCAN trial imply that it may be possible to provide services currently provided by inpatient admission in a specialist outpatient setting. This could be done in a cost-effective manner and without loss of clinical effectiveness. The user satisfaction survey performed as part of the trial found that young people and carers valued the expertise of specialist services and the ability to form specific therapeutic relationships.[13] The availability of dietetic therapy was also highly valued and such therapy is easier to access through specialist services than through generic CAMHS with fewer patients with eating disorders.

The TOuCAN user satisfaction survey found that most parents (45/47) had positive expectations of inpatient treatment. This might suggest that use of inpatient facilities could be driven in part by parents' views. However, a focus group convened during development of the NICE guideline on eating disorders indicated that they favoured outreach and community services over inpatient services.[3] Intensive day treatment (or local short-term admission) could offer families/carers an element of respite without the disruption associated with out-of-area inpatient admission.

Most of the evidence found relates to patients with anorexia nervosa and it is uncertain whether the findings also apply to those with bulimia nervosa or binge eating disorder.

The available evidence offers limited guidance on which specific interventions to include within specialist outpatient services. The magnitude of any clinical or cost benefits that may be obtained by expanding outpatient or day services and/or limiting inpatient admissions is uncertain. As recommended by the authors of the Cochrane systematic review, there is a need to improve the evidence base by prospective comparative auditing of outcomes if further RCTs are not possible.[8]

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