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5 **Transition in ADHD: attention to the lifespan**

6

7 **Abstract**

8 **Objectives**

9 This paper reviews the importance of transition to adult services for young people with
10 ADHD. Different models are described and evidence sought for their effectiveness in
11 clinical practice.

12 **Results**

13 Models of care for children with ADHD include specialised mental health services, and
14 individual paediatricians and child and adolescent psychiatrists. Although it might be
15 expected that transition would be to equivalent adult teams or specialists, studies have
16 shown that transition may not run smoothly and the adult services are frequently
17 inadequate. This may result in attrition from treatment or discharge to the general
18 practitioner.

19 **Conclusion**

20 Adult mental health services for transitioning young people with ADHD are under-
21 resourced. The way of the future may be the generic ADHD specialist or service, treating
22 ADHD across the lifespan and avoiding the need for transition.

23

24 **Introduction**

25 Transition of individuals from paediatric to adult services comes at the critical stage of
26 life when mental disorders with a long-term impact may first become apparent¹. ADHD
27 is associated with ongoing functional impairment across the lifespan and is also a risk
28 factor for developing other psychiatric diagnoses². Therefore transition and ongoing
29 appropriate care into adulthood is particularly important for young people with ADHD.
30 For successful transfer, the receiving team or clinician needs to understand and be able
31 to meet the needs of the young person.

32

33 **Importance of ongoing care into adulthood**

34 ADHD is often considered to be a disorder of childhood because the most obvious
35 symptoms - hyperactivity and impulsivity - tend to improve with age³. This may result
36 in adults no longer meeting symptom-based diagnostic criteria. However, the executive
37 functioning deficits persist and may be associated with lifelong impairment. This may
38 manifest as difficulty sustaining long-term employment and relationships, more sexual
39 partners and earlier parenthood⁴. ADHD is common at all ages: a large German
40 community study found a prevalence of 4.5% in adults, which was comparable to
41 depression (8.0%) and anxiety (7.1%)⁵. Adults with ADHD have higher death rates,
42 particularly accidental death and death associated with substance use disorder⁶.

1 Although the cognitive deficits associated with ADHD tend to be very stable across the
2 lifespan, the expression of ADHD varies according to the stage of development. Because
3 an individual's requirement for sustained concentration is usually greatest during their
4 years of education, many people with ADHD cease medication once they leave school. A
5 large multicentre study of children with ADHD documented a reduction in medication
6 use by 62% over 6-8 years of follow-up to age 13-18³. However, although the symptom
7 scores declined, there was still evidence of persistent deficits, particularly in those with
8 comorbid oppositional defiant disorder and conduct disorder.

9 ADHD in adults it is associated with poorer functioning across a range of occupational,
10 social and family domains and lower quality of life². Taking on an adult role in society,
11 with associated work and family commitments, usually requires a high level of
12 organisational skills. Adults with ADHD experience more stress-related symptoms and
13 have higher rates of psychiatric comorbidity, including generalised anxiety disorder,
14 obsessive compulsive disorder, social phobia, major depression and substance use
15 disorders.

16 There is evidence that ongoing and appropriate treatment is associated with better
17 functional outcomes in adulthood. These include better personal relationships, fewer
18 car accidents and lower crime rates^{7, 8}. However, adherence to medication may not be
19 consistent. Factors associated with discontinuing treatment include poorer treatment
20 response⁹, indicating the importance of dose optimisation. Mental health services have
21 an important role for individuals of all ages with ADHD, many of whom require ongoing
22 treatment across the lifespan.

23

24 **Models of care**

25 The particulars of the process of transition to adult services will depend on the available
26 services and the model of care. There is evidence that adult ADHD is responsive to
27 stimulant medication¹⁰, therefore any service must have some provision for medical
28 input in order to be able to optimise care.

29 The two main models are:

- 30 a) management within specialised mental health teams, with transition from the
31 child and adolescent mental health services (CAMHS) to the adult mental health
32 services (AMHS);
- 33 b) management by specialised individual practitioners, usually paediatricians or
34 psychiatrists, with transition from a paediatrician or child psychiatrist to an
35 adult psychiatrist.

36 These models may also involve the general practitioner (GP), who may share the
37 ongoing care. The limited published data on transition in ADHD suggests that each of
38 these models may fall short of the ideal of a smooth transition to appropriate, ongoing
39 care for the young adult with ADHD. A third model that avoids the need for transition is:

- 40 c) care by a single specialist or service treating individuals with ADHD across the
41 lifespan.

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43

1 **Transition to specialised AMHS**

2 For childhood ADHD, management guidelines generally recommend psychological
3 intervention, with medication when significant impairment persists^{11, 12}. This
4 multidisciplinary management may be provided in a specialised CAMHS, who would
5 continue care until the individual is either discharged or transitioned a comparable
6 AMHS. In some regions the AMHS may not provide an equivalent service that follows on
7 from the CAMHS. For example the AMHS may not accept young people with ADHD, or
8 there may be a perception that the AMHS lacks the necessary expertise to treat ADHD^{13,}
9¹⁴. The TRACK study evaluated the transfer process from the CAMHS to the AMHS in six
10 UK Mental Health Trusts using specific criteria that emphasised continuity of care¹⁵.
11 The criteria stipulated a formal plan, which included arranging a meeting with at least
12 one clinician from each service, with discharge from the paediatric service only
13 occurring after a transition period resulting in successful engagement with the adult
14 team¹⁵. For the majority of users, clinical practice fell short of this ideal, although in
15 many cases it was the young person who rejected transfer and was referred back to
16 primary care¹³. A study of 18 Italian Regional ADHD Pediatric Centers (RAPC) found
17 that 25% of adults aged 19-21 (95% pharmacologically treated) were still managed by
18 the RAPC and only three (6%) had been referred to adult mental health services¹⁶. The
19 majority (69%) were being managed by their GPs although only 6% had been formally
20 discharged from the RAPC.

21 Transition for young people with ADHD is often complicated by the scarcity of adult
22 psychiatrists able and willing to treat them¹⁷. This is a particular problem in rural
23 Australia, where young people may be at higher risk of mental health disorders but
24 have fewer services¹⁸. The transition of adolescents and young adults with ADHD to
25 AMHS may be hampered by a perception that ADHD is not really part of mainstream
26 psychiatry. For example in Victoria the AMHS 'are aimed primarily at people with
27 serious mental illness,' examples of which include schizophrenia, bipolar disorder,
28 severe personality disorder, or severe anxiety disorder¹⁹. In Queensland the state
29 funded mental health services treat 'common mental illnesses and disorders' such as
30 depression, anxiety, bipolar disorder and schizophrenia; the information given on
31 ADHD relates only to children²⁰. The Strategic Plan for Mental Health in NSW 2014 –
32 2024, published by the NSW Mental Health Commission, actually states that
33 'developmental disabilities, such as attention deficit hyperactivity disorder (ADHD)
34 are generally not within the scope of the Plan'²¹. Therefore individuals with ADHD
35 transitioning to adult services may have their treatment options limited to psychiatrists
36 practicing in the private sector.

37

38 **Transition to individual psychiatrists**

39 Although the multidisciplinary management of ADHD has been put forward as the
40 ideal¹², in Australia most children are managed by paediatricians in private practice,
41 often with the support of allied health therapists²². As there is no adult equivalent of the
42 behavioural paediatrician, a young person might expect transition from their
43 paediatrician to an adult psychiatrist.

44 There is little published data on the transition from individual paediatric to adult
45 specialists. However, prescribing data may provide indirect evidence of the
46 effectiveness of transition. In NSW paediatricians are permitted to prescribe for
47 children and young adults to the age of 25. In 2003 the proportion of currently treated

1 18-21, 22-24 and 25-29 year olds in NSW who had been on stimulant medication
2 continuously for more than 9 years was 13.1%, 5.9% and 2.2% respectively ²³. This is
3 consistent with substantial attrition as individuals reach the age of transition.

4 Barriers to transition to private adult psychiatrists may include the expense of private
5 fees. Adult psychiatrists may not be adequately trained in the management of ADHD or
6 may choose not to prescribe stimulants¹⁷. This can result in sub-optimal outcomes for
7 individuals being treated for anxiety or depression by psychiatrists who fail to diagnose
8 and treat the underlying ADHD¹⁷. Similarly, stimulant medication may not be
9 considered the appropriate treatment for those with substance abuse or antisocial
10 behaviour.

11 The shortage of psychiatrists for transition of care can be alleviated by involvement of
12 the GP. In NSW, care can be transferred to a GP after six months of treatment by a
13 psychiatrist ²⁴. However, this arrangement depends on the GP having ongoing support
14 by the psychiatrist for changes in dose. In rural Australia, telemedicine may be well-
15 accepted and considered preferable to the expense and difficulty of travelling large
16 distances to access psychiatrists²⁵. However, telemedicine still depends on the
17 availability of psychiatrists for consultation.

18

19 **The way forward: unified ADHD services across the lifespan**

20 Transition can be an expensive process in time and resources. It takes time for a new
21 doctor or therapist to get to know a young person with ADHD and understand their
22 problems. Transition might also involve a detailed re-evaluation of the diagnosis of
23 ADHD, including a trial off medication, to give the treating psychiatrist or team an
24 opportunity to assess the indications for continuing treatment. This whole process may
25 be expensive, time consuming and potentially frustrating for the young person, which
26 could explain why some decline transfer ¹³.

27 As ADHD is a condition which frequently requires continuous treatment extending over
28 many years, it may be appropriate to consider a continuous service that caters for all
29 ages, avoiding the need for transition. This is already provided by a limited number of
30 specialists qualified in child, adolescent and adult psychiatry. These psychiatrists are
31 also in a position to treat other family members, which may be useful given the
32 heritability of ADHD²⁶. A trans-generational, family approach to ADHD would be able to
33 address the difficulties that parents may have with being organised and consistent in
34 their parenting, due to their own untreated ADHD.

35

36 **Further research**

37 Research into the views and experience of patients and clinicians is important for
38 understanding how the current transition processes for ADHD can be improved.
39 Regional variations in prescribing data might identify areas of particular need, perhaps
40 highlighted by clusters of individuals stopping treatment once they reach the age of
41 transition and subsequently restarting after failure.

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43

1 **Conclusion**

2 Transition, occurring at a critical and potentially vulnerable stage of development, is a
3 time when the relationship with the treating doctor or team may provide much-needed
4 stability. Although many of the principles of successful transition of children and
5 adolescents with ADHD to adult services have been established, the available evidence
6 appears to indicate that in many regions, the resources and expertise are inadequate to
7 meet the demand. This may lead to retention within paediatric services, attrition from
8 specialised care, or discharge by default to the general practitioner, who may or may
9 not have the appropriate skills and support. The limited published studies appear to
10 indicate that adult ADHD is under-resourced. Furthermore, ADHD may not fit in well
11 with a model of psychiatric care that principally caters for discrete periods of intensive
12 intervention followed by discharge back to primary care. A more appropriate model
13 might consist of specialised services dedicated to the ongoing care of individuals of all
14 ages with ADHD. The way of the future may therefore be the generic ADHD specialist
15 who treats ADHD across the lifespan.

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