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# Implementation of Family-Based Treatment for Adolescents With Anorexia Nervosa

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## ABSTRACT

Although the implementation of new treatment models can be a challenging process for health care services, the outcomes can be greatly beneficial to patients and service providers. This article describes the process of change experienced within our multidisciplinary specialist eating disorder service when we implemented a new evidence-based model of care focusing on outpatient family-based treatment (FBT). Clinical outcomes were positive, including a 56% decrease in admissions, a 75% decrease in readmissions, and a 51% de-

crease in total bed days. Of families referred to FBT, 83% completed treatment and 97% of completers achieved >90% of their expected body weight. Despite these gains, many challenges were experienced, including misgivings about the suitability of FBT and difficulties in adhering to changes in professional roles. We describe these challenges, describe how they were overcome, and review factors perceived to be critical to the program's success, including integration of medical and mental health services, communication, and training. *J Pediatr Health Care.* (2014) 28, 322-330.

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## KEY WORDS

Adolescent medicine, anorexia nervosa, eating disorders, evidence-based practice, health services, quality of health care

Anorexia nervosa (AN) is a serious psychiatric condition characterized by restricted dietary intake leading to low body weight, together with a fear of weight gain and disturbed body image (American Psychiatric Association, 2013). AN has significant physical and psychological sequelae (Herpertz-Dahlmann, 2009). It affects 0.3% to 2.2% of young women, with the highest incidence rates in the 15- to 19-year age group (Bulik et al., 2006; Herpertz-Dahlmann, 2009). Prevalence rates rise markedly when subthreshold AN within Eating Disorder Not Otherwise Specified (EDNOS) is also considered (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011).

Traditionally, AN has been treated with a combination of medical monitoring, inpatient refeeding, nutritional counseling, and various forms of psychotherapy. For the most part, these treatment approaches have been unsuccessful, resulting in frequent inpatient readmissions (Steinhausen, Grigoriou-Serbanescu, Boyadjieva, Neumarker, & Winkler Metzke, 2008), prolonged illness (Herpertz-Dahlmann et al., 2001; Strober, Freeman, & Morrell, 1997) and modest recovery rates (Fichter, Quadflieg, & Hedlund, 2006; Herpertz-Dahlmann et al., 2001), particularly during adulthood. However, there have been significant recent advances in evidence-based treatments for adolescents with AN. Specifically, several randomized controlled trials have demonstrated that family-based treatment (FBT) is an effective outpatient treatment, with between 60% and 90% of adolescents achieving full or partial remission (Eisler et al., 2000; Le Grange, Eisler, Dare, & Russell, 1992; Lock, Agras, Bryson, & Kraemer, 2005; Lock et al., 2010; Russell, Szmukler, Dare, & Eisler, 1987). The dissemination and implementation of new treatments are challenging, however, because of systemic barriers such as access to education and training, as well as motivational factors such as willingness to change practice and the perceived suitability of the new treatment for the client population (Avorn & Fischer, 2010; Couturier et al., 2012; Patel, Kieling, Maulik, & Divan, 2013; Salloum, Sulkowski, Serrine, & Storch, 2009).

This article describes how a review of our model of care led to us restructuring our eating disorder program by implementing FBT, an evidence-based treatment model for adolescents with AN (Lock & Le Grange, 2013). We report the impact of these changes on patient outcomes, describe the challenges arising during the change process, and describe the factors that we believe critically influenced the successful implementation of the new model of care.

## BACKGROUND

The Royal Children's Hospital is a tertiary pediatric facility in Melbourne, Australia. Inpatient and outpatient treatment is provided free of charge through the national health care system. Until 2006, case management of adolescents with eating disorders was the responsibility of pediatricians, whose management aimed to promote medical stability and involved working with the adolescent to encourage weight gain. Inpatient admissions to a general adolescent medicine ward were routinely used in response to medical instability, failure of outpatient management (e.g., continued weight loss and prolonged food refusal), growth failure, and suicidality. Mental health input was generally sought during inpatient admissions; however, there were inconsistencies in outpatient mental health care. The type of outpatient treatment provided differed considerably between community mental health services (e.g., individual, group, or family therapies), and access varied according to location of residence, age, illness severity, and financial status. If patients were unable to access community mental health services, found them ineffective, or refused mental health input, the pediatrician was required to provide ongoing mental health support in addition to medical management.

In the years leading up to 2006, the Royal Children's Hospital adolescent inpatient unit experienced a sharp increase in eating disorder admissions. As shown in Table 1, admissions rose more than 300% between 2004 and 2006. Although the median length of stay increased only slightly during this time, the total number of bed days required annually for adolescents with eating disorders rose from 586 to 2,163. This rise was largely attributable to an increase in the visibility of the Royal Children's Hospital as an eating disorders service but may also have reflected a rising awareness and prevalence of eating disorders in the community. At the same time, it was clear that our treatment model was failing to achieve positive outcomes for many patients; in 2006, 55% of all admissions were readmissions, and 10 persons had three or more admissions in the same calendar year, indicating a troubling tendency toward a "revolving door" between inpatient and outpatient care. Moreover, just 31% of patients treated for AN between 2004 and 2007 were above 85% of expected body weight (EBW) 6 months after presentation (Telfer, Payne, & Kennedy, 2008). Of the 69% who did not reach 85% EBW at 6 months, 85% remained underweight 24 months after presentation. The increase in service demand and poor patient outcomes prompted the service to undertake a review of eating disorder management. This review provided the opportunity to introduce a new model of care and identified FBT as the leading evidence-based treatment for adolescent AN. The process of implementing the new model of care, its impact on patient outcomes,

**TABLE 1. Inpatient admissions, readmissions, and length of stay for eating disorder management, 2004-2010**

	2004	2005	2006	2007	2008 <sup>a</sup>	2009	2010
All regions							
Admissions, <sup>b</sup> <i>n</i>	36	63	119	101	74	74	52
Individuals admitted, <i>n</i>	21	42	54	57	45	41	36
Length of stay, mean (days)	16.3	17.3	18.2	22.2	26.7	19.8	20.5
Length of stay, median (days)	15.5	15.0	16.0	20.0	23.0	16.0	16.0
Total annual bed days	586	1089	2163	2241	1975	1468	1067
Readmission, <i>n</i> (%)	13 (36)	21 (33)	65 (55)	44 (44)	29 (39)	32 (43)	16 (31)
Individuals with ≥ 3 admissions, <i>n</i>	3	6	10	12	6	6	4
Selected region <sup>c</sup>							
Admissions, <i>n</i>	18	29	49	43	37	41	32
Individuals admitted, <i>n</i>	11	17	19	23	24	26	20
Length of stay, mean (days)	14.4	15.5	15.4	23.3	25.8	19.6	18.0
Length of stay, median (days)	13.5	15.0	14.0	20.0	26.0	20.0	15.0
Total annual bed days	259	448	755	1003	955	805	577
Readmission, <i>n</i> (%)	7 (39)	12 (41)	30 (61)	20 (47)	13 (35)	15 (37)	12 (38)
Individuals with ≥ 3 admissions, <i>n</i>	2	4	2	5	3	2	3
<sup>a</sup> Introduction of family-based treatment.							
<sup>b</sup> Includes readmissions.							
<sup>c</sup> Northwestern and surrounding rural regions only.							

and the experience of change for the team are presented in this article.

## METHOD

### Implementing a New Model of Care

FBT is an outpatient intervention in which a mental health clinician helps parents become actively involved in supporting weight gain and normalizing eating patterns for their child (Lock & Le Grange, 2013). Treatment progresses through three phases: (a) weight restoration, in which parents are charged with the task of refeeding by taking control of meals and supporting their adolescent to eat; (b) transitioning control of eating back to the adolescent; and (c) addressing adolescent developmental issues and terminating treatment. A full description of the treatment is provided in the treatment manual (Lock & Le Grange, 2013), and information on training can be found at [www.train2treat4ed.com](http://www.train2treat4ed.com).

During the past two decades, FBT has emerged as having the strongest evidence base for effectiveness in adolescent AN (Treasure, Claudino, & Zucker, 2010), as demonstrated in six randomized controlled trials (Eisler et al., 2000; Le Grange et al., 1992; Lock et al., 2005; Lock et al., 2010; Robin, Siegel, Koepke, Moye, & Tice, 1994; Russell et al., 1987). Beyond research settings, pediatric eating disorder services are increasingly introducing FBT (Wallis, Rhodes, Kohn, & Madden, 2007). Having identified an effective evidence-based treatment, the medical team sought support from the hospital's mental health division, which at the time was creating a number of specialist clinics. Subsequently, a specialist multidisciplinary eating disorders program was formed, initially comprising

pediatricians, a psychiatrist and mental health clinicians, a dietician, and a clinical nurse consultant. Philanthropic funding enabled full-time researchers and an expert in FBT to be hired to assist with the provision of FBT training, ongoing supervision for FBT clinicians, consultation regarding program management, education of affiliated staff in the tenets of FBT, and implementation of a research program.

Table 2 summarizes the role of each discipline in the outpatient program, including the weekly outpatient assessment clinic that commenced in 2008 and acts as the main gateway into treatment. Families who are referred by health care professionals attend a day-long assessment aimed at confirming the diagnosis and recommending treatment. During the morning assessment, the adolescent and parents are separated to complete structured clinical interviews with research staff. In the afternoon, the nurse obtains several medical and anthropometric measurements for the adolescent, and the dietician obtains a dietary history from the adolescent and his or her parents. The adolescent is then interviewed jointly by the psychiatrist and pediatrician, after which the pediatrician completes a medical assessment. Concurrently, a mental health clinician interviews the parents to obtain a developmental history and information on family background. The team meets to discuss their findings before meeting with the family to explain the diagnosis and treatment plan.

For patients diagnosed with AN or EDNOS-AN type, FBT is recommended as first-line intervention, with treatment commencing within a week of assessment. FBT is the only outpatient intervention for AN offered at the service and is currently delivered within 18 treatment sessions (approximately 50 minutes each) over a 6-month

**TABLE 2. Discipline roles within the Royal Children's Hospital Eating Disorders Program**

	Assessment clinic	Outpatient treatment (frequency)
Pediatrics	Medical assessment of patient; assist psychiatrist with diagnostic interview with patient	Medical monitoring; management of medical comorbidity (approximately five weekly)
Psychiatry	Diagnostic interview with patient	Review of mental status; management of psychiatric comorbidity; prescription of psychotropic medications if indicated (as needed)
Mental health (e.g., psychology, social work)	Family assessment with parents including patient developmental history	Provision of family-based treatment (weekly/every 2 weeks)
Dietetics	Dietary assessment of patient with patient and parents	Secondary consultation to therapist (as needed)
Nursing	Medical and anthropometric assessment of patient (e.g., heart rate, blood pressure, triceps skin fold, and mid-upper arm circumference)	Program coordination including intake and referrals; liaison between inpatient and outpatient services; education; medical monitoring and support (as needed)
Research	Standardized clinical interviews with patient and parents separately; anthropometric assessment of patient (e.g., height and weight)	Management of clinical research program; standardized clinical assessments; service evaluation; quality control (weekly/monthly)

period. Medical status is assessed by the pediatrician every 5 weeks or more frequently for adolescents with borderline medical stability or other physical conditions. In accordance with published criteria ([American Academy of Pediatrics, 2003](#)), patients are admitted to the hospital if they are medically unstable at assessment or become so during the course of outpatient treatment. Comorbid conditions and suicidal or self-harm behaviors are managed by the team psychiatrist as needed.

### Method of Evaluation

To evaluate the new model of care, we examined patient outcomes and factors associated with the process of change. After receiving approval by the institutional Research Ethics Committee, changes in inpatient admissions, readmissions, length of stay, and total bed days from 2004 to 2010 were examined via a retrospective clinical audit of hospital records. Only admissions related to AN were included in the audit. We also examined rates of referral, uptake and completion of FBT, and outcomes of FBT (e.g., weight restoration). Finally, we undertook a reflective analysis of the process of change by having members from each discipline describe the challenges of implementing the new model of care, how these challenges were overcome, and what they saw as the factors critical to the success of the program. Each discipline is represented in the authorship of this article: pediatrics (MY and SMS), psychiatry (AC), mental health (DLG and LA), dietetics (MW), nursing (SC), and research (EKH and DLG).

## RESULTS

### Patient Outcomes

#### Inpatients

As seen in [Table 1](#), hospital admissions were considerably reduced after the introduction of FBT. When comparing 2006 (2 years prior to the introduction of FBT) and 2010 (2 years after the introduction of FBT), the to-

tal number of admissions declined by 56% and the total number of persons admitted declined by 33%. Although the average length of stay appeared to increase somewhat after 2006, it has since declined, with half the total number of bed days. Readmissions represented 31% of admissions in 2010 compared with 55% in 2006; four persons had three or more admissions in 2010 compared with 10 persons who had this number of admissions in 2006; and the total number of readmissions declined by 75% between 2006 and 2010.

An additional change that occurred around this time was the regionalization of eating disorder services across the state. Previously, treatment was provided to adolescents regardless of where they lived in the state of Victoria. From 2008, hospital-based services in Victoria were divided by region, and thus the Royal Children's Hospital Eating Disorders Program became accessible only to adolescents residing in the north-western metropolitan region and some rural areas. To control for this change, the lower half of [Table 1](#) shows admission data only for adolescents living within this region.

Marked improvements continue to be observed; from 2006 to 2010, admissions declined by 35%, total annual bed days declined by 24%, and readmissions declined by 60%. Overall, readmissions represented 38% of admissions in 2010 compared with 61% in 2006. Little change occurred in the total number of persons admitted.

To further explore the relationship between the outpatient FBT program and inpatient admissions, we examined engagement in FBT of patients admitted in 2009-2010. Admissions were restricted to adolescents who resided in the region serviced by the program, because despite regionalization of the Royal Children's Hospital service, we are required to admit some out-of-region patients if beds are not available elsewhere. As shown in [Table 3](#), most admissions were for persons who had not engaged in FBT before or after the admission (38%), were admitted prior to commencing FBT

**TABLE 3. Family-based treatment status of inpatient admissions, 2009-2010**

	No. admissions (% of total admissions)	No. individuals
Never engaged in FBT	28 (38)	16
Admission prior to commencing FBT	19 (26)	16
Admission during FBT	16 (22)	9
Admission after discontinuation of FBT	9 (12)	4
Admission after completion of FBT	1 (1)	1

*FBT, Family-based treatment.*  
*Note. Northwestern and surrounding mental health region only (n = 73 admissions).*

because of medical instability at first presentation (26%), or who had discontinued FBT (12%). Adolescents in FBT at the time of admission represented just 22% of admissions in this period; just one adolescent was admitted after completion and discharge from FBT.

### Outpatients

Table 4 summarizes the number of patients who attended the assessment clinic and were subsequently referred to FBT. When FBT was first introduced in 2008, just 33% of patients diagnosed with AN or EDNOS at the assessment clinic were referred for FBT. However, this percentage rose to 53% in 2009 and 77% in 2010. Persons not referred for FBT were most often referred for individual therapy at another service.

Characteristics and outcomes of patients who commenced FBT between January 2009 and June 2010 are reported in Table 5. Patients treated in 2008 are not shown because of small numbers. Patients treated after June 2010 are not shown because many entered a randomized controlled trial of FBT being conducted with our program. More than 80% of families completed FBT in 2009 and 2010. Of these patients, mean weight at discharge was around 100% EBW, most achieved weight status greater than 90% EBW, and few required admission to the hospital after commencing treatment.

Length of treatment declined slightly over this time, from 39 weeks in 2008 to 35 weeks in 2010. The few patients who discontinued treatment (four in 2009 and two in 2010) appeared to have a poorer outcome, with mean weight at discharge around 90% EBW, and all required an admission.

### Process of Change

#### Challenges

The results of implementing FBT were positive, but the process of change was not without difficulty. Some of the initial challenges related to misgivings on the part of team members about FBT, whereas other difficulties involved the extent of changes required by each discipline in its management of patients. A significant early barrier related to preconceptions about which families were suitable for FBT. Initially the team was reluctant to advocate for FBT when it was thought that the family might struggle (e.g., because of financial hardship, parents with highly demanding jobs, single parents, marital discord, and non-English speaking families) or when it was thought that comorbidities might not be appropriately treated within FBT (e.g., mood disorder). However, as confidence in the effectiveness of FBT grew, team advocacy for this treatment improved, with the recognition that most barriers to FBT could be overcome and that comorbidities could be treated appropriately within this model of care.

Some of the initial challenges related to misgivings on the part of team members about FBT, whereas other difficulties involved the extent of changes required by each discipline in its management of patients.

Some concern was also expressed that the focus on parents would reduce individual support for the

**TABLE 4. Referrals for family-based treatment, July 2008–December 2010**

Source	July-December 2008	January-December 2009	January-December 2010
Assessment clinic			
Total assessed, <i>n</i>	17	44	33
Diagnosed AN/EDNOS, <i>n</i> (%)	15 (88)	30 (68)	31 (94)
Referred to Royal Children's Hospital FBT, <i>n</i> (%)	5 (33)	16 (53)	24 (77)
Commenced FBT, <i>n</i> (%)	4 (80)	16 (100)	23 (96)
Other*, <i>n</i>	2	5	6
Total commenced FBT, <i>n</i>	6	21	29

*AN, Anorexia nervosa; EDNOS, eating disorder not otherwise specified; FBT, family-based treatment.*  
*\*These patients were referred from the inpatient ward or another Royal Children's Hospital outpatient clinic.*

**TABLE 5. Characteristics and outcomes of FBT patients beginning treatment from January 2009–June 2010**

	January–December 2009			January–June 2010		
	Completed	Discontinued	Total	Completed	Discontinued	Total
N (%)	17 (81)	4 (19)	21	12 (86)	2 (14)	14
Male, <i>n</i>	4	0	4	1	0	1
Age in years, <i>M (SD)</i>	15.0 (1.7)	15.9 (1.6)	15.2 (1.7)	15.6 (1.4)	15.1 (0.7)	15.5 (1.3)
Length of treatment (weeks), <i>M (SD)</i>	39.2 (8.9)	14.7 (4.0)	35.5 (12.7)	35.4 (14.9)	9.9 (3.8)	31.7 (16.5)
Entry % EBW, <i>M (SD)</i>	87.8 (7.6)	83.5 (17.8)	87.0 (9.8)	84.3 (11.1)	87.6 (7.3)	84.8 (10.4)
Discharge % EBW, <i>M (SD)</i>	100.6 (5.2)	91.9 (21.3)	98.9 (10.1)	99.1 (7.8)	90.4 (16.3)	97.8 (9.2)
> 90% EBW at discharge (%)	17 (100)	3 (75)	20 (95)	11 (92)	1 (50)	12 (86)
Inpatient admission after FBT commenced (%)	2 (12)	4 (100)	6 (29)	2 (17)	2 (100)	4 (29)

*% EBW = Percent expected body weight; FBT = family-based treatment; M = mean; SD = standard deviation.*

adolescent, and as a result team members pushed to provide additional individual therapies, despite a lack of evidence of their effectiveness (Treasure et al., 2010). With experience, it became clear that concurrent individual work during FBT was unhelpful and, indeed, potentially undermining. In turn, the team's confidence grew with regard to explaining to families why individual psychotherapy is not indicated during FBT. In addition, FBT is the only form of outpatient intervention for AN offered by the service, further emphasizing the need for families and clinicians to concentrate their efforts on this treatment. Referrals can be made for other forms of treatment if needed upon discharge from FBT (e.g., to address persisting anxiety disorder).

A major aspect of FBT is empowering parents to use their own resourcefulness in weight restoring their child. Consequently, families were no longer provided with a meal plan or extensive nutritional counseling, and clinicians were required to be less prescriptive with regard to diet. This shift was challenging for the pediatricians and dietician, who were accustomed to being very direct in their instruction regarding food choices and who also initially had concerns about parents' abilities to appropriately weight restore their child. However, the intensity of FBT provides a great deal of support and tackles practical issues around the issue of weight restoration. FBT clinicians can also consult with dieticians as needed (e.g., dietary reviews when weight gain has been slow and advice regarding special diets, such as for persons with diabetes). As families demonstrated that they could successfully feed their children, parents became more empowered. This was a highly novel and, with time, positive experience for the team, which had been accustomed to parents feeling disempowered when they were unable to fulfill prescriptive recommendations.

Occasionally, the goals and pace of FBT were at odds with clinicians' expectations. For example, although

complete weight restoration was always the goal, pediatricians had often settled for less and allowed patients to maintain a lower weight or very gradually increase their weight, with the focus being the return of menses. By comparison, FBT reinforces the need for significant continued weight gain over a relatively short period, making weight restoration one of the central goals of treatment. This focus was a challenge for some team members and at times led to contradictory messages regarding weight targets. Over time, the benefits of FBT's focus on early and sustained weight gain were observed, with patients becoming medically stable sooner, requiring fewer admissions, and having a shorter duration of amenorrhea.

One medical concern raised by the team was the potential for refeeding syndrome and the risk of sudden death as potential sequelae of successfully refeeding severely malnourished patients at home. Blood tests are now ordered for all patients who attend the assessment clinic on the day of attendance and again on day 4 with supplementation provided if low levels of phosphate, potassium, or magnesium are detected. A small number of patients have required phosphate supplementation as an outpatient (five patients in 2011).

The most challenging systemic change was the shift to the FBT clinician being the coordinating clinician and parents being the key decision makers. Previously the pediatrician was the case manager and worked with the adolescent to manage symptoms. In our new model, pediatricians had to learn to be less prescriptive and instead encourage parents to make choices about their child's management. Difficulties occasionally arose when advice that parents and patients received from the pediatrician contradicted that of the FBT therapist. However, as communication between the therapists and pediatricians became more frequent and the importance of parents as key decision makers was recognized, these difficulties resolved. Now all team members appreciate the benefits of sharing the responsibility of care.

### Critical success factors

One of the most important factors in successfully implementing FBT has been the multidisciplinary team approach, specifically mental health professionals working closely with medical staff. The integrated team is of central importance from the outset; when a patient first presents to the assessment clinic, each member of the team plays an active role in assessment and treatment planning and together demonstrate a shared understanding of the illness and the need to engage in FBT. The clinic not only provides a thorough assessment of the patient and a powerful first step in intervention, it also promotes close working relationships within the team. Throughout treatment, each team member continues to play an important role in supporting the family either directly or indirectly.

Naturally, close and open communication within the team is essential. This communication is particularly important for minimizing potential confusion and splitting between clinicians working with a family and for supporting the team when working with especially difficult or confronting cases. Early in implementation, full-time appointments of a clinical nurse consultant and psychologist were important for coordination of the team, organization of meetings, and development of protocols. The nurse position continues to be of importance for maintaining team cohesion. Formal meetings (e.g., team meetings and clinical supervision) and informal discussion (e.g., by e-mail and phone) provide valuable opportunities to seek advice, raise questions, review protocols, and, importantly, debrief and support each other. Leadership within the team has also been essential for overseeing clinical decision making, promoting adherence to the treatment model, and ensuring that all team members work effectively together. Further emphasizing the integration of medical and mental health components within the team, leadership roles are shared between the psychiatrist and a pediatrician.

Ongoing training, education, and supervision of staff have been critical in the maintenance and development of skills within the team. Supervision has been particularly important in ensuring treatment fidelity and professional support. Further training and education, especially around advances in treatment and potential

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research directions, have also promoted future growth of the program.

The program's success has been greatly assisted by strong connections between the inpatient and outpatient settings, which has been aided by the many staff who work across both settings. Inpatient nurses have been educated regarding the tenets of FBT, how to provide appropriate and sensitive care for patients with eating disorders, and how to ensure that interactions with family members reinforce the role of parents in recovery and do not inadvertently blame or disempower parents. Greater confidence in FBT has meant that hospitalization is now only used when patients are medically unstable, leading to fewer and shorter admissions. Further, for patients who first present via the inpatient unit, the very positive messages about FBT communicated by the staff help families engage with outpatient treatment after discharge. As noted by Weaver, Sit, and Liebman (2012), seamless integration of the multidisciplinary team, particularly around communication with families, is an important aspect of successful transition from inpatient to outpatient FBT.

### DISCUSSION

Restructuring the clinical program and implementing a new treatment model was an intensive and challenging process, but the benefits have been remarkable. Inpatient admissions, readmissions, and total bed days have fallen considerably, even after accounting for changes in the provision of services to geographical regions across the state. Of note, the total number of readmissions declined by 75% between 2006 and 2010, signifying great progress toward stopping the revolving door of inpatient-outpatient care (Table 1). Referral to and uptake of the outpatient FBT program has increased as confidence and expertise in the model has grown, particularly in regard to its suitability for a broad range of families (Table 4).

Importantly, most patients have completed FBT with positive outcomes in a short period (Table 5). These improvements not only contribute to benefits for individuals and families with immediate cost reductions within our own service but will likely reduce the long-term costs to society as a result of less chronic AN. Whether the findings from our service are replicable in countries without a publicly funded health care system is unknown. FBT effectiveness studies conducted in the United States typically provide treatment at no cost (e.g., Loeb et al., 2007). Nonetheless, payer costs would be expected to be lower for FBT than traditional approaches. Standard FBT is generally shorter than traditional approaches, and as such would be expected to be provided to patients and families at less cost. In addition, although the indicators for admission are unchanged under FBT, fewer admissions of shorter duration are expected when compared with traditional approaches, further lowering costs.



It is difficult to attribute the observed changes at our service entirely to the implementation of FBT. For example, it may be that changes in sociocultural factors or other therapeutic practices have had an influence. In addition, it is possible that part of the reduction in admissions was simply due to a return to baseline rates observed before 2006. However, this explanation seems unlikely, because although we do not have precise data from this time, the number of persons seen by our combined inpatient and outpatient program increased in 2006 and has remained high, whereas inpatient admissions, readmissions, and bed days have fallen. Other than the reported change in treatment model and regionalization of services (which was controlled for), no reason can be identified that would explain the decreased need for hospitalization by adolescents with AN at our service.

The attribution of reduced admissions to the success of the FBT outpatient program is further supported by the observed flow of patients through the assessment clinic, outpatient program, and inpatient ward; patients who commenced and remained engaged in FBT until mutual discharge were unlikely to require an inpatient admission. Furthermore, very few of the patients requiring admission in 2009-2010 were engaged in FBT at the time of the admission. We therefore consider it unlikely that the reduction in admissions was largely attributable to a return to baseline.

The early misgivings about the new model of care and the extent of systemic changes that were required by introducing FBT have now been overcome. This process has been assisted by a strong focus on staff training and clinical supervision, good communication processes, and consistency of care across inpatient and outpatient services. It is apparent that team members have benefited from having shared goals, open communication, clearly defined roles, and access to expertise from a variety of disciplines. Indeed, there has been a sense of pride in being part of a team that is contributing to such positive patient outcomes.

Beyond the team, we have observed a shift in the experiences of families faced with this illness, in that parents feel supported and empowered rather than blamed and helpless. This shift has benefited the well-being of parents and enabled them to be proactive in their child's recovery, a feature that has also been very rewarding for the clinical team. Systematic exploration of adolescents' and parents' experience of the treatment

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model was beyond the scope of the current study but would add another dimension to our understanding of the impact of this model of care. Indeed, previous studies of families' perspectives of treatment for AN have indicated gaps between guideline recommendations for FBT, health care practice, and family preferences (Westwood & Kendal, 2012).

Despite successfully implementing FBT at our service, challenges continue to arise. These challenges have included, for example, how best to monitor patients who continue to experience eating disorder cognitions after FBT has concluded, how to identify and respond to potential lapses and relapses, and when and how to provide alternative treatments for patients when FBT is not successful. However, the work we have undertaken as a team has given us the confidence that we will be able to modify our program as the evidence base continues to grow and new modes of treatment are developed.

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