Anorexia Nervosa (AN) in Inpatients at a Children’s Hospital (2005-2011)

Abstract:
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AN is a serious mental illness best treated in the community. Those with critically low weight require hospitalisation. There is little published research on AN in Ireland. The aim of this audit was to evaluate the Irish experience. The mean age on admission was 13.5 yrs which is 6mo earlier than 2002 figures. Boys represented 6/20 (30%) of admissions. All girls were more underweight than boys (0.4th centile V 9th centile for BMI). This was despite girls presenting to hospital sooner than boys post onset of symptoms. Aside from low weight, over-exercising and food restricting were the most common presenting features. Inpatient weight restoration is successful with a mean weekly weight gain of 930g which is within the recommended range of 500-1000g/wk. Mean hospital stay was 38 days.

Methods
This audit reviewed the demographics of all inpatients admitted with AN over a seven year period between 2005 and 2011 (n=20). Data from medical and dietetic files were analysed. Descriptive statistics were used due to small numbers.

Results
See Table 1 for admission profile. 20/20 (100%) of patients presented through A&E. The majority (60%) were self referal with the remaining referred via G.P. None had been previously linked in with CAMHS.

Symptom profile
On admission, it was noted that 5/20 (25%) of patients were known to have been vomiting and 13/20 (65%) were over-exercising. All patients were food restricting. All the girls who had reached menarche had amenorrhoea.

Anthropometry
Mean BMI on admission was 14.8kg/m² rising to 16.7kg/m² on discharge. Girls presented on a lower BMI centile (0.4th) than boys (9th) despite their earlier presentation post onset of symptoms. Although presenting at a lower weight girls made greater gains over stay (5.4kg over total stay versus 3.6kg for boys). On discharge, BMI centile rose in girls to 9th and in boys to >25th. The mean weekly weight gain of 930g is at the upper end of recommended and above the 800g associated with better outcome. Recommended weight gains were achieved in all but weeks 9, 10 all, 12/20 (60%) needed oral nutritional supplementation. 3/20 (15%) needed some NG feeding due to insufficient oral intake.

Other issues
9/20 (45%) suffered with constipation during stay. 7/20 (35%) children had undergone recent orthodontic work. 10/20 (50%) were commenced on anti-depressants.

Hospital Stay and discharge
The mean hospital stay was 38 days (range of 7-76 days). The average length of stay for those on psychotropic treatment of AN was 44 days. The Maudsley treatment approach, used in CUH, acknowledges the importance of the parents and child in recovery. Patients are initiated on a non-negotiable meal plan with total bed rest and supervision usually implemented. MDT community based therapy is recommended in treating the complex needs of the patient and family. The need for acute hospital admission is usually indicated in poor physical health or poor response/lack of access to outpatient treatment. The Royal college of Psychiatrists state that those where BMI falls <2nd centile probably warrant hospitalisation. Rate of weight loss and BMI centiles position are associated with cardiovascular and electrolyte instability. Calorie content of the meal plan is increased gradually to minimise risk of refeeding syndrome. The longer a patient remains in suboptimal nutrition the more severe the disorder can become so it is important to correct under-nutrition as early as possible. Body weight gain during the initial refeeding phase can be slowed by an increase in resting energy expenditure. The weight gain aim is 500-1000g/week. A recent study found better outcome among patients who had gained greater than 800g per week.

Discussion
Admission through A&E is not ideal. Beds may be unavailable. No admissions came via CAMHS and presenting BMI centile was not always in the higher risk category. Perhaps a lack of awareness of CAMHS among parents/G.Ps/schools contributes to this picture. The hospital should not be the first port of call unless the child is medically unstable. The relatively high male to female ratio reflects society’s reluctance and difficulty in recognising and diagnosing AN in males. Girls are presenting to hospital sooner post onset than boys which could suggest better awareness and detection of AN in girls. It is a concern that in children presenting with AN who are already underweight relatively simple dietary adjustment is sufficient. In the present study, the most frequent reason for admission was an inability to maintain normal body weight and is consistent with previous studies. The mean age on admission was 13.5 yrs which is 6mo earlier than 2002 figures. Boys represented 6/20 (30%) of admissions. Those with critically low weight require hospitalisation. Rate of weight loss and BMI centiles position are associated with cardiovascular and electrolyte instability. The weight gain aim is 500-1000g/week. A recent study found better outcome among patients who had gained greater than 800g per week.

Conclusion
There is little published research on AN in Ireland. The present study found that the overall mean age of onset was estimated at 6 months prior to seeking treatment. Onset of AN in childhood is estimated at 13.5yrs with the remaining referred via G.P. None had been previously linked in with CAMHS.

Summary
The mean hospital stay was 38 days (range of 7-76 days). The average length of stay for those on psychotropic treatment of AN was 44 days. This audit reviewed the demographics of all inpatients admitted with AN over a seven year period between 2005 and 2011 (n=20). Data from medical and dietetic files were analysed. Descriptive statistics were used due to small numbers.

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to admission put patients in the high risk category as defined by the Junior Marsipan group. This was controlled during admission by close supervision. Constipation was common during admission. It is important to be mindful of this due its effect on an already dulled appetite and also the effect of impaction on weight. Treating constipation can be challenging as it is inappropriate to prescribe laxatives or exercise. Prune juice was used to good effect in CUH.

A number of patients had commenced orthodontic treatment prior to onset of AN. When braces are fitted and frequently adjusted, the teeth loosen and move causing pain. Oral pain must be considered in cases of unintentional weight loss which could later precipitate disordered eating. Sometimes dental professionals may discourage certain foods if they interfere with treatment which the perfectionist child may over-interpret. Although no Irish figures are available on the prevalence of orthodontic treatment there is UK data estimating that 14% of all 15 year olds have orthodontics. In our study 35% would seem to be disproportionately high. Future research should explore the relationship of orthodontics to weight loss. The average length of hospital stay is more than 5 weeks. Inpatient stay is expensive and requires much resource in terms of staff training and MDT input. Education sessions have been arranged for staff to raise awareness of the strict nature of caring for a child with AN on the ward. The ill child with AN may try to manipulate the meal plan with less experienced or new members of staff. It is vital that the child not feel they are colluding and thus controlling aspects of their care. 10/20 (50%) of this group were commenced on psychotropic medication due to entrenchment in anorexic thoughts. The more difficult co-morbid anxiety/depression may be responsible for the significantly longer hospitalisation in this group.

While AN is best treated in the community it is most successful when the illness is in the early stage. In this study, onset of illness does appear to significantly predate hospitalisation. Awareness at a community level of the signs and symptoms of AN may facilitate earlier treatment and negate the need for hospitalisation. It is important to be aware of the trend towards younger onset of AN and also the increasing incidence in boys. AN may look different nowadays and we must be ahead of the curve given its high mortality rate. The dramatic increase in AN presentations in CUH in the past decade may be mirrored nationally and this will have implications on community and acute services. Provisions will certainly need to be made in the planning of the new paediatric hospital for dedicated beds and also specialist medical, nursing and dietetic posts. Overall, treatment of AN in CUH is successful with optimal weight gains and dietary compliance achieved during stay.

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References
3. Answer to parliamentary question by Care Services Minister Phil Hope, 17th February 2009.