A dismantling study of assertive outreach services: comparing activity and outcomes following replacement with the FACT model

Mike Firn · Keelyjo Hindhaugh · Dieneke Hubbeling · Gwyn Davies · Ben Jones · Sarah Jane White

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Abstract

Purpose Financial constraints and some disappointing research evaluations have seen English assertive outreach (AO) teams subject to remodelling, decommissioning and integration into standard care. We tested a specific alternative model of integrating the AO function from two AO teams into six standard community mental health teams (CMHT). The Flexible Assertive Community Treatment model (FACT) was adopted from the Netherlands (Van Veldhuizen, Commun Mental Health J 43(4):421–433, 2007; Bond and Drake, Commun Mental Health J 43(4):435–438, 2007). We aimed to demonstrate non-inferiority in clinical effectiveness and thereby show cost efficiencies associated with FACT.

Methods Outcomes were compared in a mirror-image study of the 12 months periods pre- and post-service change with eligible individuals from the AO teams’ caseloads (n = 112) acting as their own controls. We also conducted a cost-consequence analysis of the changes. Outcome data regarding admissions, use of crisis and home treatment, frequency of contact and DNA rate were extracted from the electronic patient record.

Results The results show AO patients (n = 112) transferred to standard CMHTs with FACT had significantly fewer admissions and a halving of bed use (21 fewer admission and 2,394 fewer occupied bed days) whilst being in receipt of a less intensive service (2,979 fewer contacts). This was offset by significantly poorer engagement but not by increased use of crisis and home treatment services.

Conclusions Enhancing multi-disciplinary CMHTs with FACT provides a clinically effective alternative to AO teams. FACT offers a cost-effective model compared to AO.

Keywords Assertive · Outreach · Community · Treatment · Schizophrenia

Background

Academic and clinical opinion is moving away from supporting stand alone, specialised assertive outreach (AO) teams in England [3]. English RCT outcome trials have failed to demonstrate effectiveness of AO teams in reducing bed use or clinical outcomes [4, 5]. English studies, however, show that AO teams are remarkably effective at engaging with chaotic individuals who have engaged poorly with other services [6–8].

A local review of community mental health services in 2010 resulted in the integration of the AO function from two AO teams into six standard community mental health teams (CMHT). We adopted the Flexible Assertive Community Treatment (FACT) model of care from the Netherlands [1] into CMHTs. FACT retains the supportive and coordinated elements of AO working in managing the care of patients who have higher need and service use. In this model, care is delivered by one team for the sector with approximately 90 % receiving recovery-oriented individual...
case management in a multi-disciplinary team with a flexible 10% receiving an AO level of service according to need from the same team using AO principles of shared caseload, daily planning and frequent visits. Service users move between the two levels according to need with a simple team-based decision. They may receive an AO level of care for a few weeks, a few months or longer. The key differences in service provision between specialised AO and CMHT with FACT are summarised in Table 1.

In the Netherlands, doubts about the affordability and fit of the orthodox AO model in more rural populations resulted in the widespread implementation of the FACT model [1]. There are now in excess of 120 FACT teams in the Netherlands and a further 30 orthodox ACT teams in urban centres. Established Dutch FACT services show regular movement of patients between the two levels of care, extending beyond patients who have typically been seen as requiring longer term AO. Indeed, FACT experience suggests that up to 80% of severely mentally ill patients treated in secondary care may require an episode of higher level care from the team at some point during a 2-year period [1, 2]. In this way, the notion of AO as an intensive and time-unlimited service required by only a minority of patients with long-term mental health problems is rejected. Published observational studies of FACT services in the Netherlands suggested clinical improvement compared to care as usual in remission rates [9].

We asked the six CMHTs to adopt the following FACT practices:

1. The judicious use of two levels of care in the planning and delivery of the service
   a. Individual case management (CM)—(care coordination) for the majority of patients as is standard practice for typical CMHT working
   b. FACT—AO-equivalent care for the minority according to current need. FACT uses the resources of the whole team to provide a flexible period of more intensive contact and support

2. Planning the delivery and allocation of resources for the intensive level of FACT care through a daily morning meeting involving the whole team. In particular, maintaining frequent contact and intervention through adopting the AO style of engagement and sharing the schedule of visits between team members, including non-traditionally qualified support staff for the duration of FACT care

3. Any team member can nominate a patient from their caseload for the FACT level of care. People who might require FACT level of care include: patients who currently require an intensity of care and frequency of contact beyond CM, typically greater than weekly contact; and unstable patients at risk of relapse, neglect and readmission but for whom Crisis Resolution Home Treatment Team (CRHTT) involvement is not yet required or established. The guiding principle for the team determining escalation to FACT is by asking the question “Will FACT add value to the quality, coordination and safety of care through shared team care and daily handover?”

Aims and hypotheses

We wanted to evaluate whether patients would be disadvantaged by dismantling two specialised teams and offering an alternative integrated model. We anticipated that contact rates would fall as caseloads increased. Nevertheless, we aimed to demonstrate non-inferiority in clinical

<table>
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effectiveness and thereby show cost efficiencies for CMHT with FACT in a real life observational study.

Community-case management, i.e. medical and social care provided by a multidisciplinary team of mental health professionals in and outside of hospital is generally considered the best approach for patients with chronic psychotic disorders, such as schizophrenia [10]. However, it is less clear how this should be done in practice. A recent randomised controlled trial by Killaspy and colleagues did not show any differences in clinical outcome or bed use between AO and less intensive care provided by a CMHT [4, 5]. They rightly question the return on investment for high-cost specialist AO teams given that the only benefits shown for AO in this study were improved patient engagement and satisfaction with services. Studies in AO have repeatedly tested new specialist services replacing standard services but not the reverse. One notable exception to this is the seminal study by Stein and Test [11] who continued to follow up patients beyond the life of the experimental service. They demonstrated significant reductions in hospitalisation and improved clinical outcomes for the 14 months that they offered assertive community treatment when compared to standard care of inpatient, partial hospitalisation and outpatient treatment. The follow-up period, when patients had been transferred back to standard care, showed striking declines in outcomes for re-hospitalisation, symptomatology and employment status. Given the significant advances in standard care from community-based mental health services, we questioned whether such a decline would still be observed.

Bond and Drake observe in their commentary on FACT [2] that the Dutch experience gives further credence to the abolition of the original notion of AO as a time-unlimited service. Indeed, a common criticism of AO teams is that they retain patients in treatment beyond the period for which they require an intensive service, which restricts access for standard care patients who require intensive input. We wanted to test the extent to which AO patients occupied the two care levels once transferred to standard care when the CMHT was able to make flexible decisions on offering either standard case management or the more intensive FACT level of care through its own decisions and resources.

The primary comparative analysis comprised admission and hospital bed use or equivalent referral episodes for acute care in CRHTTs, as proxies for clinical outcomes. Service use measures of process comprised face-to-face and telephone contacts and missed appointments.

Secondary qualitative outcome measures comprised a comparison of routinely collected social inclusion data on housing and employment status across the two treatment modality periods.

Methods

Setting

The localities studied were the two suburban outer South West London Boroughs of Merton and Sutton. Each had a standard mix of mental health services covering community and inpatient care.

Dedicated AO was established in the localities in January 2002 with the transfer of staff and patients to an integrated AO function using FACT within CMHT occurring in November and December 2010. CRHTTs were established in 2003 for patients at more immediate risk of admission to hospital.

Sample

All the patients on the caseloads of the two AO teams were followed up for a year after the transfer. Outcomes were compared in a mirror-image study of the 12-month periods pre- and post-service change with individuals acting as their own controls. Patients were included for comparative analysis if they had received care from one of two AO teams for the 1 year pre-service change and then 1 year of CMHT with FACT (Fig. 1). Patients discharged to primary care or services other than CMHT, who died, or who moved out-of-area in the follow-up period were excluded from the comparative analysis but reported separately as of interest to outcome.
Data

Data were taken from the electronic patient record system retrospectively. The following data was extracted: socio-demographic characteristics, social inclusion markers, admissions, bed days (with and excluding leave), use of CRHTTs, number of contacts (% of which were face-to-face), missed appointments. The movement between the two levels of care of patients was collated monthly at team level. No patients were interviewed and no data were missing for the comparative analysis with the exception of some social inclusion data on accommodation and employment status.

Statistical analysis

Descriptive statistics are presented using frequency and percentage for binary variables, mean and standard deviation (SD) for normally distributed continuous variables and median with lower quartile (LQR) and upper quartile (UQR) values for non-normally distributed or discrete variables. Binary variables, admitted to hospital or not and used CRHTTs or not, were compared between the two 1-year periods using McNemar’s test. Where significant skew was present in the scale variables, for example number of admissions, Wilcoxon Signed ranks test was used, otherwise paired \( t \) tests were used. All analysis was conducted using IBM SPSS Statistics v19 for Windows.

Results

Client characteristics

112 Patients with severe mental illness received care for 1 year from an AO team and then 1 year from a CMHT with FACT. The sample has a mean age of 44 years and 4 months, ranging from 24 to 71 years. Two-thirds of patients, 78, were male, and two-thirds white, 79. 18 (16 %) were black, 10 (9 %) were Asian and 5 (4 %) of other and mixed ethnic origin. One-third (37 patients) had remained with an AO team from inception in January 2002 to close on 31st October 2010. Mean duration of AO care for study patients was 6 years, and ranged from 1 year to the teams’ start date (8 years and 9 months).

23 Patients were with AO teams at the time of closure but did not stay for 12 months in CMHT care for comparative analysis. Of these, six patients were stable enough for transfer to primary care and six moved out of the catchment area. Four patients died during the follow-up period. All were from natural causes (cerebro-vascular accident (CVA), cancer, and broncho-pneumonia subsequent to CVA) and unrelated to the change in service provision. A further five patients moved to the care of social care teams because of out-of-area residential housing placements and two to the care of forensic services.

Primary outcomes

Clinical outcomes for the 112 patients in the follow-up period in CMHT with FACT care showed 21 fewer admissions (38 compared to 59 in AO) and 17 fewer individuals subject to admission within a year [25 (22 %) compared to 42 (38 %) in AO, \( p = 0.014 \)]. The overall use of beds in CMHT with FACT (2,379 days) is 50 % of those used in the preceding year with AO (4,773 days) comprising 2,394 fewer occupied bed days used in the follow-up year. For the 55 patients who were admitted in at least one of the two periods there was a significant reduction in median number of occupied bed days, including and excluding periods of hospital leave, \( p = 0.008 \) and \( p = 0.010 \), respectively.

There was no significant change in the use of alternatives to admission in the shape of CRHTT referral episodes (69 episodes in AO and 74 in CMHT with FACT) or total days in CRHTT (868 days in AO and 747 days in CMHT with FACT). For those patients using CRHTTs in either of the two periods \( (n = 41) \) there was a non-significant change in the number of CRHTT days, \( p = 0.378 \). During the year in AO, patients had a total of 10,113 meaningful contacts with staff with a range per individual patient from 21 to 234. For CMHT with FACT, higher caseloads for clinicians produced an expected fall in contacts to a total of 7,134. However, the range per patient spanned 4–235 contacts per year with the upper range demonstrating that, where necessary, patients still had access to almost daily contact in a working week. Mean contacts per week fell from 1.75 per week with AO to 1.23 per week for CMHT with FACT. Mean number of contacts per patients fell from 90.3 (SD = 50.5) in AO to 63.7 (SD = 42.7) in FACT, \( p < 0.001 \). There was no significant change in the mean percentage of these contacts being delivered face-to-face, 84.1 % (SD = 11.4) to 82.9 % (SD = 12.8), \( p = 0.364 \). However, there was a significant increase in the DNA rate, rising from a median of 5.4 % during AO to 7.9 % in FACT, \( p = 0.002 \) (Table 2).

Secondary outcome comparative analysis

There were no marked changes when we looked at social inclusion markers across the two periods including employment, education and training and accommodation status (homelessness, temporary, supported and independent accommodation) (Table 3).
All CMHT patients were able to move between the two levels of care according to need. CMHTs collected month-end snapshot returns on caseload between patients receiving the enhanced FACT level of care or standard CM. The six locality CMHTs had a mean total caseload over the 1-year period of 1,572 individuals (averaging 262 patients each) comprising patients with a wide range of needs. Teams averaged 11% of the caseload receiving FACT care at any one time over the follow-up period. The proportion of patients previously managed by the specialist AO teams receiving FACT care dwindled over time so that only 65 of the original 112 received the higher level of care in the 12th month. The total transitions stepping up to FACT in the 12 months was 212 and stepping down 187, illustrating flexible individualised levels of support.

### Discussion

Our aim to achieve a saving by a service change which was clinically non-inferior was exceeded. CMHT with FACT care was able to deliver better clinical outcomes through fewer visits from teams with higher patient-to-staff ratios. We conducted a cost-consequence analysis of the changes to equate this in financial terms. Costs associated with reductions in bed use, face-to-face contacts and staffing changes amounted to £1.1 million overall using national mean reference costs from the Personal Social Service Research Unit [12]. These notional productivity and efficiency savings amount to £747,864 in bed days and £277,920 in contacts. £72,000 was actually saved and released as cash resulting from the closure of the AO teams. This modest saving demonstrates that the majority of the AO team staffing resource followed the patients into CMHTs.

As a model for integration FACT provides CMHTs with robust procedures for managing a spectrum of need including patients who require periods of AO-equivalent care. FACT incorporates best practice from AO into CMHTs through the judicious use of two levels of care, whole team working, and daily coordination and allocation of care for patients in periods of higher need.

Staff reported anecdotally that many patients had previously been retained in AO unnecessarily and that new
CMHT patients currently in need could now benefit from flexible access to higher levels of care from within the CMHT resources. Staff clearly described the benefits of daily team meetings and access to shared care for care coordination, communication, accountability and staff support.

These results strongly suggest that specialist AO teams appear to provide prolonged intensive treatment unnecessarily. Care levels can and should be titrated more flexibly. FACT allows access to periods of AO-equivalent care for a wider CMHT population according to current need rather than historical team allocation.

**Limitations**

The availability of beds was affected 7 months into the follow-up period with the removal of 13 beds for the locality on 4th August 2011. This must be taken into account in interpreting our findings on reduced bed days for CMHT with FACT; however, even if these 13 beds were hypothetically entirely occupied by patients in this study this additional number of extra beds used would fall short of the beds saved in our findings.

Figure 2 shows the background trend in bed use for all locality patients over the entire study period. There was a clear trend of falling bed use across the period of the study with a 22 % drop from year 1 to year 2. This is less than the 50 % reduction seen in the same annual comparison for the AO patient sample. There is no step change in August 2011 when the 13 beds were removed showing that bed demand and capacity were being managed at a sustainable level throughout 2011. The limited effect of the removal of these beds is supported by our findings that use of the CRHTTs did not increase.

We also considered a potential Hawthorne effect arising from the study focusing on the performance of the newly reconfigured teams. All quantitative primary outcome data was collected retrospectively from routine data from hospital information technology systems. The only data collated by the CMHTs was secondary process data on patients being stepped up and down across the two conditions. Teams were given standard management support for the service redesign and new operational processes. The authors had no management responsibility for the CMHTs. The lead author assisted the teams in working through implementation and operational aspects of the new model and the teams were aware that an evaluation was being carried out.

We were unable to interview patients or carers either individually or in groups to evaluate their experience of the change in teams and support. The FACT model implemented in our localities is not equivalent to FACT teams in the Netherlands, which are subject to a fidelity and certification process specific to the Dutch context. Nor can these findings be used to make comparisons with establishing the
AO function into standard CMHTs, without FACT enhancements, in the English context.

**Conclusions and implications for service delivery**

Through financial necessity organisations are looking for efficient service delivery structures which seek to “pool where you can, and specialise where you must”. Enhancing multi-disciplinary CMHTs with FACT provides a clinically effective alternative to specialist AO teams.

FACT provides CMHTs with robust procedures for managing a spectrum of need including patients who require periods of AO-equivalent care. FACT incorporates best practice from AO into CMHTs through the judicious use of two levels of care, whole team working, and daily coordination and allocation of care for patients in periods of higher need. Specialist AO teams appear to have prolonged intensive treatment unnecessarily and to have perceived the need for AO as relatively static. Care levels can and should be titrated more flexibly. FACT allows access to periods of assertive outreach equivalent care for a wider CMHT population according to current need rather than historical team allocation.

**Conflict of interest** None.

**References**