

**SEEKING AN EVIDENCE BASE TO DETERMINE THE REQUIREMENTS FOR RESIDENTIAL CARE
(SHOULD INPATIENT CARE BE A COMPONENT OF THE NEW MODEL?)**

SUMMARY

The literature on alternatives for adolescent inpatient admission is reviewed. The literature identifies a number of interventions appropriate to either adolescents presenting for acute admission, or young people who have different disorders to those admitted to Barrett or of a predominantly different age group. This literature describes a group of adolescents who do not respond to these interventions, or have a level of severity of presentation where the described intervention would not be appropriate. The literature does not describe alternative interventions for those with severe, persistent disorder.

The literature on length of stay is largely contextual, set against a background of changes in therapeutic approaches, third party influences necessitating change in the length of stay and changes in the disorders treated in inpatient units. Some patient and family variables related to length of stay are described. These are largely contextual to the cohort of adolescents admitted to that unit.

There is considerable evidence from observations over the past 25 years of the level of skills needed in staff to manage adolescents with the severity, persistence and complexity of those admitted to Barrett Adolescent Centre. These include:

- Levels of acuity in some adolescents requiring high levels of continuous and close observations
- Adolescents on an Involuntary Treatment Order requiring admission to an Authorised Mental Health Service
- In rare instances having the capacity to offer seclusion as a necessary intervention
- Observations to the therapeutic process from providing continuity of care vs breaks in continuity by transferring adolescents with high acuity to other units
- Observations from changes in the stability and permanency of staff
- Observations on the contributions of staff of various skill levels
- Observations on the necessary skills registered nurses bring to the unit which are required to manage adolescent of this level of complexity and severity. These skills include knowledge of mental illness, skills in assessing mental state, skills in assessing level of risk, knowledge of and capacity to generalise skills developed in specific therapeutic interventions, capacity to manage emotional dysregulation, capacity to manage behaviours, capacity to monitor and manage impaired medical states, capacity to provide therapeutic interventions as necessary across settings and across time, and capacity to provide care coordination.

It is concluded that substantial evidence exists to recommend that an inpatient service is a necessary component of care to manage adolescents with the severity, complexity and persistence of disorders of those currently admitted to the Barrett Adolescent Centre

THE LITERATURE

Medline and PsycInfo databases were searched for articles related to adolescent inpatient admission. Several papers were identified which consider the characteristics of innovations in inpatient admission and alternatives to admission, at times in randomised controlled trials of the alternative intervention vs inpatient admission. These can be grouped into interventions for general disorders, interventions for specific behaviours and interventions for specific disorders. In addition, several papers were identified that examined issues around length of stay.

Papers were examined for their relevance to the population of adolescents currently seen at Barrett in terms of age, the range of disorders treated, persistence of symptoms, and persistence of impairment. Some reviewers (Gowers & Rowlands, Inpatient services, 2005) noted differences in the range of acuity among the papers they surveyed. Examples of the criteria for admission are contained in the current Model of Service Delivery for the Adolescent Extended Treatment and Rehabilitation Service.

“Severe and complex mental illness in adolescents occurs in a number of disorders. Many adolescents present with a complex array of co-morbidities. AETRC typically treats adolescent that can be characterised as outlined below:

- *Adolescents with persistent depression. This is often in the context of childhood abuse. These individuals frequently have concomitant symptoms of trauma eg. PTSD, dissociation, recurrent self harm and dissociative hallucinations.*
- *Adolescents diagnosed with a range of disorders associated with prolonged inability to attend school in spite of active community interventions. These disorders include Social Anxiety Disorder, Avoidant Disorder of Childhood, Separation Anxiety Disorder and Oppositional Defiant Disorder. It does not include individuals with truancy secondary to Conduct Disorder.*
- *Adolescents diagnosed with complex post traumatic stress disorder. These individuals can present with severe challenging behaviour including persistent deliberate self harm and suicidal behaviour resistant to treatment within other levels of the service system.*
- *Adolescents with persistent psychosis who have not responded to integrated clinical management (including community-based care) at a level 4/5 service.*
- *Adolescents with a persistent eating disorder such that they are unable to maintain weight for any period in the community. These typically have co-morbid Social Anxiety Disorder. Treatment will have included the input of practitioners with specialist eating disorders experience prior to acceptance at AETRC. Previous hospital admissions for treatment of the eating disorder may have occurred.”*

Some papers were excluded from this review because they described interventions for young people with a behaviour disorder or young people who were 6 – 12 years of age.

Interventions for General Disorders

Two European studies (Mattejat, Hirt, Wilken, Schmidt, & Remschmidt, 2001; Schmidt, Lay, Gopel, Naab, & Blanz, 2006) conducted trials of allocation to inpatient treatment vs home treatment for children and adolescents aged 6 -17 years.

The mean age of the Mattejat et al trial was 11 years and 9 months at the time of the intervention, and 15 years and 6 months at follow up. Young people were randomly allocated to home treatment

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or inpatient interventions. Disorders treated at two centres included (in order of frequency) emotional disorders, conduct disorders, anorexia and other eating disorders, encopresis and enuresis, neuroses and ADHD. Because the early papers describing exclusion criteria (e.g. need for hospitalisation because of safety) were in German, it is difficult to gauge the numbers who may have needed hospitalisation and thus excluded from the randomised process. Because the follow up was an analysis of each group, they did not address the issue of varying trajectories within each group, including the need for subsequent admission.

The mean age of the Schmidt et al trial was 10.9 years in the home treatment group and 11.3 years in the inpatient group. This study excluded young people with cachectic anorexia, who were acutely psychotic or suicidal. Nearly 65% of the young people had a primary diagnosis of an externalising disorder, and 14% were admitted for a developmental disorder. Over 85% of young people in both groups had prior inpatient or outpatient treatments. 17% in the home treatment group and 13% in the inpatient group had subsequent inpatient admissions. Overall 17% in both groups declined in functioning.

A Community Intensive Treatment Team was developed in Firth, Scotland in response to the closure of the adolescent inpatient unit (Simpson, Cowie, Wilkinson, Lock, & Monteith, 2010). The age of young people described and the presenting disorders were more equivalent to the Barrett population. The HoNOSCA scores on admission were significantly elevated, characteristic of those admitted to acute inpatient units. Both the problems with family life and relationship and impairment subscales on the HoNOSCA were less than in Barrett on admission. This seems to be a population who were acutely unwell and who may be treated otherwise in an acute inpatient unit. As yet, impairment was not established. 3 of the 57 deteriorated over the time, and a further 6 required hospitalisation out of area.

The value of this study is its application to young people who may be otherwise admitted to an acute inpatient unit. The mean length of time in treatment was 23 weeks, substantially more than the average time in CYMHS outpatient treatment.

Multi-systemic Therapy (MST) is an intensive community based treatment introduced initially for delinquent youth. This was subsequently extended in a randomised trial comparing MST to hospitalisation to youth presenting to emergency departments with self harm or suicide intent, homicide ideation and psychosis. (Henggeler, et al., 1999). The average age of youth was 13 years, 85% had previous mental health care, 35% had previous hospitalisation. More than half had either Oppositional Defiant Disorder or Conduct Disorder and 25% had contact with the juvenile justice system. At one year follow up (Henggeler, et al., 2003), 49% of those in the MST required hospitalisation in the first four months, and 47% of both groups required out of home care. Periods of hospitalisation were brief (< 14 days). There were initial gains for those in the MST group in a number of measures, but these dissipated after a year. A subsequent paper (Halliday-Boykins, Henggeler, Rowland, & DeLucia, 2004) noted the heterogeneity of outcomes among the youth, with 17% showing marked deterioration. No papers have been published for this group since 2005, in contrast to continuing research for MST for delinquent and substance abusing youth.

Three crisis interventions were trialled (Evans, Armstrong, Greenbaum, Brown, & Kuppinger, 2003) with young people from 5 – 17 years (mean age 12.9 years) who would otherwise have been hospitalised with a range of disorders and behaviours including disruptive, adjustment, mood,

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psychotic and anxiety disorders. 82% were maintained in the community. 5 – 10% were hospitalised because they were a danger to themselves.

Interventions for Specific Behaviours

Alternatives to inpatient admission for adolescents with self harm behaviours continue to be evaluated. A rapid response outpatient model for reducing inpatient admission is described (Greenfield, Larson, Hechtman, Rousseau, & Platt, 2002). This is a specific intervention evaluated in a controlled trial against routine evaluation in an emergency department. Rates of inpatient hospitalisation following attempted suicide or presentation with self harm were decreased using this intervention. Follow up was for 6 months. Some young people required readmission during that period.

Interventions for Specific Disorders

Treatment for anorexia was evaluated in a multi-centre trial of specialist community based eating disorder services vs generalist CAMHS vs inpatient treatment (Gowers S. G., et al., 2007; Gowers S., et al., 2010). First line inpatient treatment showed no advantage over either specialist community treatment or generalist CAMHS treatment. The value of long term admission for those requiring subsequent hospitalisation for either community group was doubtful, although the lead author continues to consult at a longer term inpatient unit.

Literature on Length of Stay

Up until the 1980's, length of stay was often determined by the type of therapy, in particular psychoanalytically informed therapy (Nurcombe, 1989) which continues to be a factor in some European inpatient units (Hoger, et al., 2002). In the USA in particular, pressures from the health insurance industry necessitated dramatically curtailed lengths of stay (Nurcombe, 1989; Larson, Miller, Fleming, & Teich, 2007; Butts & Schwartz, 1991; Gifford & Foster, 2008; Case, Olfson, Marcus, & Siegel, 2007). Units changed practices in number of ways including the types disorders for which young people were admitted (Pottick, Barber, Hansell, & Coyne, 2001) and a shift from treatment to crisis intervention, short term stabilisation and transition to community treatment (Gold, Heller, & Ritorto, 1993). The UK has faced pressures to admit acute admissions in to what were previously longer stay wards, resulting in a mix of lengths of stay (Corrigall & Mitchell, 2002).

One study (Hoger, et al., 2002) noted that diagnosis is not an indicator of length of stay, although there is some evidence (Hanssen-Bauer, et al., 2011; Swadi & Bobier, 2005) that psychosis predicts a longer length of stay in acute inpatient units.

Factors described as being associated with longer lengths of stay include persistent aggression (Dean, et al., 2008), callous-unemotional traits (Stellwagen & Kerig, 2010), having a co-morbid disorder with an eating disorder (Lievers, et al., 2009), variation in the response rates in those with a depressive disorder (Subramaniam, Lewis, Stitzer, & Fishman, 2004) – although the causes of this variation is unclear - and active suicidal preoccupation without active preparation or attempt. (Lesaca, 1992). Because of the individual characteristics of these units, it is difficult to extrapolate many of these factors to an adolescent extended treatment unit.

Conclusions from the Literature

Numerous naturalistic and controlled studies have described alternatives to inpatient care. However, these are characterised by:

- predominantly being alternatives to acute admission for a cohort of adolescents with first or early presentations
- often being interventions for a younger age group to those at Barrett
- often being interventions for disorders which would not be a primary reason for admission to Barrett
- often excluding from the study a cohort who were severe enough to absolutely require admission
- often identifying a cohort who deteriorated from baseline after 4 – 6 months (on average) of the intervention under investigation
- not providing details of further interventions for this latter cohort.
- not adequately describing factors contributing to longer lengths of stay in a unit utilising multimodal interventions for a cohort of adolescents with severe, persistent disorders with severe impairment.
- did not consider residential treatment as an alternative to admission

Since adolescents admitted to Barrett are likely to be either those who were too unwell to participate in the interventions described in the literature, or deteriorated in spite of the intervention, the literature does not provide guidance regarding alternatives to admission.

Moreover, the literature provides little guidance regarding length of stay for adolescents with severe and persistent disorder with impairment.

ALTERNATIVE EVIDENCE TO CONSIDER FOR THE NEED FOR INPATIENT ADMISSION

Various observations from Barrett Adolescent Centre provide a range of evidences for the necessity for an appropriately staffed inpatient service.

1. Continuous Observations

Continuous observations are one measure of acuity. It is a carefully considered measure, because it is an expensive resource, is potentially aggravating to the young person at a time when they are already in considerable distress and is demanding on staff. It is an indication of a level of acuity which is not tolerated in units staffed by residential workers (e.g. ADAWS), and would necessitate transfer to an inpatient unit.

The decision to utilise continuous observations is made most often because of heightened risk of suicide, whether in the context of profound depression or psychotic illness. This may be associated at times with extreme anxiety and agitation. Uncommonly adolescents who are nutritionally impaired due to a range of eating disorders may be placed on continuous observations for a period after meal times, or to support physical health. The decision is made with consideration to other measures available including locking the ward (it is normally an open unit where adolescents have free access to outside spaces).

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Average hours of continuous observations per year for the following five year periods

1998 – 2002	4510 hours per year
2003 – 2007	4580 hours per year
2008 – 2012	5200 hours per year

In addition, to continuous observations, an equal number of hours may be spent in a state of “high acuity” – 5 minute observations, or restricted to an area of the ward where they are readily visible.

Changes in the permanency of staff in the unit during the period of uncertainty of relocation of the unit since 2008 allow conclusions to be drawn about staff who know an adolescent doing continuous observations vs those who may be contracted for a shift or for a series of shifts.

Skilled permanent staff

- continually monitor mental state for improvements (to enable lessening of the conditions of continuous observations) or deterioration. During periods of deteriorated mood, adolescents show considerable ingenuity in obtaining means for a suicide attempt if a staff member is unaware of their usual behaviours and early warning signs.
- have a thorough understanding of the history and course of the adolescent’s illness
- develop judgment when to leave an adolescent, and when to attempt to engage them
- help to implement strategies to assist with distress tolerance or contain emotional dysregulation
- avoid attempts at rescue
- utilise relationships that have previously developed to engender trust and hope during periods of profound hopelessness and despair
- utilise relationships developed during periods of continuous observations to consolidate therapeutic relationships and enhance ongoing interventions once the crisis has eased and in future states of distress

2. Adolescents on an Involuntary Treatment Order (Inpatient Status)

The Model of Service Delivery states that *“The AETRC is gazetted as an authorised mental health service in accordance with Section 495 of the [Mental Health Act 2000](http://www.health.qld.gov.au/mha2000) [http://www.health.qld.gov.au/mha2000]”*

52% of adolescents admitted to Barrett from January 2008 – December 2012 were either admitted with, or at some point during their treatment placed on an involuntary treatment disorder. Two thirds were because of their suicidal risk.

3. Seclusion

Seclusion is an intervention of the last resort. In the five years in which comparative data was collected by the Seclusion and Restraint Benchmarking Project, and later the CYMHS Clinical Collaborative, Barrett had the lowest rates of seclusion of the adolescent inpatient units in Queensland, although the adolescents often presented with sustained high acuity. Seclusion has most often been used for an adolescent who is not only at extreme risk to themselves, but also to

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staff. It is not used to manage aggressive behaviours per se, because of the availability of open spaces and other measures for de-escalation.

Under the *Mental Health Act 2000*, seclusion can only be used on an involuntary patient in an Authorised Mental Health Service.

4. Observations on Continuity of Care

Over the years, various interventions have been trialled with adolescents including managing high acuity in acute inpatient units e.g. highly suicidal behaviours or the need for nutritional restoration where the medical condition is such that it could be managed in a mental health unit rather than a medical unit.

There are perhaps five instances in the last 25 years where this has aided therapeutic progress. In most instances, it has proved to be a significant disruption to therapeutic alliances important for treatment and rehabilitation. This is particularly significant for those adolescents whose history of loss has contributed significantly to their current psychopathology.

Having skilled staff who can manage high levels of acuity is important.

5. Observations on Stability of Staff

A closed roster for nursing staff has 21 permanent staff on a fortnightly roster to cover the three shifts over seven days a week. Nursing numbers are reduced over the weekend because some adolescents are on leave.

Over the past two years we have had 14 permanent staff, with 3 or 4 graduate nurses on 4 month rotations, and other positions filled by contract and casual staff. Recently we have been able to secure the services of some excellent contract staff. However, for the 12 months from June 2010, we were only able to have staff on 6 week contracts. With holidays, sick leaves etc, and the demand for staff if several adolescents were on continuous observations, there were some shifts that had only one or two permanent staff. In addition, there were two vacant Clinical Nurse positions, so clinical leadership on a shift was inconsistent.

These variations in staff stability and permanency allow observations about the importance of stable skilled workforce to the unit. Briefly, we observed:

- adolescents and their parents complained about inconsistencies in management. Adolescents complained about the lack of staff with whom they built trust and rapport
- therapeutic interventions (described below) did not occur
- the use of prn medication increased, because staff on a shift may have lacked skills for more appropriate interventions
- rates of seclusion increased a little
- adolescents were placed on continuous observations at a lower threshold, because staff lacked the experience of patients to recognise early warning signs
- graduate nurses did not benefit from their placement because of the lack of mentoring and staff cohesion

6. Observations on Skill Mix for the Inpatient Unit

The majority of staffing for the residential section has been Registered Nurses. The exceptions are

- two long term Enrolled Nurses have made an invaluable contribution
- 3 – 4 graduate nurses undertaking their mental health training have been a regular part of the nursing establishment for the past decade. Observations of the performance of this group of staff who have considerable training provide some evidence for staffing with residential workers.

Graduate nurses report the skills they develop on the unit include:

- learning to observe mental state and behaviours for early warning signs of distress
- learning the skills of therapeutic relationships including boundaries, promoting and monitoring developmental tasks, application of a range of interventions
- developing a range of behavioural interventions for specific behaviours

Some are observed to develop these skills from early in their rotation, but the majority are beginning to grasp the basic concepts by the end of a four month rotation. Those who return to the unit after they have finished their formal training continue to develop over the next twelve months. This is consistent with internships in other areas.

These observations that registered nurses offer the necessary skills for an inpatient unit compared to being staffed with a majority of pre-graduate residential workers is consistent with overseas experience (Greenfield, Larson, Hechtman, Rousseau, & Platt, 2002). In this study, the intervention was conducted utilising experienced mental health nurses or final year medical students, both supervised by a child and adolescent psychiatrist. Improvements were greater on all measures with experienced mental health nurses.

7. Observations on Skills Utilised by Registered Nurses During 24 Hours of Care

Skills observed to be necessary in staff, and available through registered nurses include:

- Possessing knowledge of the presentations of mental illness. Often adolescents admitted to Barrett have complex presentations which makes diagnosis unclear. For example, some adolescents become elevated in mood and behaviour for a few days. Skilled observations of the range of behaviour and continuing assessment of mental state is necessary to determine whether this is a picture of an emerging bipolar illness or a transient elevation in mood.
- The unit is an open unit, with free access to outside areas. Careful observations of mental state are necessary to enable decisions to be made as to whether a potentially suicidal adolescent may require either closer monitoring, or is at risk of absconding. Conversely, some distressed adolescents will benefit from time out in the open spaces. A high capacity to assess risk is necessary to determine which interventions are the most appropriate.
- Generalisation of skills learnt in groups or individual therapy to the adolescent's day to day living situation. Skills include those that are part of Dialectical Behaviour Therapy, skills from Social Skills group or maintenance of graduated exposure through activities.
- Managing emotional dysregulation. This is a complex set of skills because staff need to be able to recognise the impact of their own emotional responses, know when to allow to

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ventilate, when to set limits, when to simply sit with an extremely sad adolescent, when to offer hope or simply contain an affect, when to offer specific interventions e.g the sensory room or the opportunity to do art and when to use the opportunity to process the current emotion. This is one of the most important therapeutic processes in adolescents who are very distressed. The relationships built up during these periods are a necessary function of furthering therapeutic interventions from both nursing staff and other professionals.

- Managing behaviours. Again, this requires a complex set of skills of observing antecedents, utilising an appropriate behavioural intervention and monitoring the outcome. Self harm in this population of adolescents is not uncommon. Contagion effects occur at times, but most adolescents, by the time they are referred here, utilise self harm as a specific coping measure, and are minimally influenced by others. At times the self harm may be associated with increased levels of suicidal ideation. Staff must be able to recognise and contain their own anxiety, understand the interpersonal and systemic dynamics of self harming behaviours and decide on a range of appropriate interventions including closer observations, minimising risk to others, enabling adolescents to process the role of self harm and alternative strategies, and negotiate acceptable practices around self harm.
- Monitoring and managing compromised medical states. It is not unusual for adolescents with histories of complex trauma to have significant difficulties for periods of maintaining an adequate oral intake. The impact of this on nutritional status ranges from a barely adequate intake resulting in weight loss, but no changes in physical signs to severe dehydration to severe malnourishment. Interventions are difficult. At the most basic level, staff must be able to monitor basic physical signs, and note changes indicative of deterioration. Skilled staff with an understanding of the impact of trauma can negotiate (in conjunction with advice from the dietitian) a basic level of intake to maintain homeostasis. At times, intravenous hydration or parenteral nutrition may be required. Although this may be initiated in a medical setting, it may need to be continued at Barrett if it continues for any length of time. The success of this intervention is dependent on a skill level to be able to manage intravenous or parenteral nutrition administered by staff with whom the adolescent has already developed a sound therapeutic relationship.
- Providing therapeutic interventions. For example, an adolescent with a severe Social Anxiety Disorder may be phobic eating with other adolescents. Skilled staff will be able to negotiate a process for eating meals with progressive gradual exposure to being able to tolerate eating with others. They must be able to recognise whether a reluctance to proceed to increased contact with others at meal times is simply entrenched avoidant behaviour, or whether the anxiety is still too high. Another example is managing symptoms of Post Traumatic Stress Disorder in adolescents with histories of severe and complex trauma. Frequently dissociation and flashbacks occur in the evening, and interrupt sleep if the adolescent is woken by nightmares. This requires a complex set of skills in staff from grounding, emotional containment, allowing appropriate exploration of the trauma if the adolescent needs to do that at that time and encouraging the adolescent to employ strategies and skills they have been developing.
- Provide Care Coordination. Relationships are built with adolescents and their families across shifts and in a variety of situations not available to other professions. This, together with the skills of nursing staff enables them to function in the complex role of Care Coordinator.

8. Observations on Referrals from the Mater Acute Inpatient Unit/Day Program

There have been occasions where adolescents have had extended inpatient care in the Mater CYMHS Acute Inpatient Unit and attended the Day Program. Although this has continued for a time, they have been referred to Barrett for further treatment and rehabilitation due to the unsuitability of being in an Acute Inpatient Service. Although this is an unusual pathway for referral, it does illustrate the limitations of acute inpatient care for this population.

In summary, multiple lines of evidence – evidence of high acuity, the need for an appropriate level of care as an Authorised Mental Health Nurses, the need for continuity of care and the requirements for the skills of registered nurses – together with lack of alternative models for this population, suggests that inpatient care must be a component of the new service.

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