Defragmenting paediatric anorexia nervosa: the Flinders Medical Centre Paediatric Eating Disorder Program

Shuichi Suetani  Psychiatry Registrar, Queensland Centre for Mental Health Research, Wacol, QLD, and; Adjunct Research Registrar, Queensland Brain Institute, University of Queensland, St Lucia, QLD, Australia
Sau Man Yiu  Consultant paediatrician, Flinders Medical Centre, Bedford Park, SA, Australia
Michael Batterham  Consultant psychiatrist, Flinders Medical Centre, Bedford Park, SA, Australia

Abstract
Objective: To describe the establishment and the main characteristics of the Flinders Medical Centre Paediatric Eating Disorder Program.
Conclusion: While the programme is still in its infancy, it is hoped that our model of care can provide a sustainable, long term contribution to the management of paediatric eating disorders.

Keywords: child and adolescence psychiatry, eating disorder, service provision

Eating disorders in child and adolescence have a lifetime prevalence of between 0.5% and 2% with a peak age of onset between 13 and 18 years.1–3 Prognosis is generally guarded with a mortality rate of around 2% to 5%.1,3 Furthermore, psychiatric co-morbidities such as depression, anxiety, personality disorder and obsessive compulsive disorder are common.1,2,4 Adverse impacts are perhaps more pronounced in the child and adolescent population, whose bodies and minds are still undergoing active development.1

While the evidence for family based therapy (FBT) for children and adolescents in the outpatient setting is growing,1,2,3,5,6 there remains a lack of evidence for the effective inpatient treatment of medically unstable patients with eating disorders.3,7 Furthermore, patients and health professionals often struggle through a seemingly fragmented system of care between different professionals and in different settings.8

Flinders Medical Centre (FMC) is a metropolitan teaching hospital located in the southern area of Adelaide, South Australia. The paediatric inpatient unit in the hospital is a 33 bed ward which caters for patients under the age of 18. Over the last several years, there has been a significant increase in the number of patients admitted into the unit for treatment of eating disorders. The number of admissions increased from just over 20 per year in the 2007/2008 financial year to 80 in the 2012/2013 financial year. In response to this escalation, a multi-disciplinary eating disorders team was established in 2012.

The current paper describes the establishment and the main characteristics of the FMC Paediatric Eating Disorder Program (FMC PEDP).

The establishment
The eating disorders working team led by a consultant paediatrician was established. The team found that there was sparse evidence in the literature about the effectiveness of different models of care used in eating disorder units across Australia. Because of this, the members of the working team visited the eating disorders teams at the Children’s Hospital at Westmead in New South Wales and at the paediatric unit in the Royal Hobart Hospital in Tasmania. The Westmead programme has been running an adolescent eating disorders unit since 1996 and the Royal Hobart programme has adapted its model under the similar resource constraints as in the FMC. These programmes have been successful in reducing both the lengths of stay and re-admission rates.

The FMC PEDP was launched in February 2013. It was based on the Westmead model, but like the Royal Hobart programme, it was adapted to allow for limitations in both

Corresponding author:
Shuichi Suetani, Queensland Centre for Mental Health Research, Wacol, QLD 4074, Australia.
Email: Shuichi.Suetani@health.qld.gov.au
funding and resources that were available at the FMC. In fact, the FMC PEDP was set up with no additional funding.

The main characteristics

The FMC PEDP is made up of a multi-disciplinary team that includes paediatricians, nurses, dieticians, physiotherapist, occupational therapists, psychologists and a teacher. The team also includes the child and adolescent mental health services (CAMHS) team, which consists of a psychiatrist, a psychiatry registrar, a social work therapist who specialises in FBT and a nurse clinical practice consultant.

The programme aims to provide a supportive and therapeutic environment which enhances the opportunity for the patient to return to a healthy weight and healthy eating patterns. In particular, the inpatient programme aims to attain physiological stability, to initiate nutritional recovery and to commence an appropriate re-feeding regimen.

During admission, the patients receive a daily medical review and their weights are monitored twice weekly before breakfast. Initial meetings with parents are held within 48 hours of admission to discuss the aims of the inpatient treatment. Serum electrolyte levels and heart rate are monitored closely. The need for a special nurse is assessed in patients with behavioural difficulties including eating disorder related behaviours such as purging or excessive exercising, risk of self-harm, or those requiring high dependency nursing care due to a comorbid medical condition such as diabetes mellitus. Multi-disciplinary meetings are held on Mondays and Thursdays to discuss the progress and the treatment plan. Family meetings are held every Monday to discuss progress and plans, and to allow families to share concerns.

In addition, CAMHS assesses families’ suitability for FBT and, if suitable, prepares families for the commencement of FBT on discharge. The preparation includes psychoeducation regarding the nature of the illness and the basic principles of FBT as well as its current evidence for the paediatric population. A seven page information handout for the parents has been developed by the unit.

Furthermore, regardless of their planned therapeutic mode upon discharge, the CAMHS provides psychological support for the patients while on the ward by utilising the principles of supportive psychotherapy.

Progress levels

The FMC PEDP consists of ‘level systems’. Progression through the levels depends not only on improvement in weight and eating habits, but also on patients’ physical and psychological wellbeing. An overview of the progress levels is presented in Table 1.

Medical stabilisation

Admission criteria for medical stabilisation are described in Table 2. Patients are usually stabilised medically in the first 24 hours of their admission. In this level, the patients are required to have complete bed rest and nasogastric tube (NGT) feeding. They are only able to have immediate family members visiting and they are not allowed to leave the ward.

Level One

Patients are usually on this level during days 2 and 3 of their admission. Initially, patients are given overnight NGT feeds of 1000 kilocalories (kcal) between 20:00 and

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Table 1. Overview of progress levels

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<th>Level</th>
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| Medical Stabilisation | • Complete bed rest  
|               | • NGT feeding  
|               | • Visits by immediate family members only  
| Level One     | • Restricted activity  
|               | • Individualised meal plans  
|               | • Participation in groups and school  
| Level Two     | • Participation in physiotherapy and occupational therapy sessions  
|               | • Internal leave  
|               | • 20-min walks with parents  
| Level Three   | • External leave  
|               | • Visitors per patient’s wishes  
|               | • 30-min walks with family  
| Level Four    | • Full day/overnight leave  
| Discharge     | • Follow-up with both medical and psychological teams  

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06:00 hours in conjunction with an 1800 kcal/day menu plan. NGT feeds are weaned as oral intake increases. Patients are required to use wheelchairs to attend meals, groups and school. They are not allowed to participate in physiotherapy or occupational therapy activities at this level.

Level Two

Patients are on a 2800kcal/day diet plan. If they are unable to eat all their meals, they are given the appropriate bolus, preferably orally but through NGT if required. Patients are able to participate in supervised physiotherapy and occupational therapy sessions. They can have one meal inside the hospital but off the ward with their parents. Patients may leave the ward for 20-min gentle walks with their parents once a day on weekdays and twice a day on weekends.

Level Three

NGT feeding is ceased. Patients can have a half day off site to have a meal and a snack. Anyone can visit. Patients may leave the ward for 30-min gentle walks with any family member over the age of 18 once a day on weekdays and twice a day on weekends.

Level Four

In addition to other privileges, the patients can now have full day and overnight leave.

Discharge and follow-up

Discharge planning commences upon admission. Factors to consider before discharge include the level of patient’s functioning, anticipated progress in the community, discharge environment and follow-up arrangement. The success or otherwise of leave also informs the discharge plan.

By discharge, most families have a therapist in place to commence FBT, either within the FMC CAMHS or with a private therapist. The paediatric unit follows up patients to monitor weight and medical issues. In the rare cases when the family decides against FBT, alternative mental health follow-up is arranged.

Discussion

The FMC PEDP aims to produce positive clinical outcomes by presenting a coherent and integrated treatment model to families, across both inpatient and outpatient services in harmony with FBT. There is continuity of care upon discharge through the Paediatric Department and often with the FMC CAMHS.

The structured programme and the defined protocols allow the staff with different backgrounds to provide consistent management, and many patients have said that not having to make choices about food reduces stress. Openness and communication during bi-weekly team meetings and weekly family meetings ensure that family and clinicians are working towards agreed mutual goals, improve parental confidence and reduce the chance of splitting between the team members.

Table 2. Admission criteria for medical stabilisation

| Physiological instability | • Temperature < 35.5°  
|• Heart rate < 50 beats/min  
|• Capillary refill > 3 s  
|• Systolic blood pressure < 80 mmHg  
|• Significant posture blood pressure drop; >15 mmHg or rise in heart rate by > 30 beats/s  
|Dehydration | • Clinical signs of dehydration  
|Significant co-morbid psychiatric states | • Depression  
|• Anxiety  
|• Obsessive–compulsive disorder  
|Abnormal ECG changes | • Arrhythmia  
|• Diminished amplitude of QRS complex and T waves  
|• QTc interval > 0.44ms  
|Electrolyte imbalance | • Hypokalaemia; urgent ICU consult if < 2.8  
|• Hypophosphataemia  
|Situational crisis | • To the degree which renders home management untenable  

NGT: nasogastric tube; ECG: electrocardiogram; ICU: intensive care unit
Furthermore, a Flinders University Department of Psychology PhD candidate is currently assessing both qualitative and quantitative outcomes of the programme.

Conclusion
In the current paper, we have described a multi-disciplinary inpatient treatment programme which aims to achieve physical and psychological stability, and also to educate family members and to install confidence in order to facilitate an ongoing management of eating disorders long after the discharge.

While the FMC PEDP is still in its infancy, it is hoped that our model of care can provide a sustainable, low cost and long term contribution to the management of this difficult to treat illness. We hope that the current paper can be of some assistance to those who are considering setting up an inpatient eating disorder service within an existing paediatric service.

Disclosure
The authors report no conflict of interest. The authors alone are responsible for the content and writing of the paper.

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