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ROYAL COLLEGE OF PSYCHIATRISTS

ADHD in adults: good practice guidelines

Royal College of Psychiatrists in Scotland

Contents

Contributors

This document was written by the Royal College of Psychiatrists in Scotland special interest group in ADHD, co-chaired by Marie Boilson and Prem Shah.

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In memoriam

This report is dedicated to the memory of Johannes Leuvennik.

Aims and structure

The aims of this publication are to:

- provide psychiatrists with practical, evidence-based guidance in managing adults with attention-deficit hyperactivity disorder (ADHD) in mental healthcare settings
- provide those involved in designing mental healthcare services in Scotland with a consensus view on how best to meet the needs of adults with ADHD.

This guidance draws on evidence summarised in established documents, including the National Institute for Health and Care Excellence (NICE) clinical guideline CG72 (NICE, 2008), the British Association of Psychopharmacology's guidelines (Bolea-Alamañac *et al*, 2014) and the European Consensus Statement (Kooij *et al*, 2010).

This is a compact reference guide for those working with this patient group. It is not a substitute for the more extensive guidelines referred to above or for formal clinical training.

Where there is insufficient trial-based evidence, our guidance draws from the clinical experience of the psychiatrists of the Royal College of Psychiatrists in Scotland Adult ADHD Working Group.

This guidance has been developed by the Royal College of Psychiatrists in Scotland to assist psychiatrists and those designing services in Scotland with providing evidence-based care for adults with ADHD. It is thus written to be applicable to the Scottish health system. However, the evidence, principles and approaches it sets out may also be relevant for other jurisdictions of the UK.

Background

Commitment 33 of the Mental Health Strategy for Scotland 2012–2015 (Scottish Government, 2012) undertakes to develop specialist capability with respect to those with neurodevelopmental disorders (NDDs), including ADHD, in adults. Scottish health boards therefore need to address this emergent clinical and educational need.

The evidence base for treatment of adult ADHD is evolving.

- There is strong evidence that ADHD-related impairments persist into adulthood.
- Two-thirds of children diagnosed with ADHD continue to have the full syndrome or are in partial remission beyond the age of 18 (Faraone *et al*, 2006).
- NICE benchmarking suggests that 25 individuals per 100 000 population per year will transition into adult services.
- Between 2.5 and 4% of British adults may benefit from treatment (Faraone & Biederman, 2005).
- ADHD is a highly heritable condition (Faraone *et al*, 2000).

Despite this evidence, levels of adult diagnosis and treatment in Scotland are well below expected. In 2009–2010, 773 individuals aged 20–64 were prescribed medications for ADHD, representing 0.02% of the age group. This rose to 1800 individuals (0.06%) in 2013–2014 (ISD Scotland, 2014). These numbers fall significantly short of the anticipated 2.5–4%. In those younger than 20 years of age, 0.5% in 2009–2010 and 0.6% in 2013–2014 received ADHD medication (ISD Scotland, 2014).

The worldwide prevalence of ADHD in children is estimated at 5%, with 1.5% of children meeting criteria for the more severe form known as hyperkinetic syndrome (Polanczyk *et al*, 2007). This equates to 37 000 and 11 000 children in Scotland, respectively. There are an estimated 4539 children and young people with a diagnosis of ADHD in contact with specialist services (NHS Quality Improvement Scotland, 2008). This suggests that ADHD continues to be underestimated in the Scottish school-age population.

Healthcare Improvement Scotland (2012) found a dearth of services for adults with ADHD, in contrast to the expanding situation in England and Wales.

There is strong evidence that adults with ADHD respond to pharmacological treatments, medication being the first line of treatment in adults (Bolea *et al*, 2012).

Not detecting or treating ADHD has widespread ramifications for society in terms of family life, education, employment, healthcare and crime. The economic costs should not be underestimated (Kessler *et al*, 2006).

The Royal College of Psychiatrists requires all psychiatrists to be competent in neurodevelopmental assessment (Royal College of Psychiatrists, 2010). However, a recent survey by the Royal College of Psychiatrists in Scotland revealed an unmet need for training in the assessment of NDDs in adults, including ADHD. Of respondents, 32% of psychiatrists were not confident in assessing ADHD and other NDDs, and 67% wanted to have further training.

Health boards must provide the necessary training opportunities to all relevant clinicians to develop their skills to the appropriate level of competence. All psychiatrists have a fundamental responsibility to ensure an appropriate level of competency in assessing and managing NDDs.

Not all medications for ADHD in adults are licensed. The established expert in managing young people with ADHD and the substantial evidence base for use of these agents in adults justifies prescribing on an off-licence basis.

We recognise that many psychiatrists are anxious that assessing and managing adults with ADHD may involve extra work for them, within a climate of resource austerity in health services. Nonetheless, we strongly recommend that all psychiatrists dealing with adults must be competent in diagnosing and managing ADHD. This disorder is common and found in all psychiatric subspecialties, often with comorbidities. It is likely that there are patients on existing case-loads who have undiagnosed ADHD.

Service delivery needs to be planned to optimise use of resources. There is scope to learn from models employed by child and adolescent mental health services (CAMHS) and paediatric services. Some investment will be required, but we do not anticipate that specialist services will be required within all health boards.

We also recommend establishing a managed clinical network that develops and shares clinical experience, providing expertise that may not be available locally.

ADHD as a diagnosis in adults

ADHD is one of a number of NDDs. ADHD and other NDDs frequently overlap; there is significant comorbidity with autism spectrum disorder (ASD), for example (Gillberg, 1983).

An individual's general activity levels, and their ability to pay attention, control impulses and regulate mood, are genetically weighted traits which are present from childhood. These traits are distributed as a spectrum in the population, modified by the environment and changeable with age.

ADHD represents individuals who are at the extreme end of a spectrum in terms of degree of inattention, impulsivity and hyperactivity. Not all who are at these extremes have functional impairments or problems, and in certain circumstances these traits can be advantageous to individuals. However, those with ADHD are at substantially higher risk of developing secondary problems, particularly other psychiatric illnesses, substance misuse, and forensic, occupational, interpersonal and social problems (Kessler *et al*, 2006).

The need to demonstrate functional impairment or secondary disabilities is paramount in defining ADHD that may merit intervention; indeed, this forms part of the necessary diagnostic criteria (American Psychiatric Association, 2013).

Adults have to actively choose to manage their ADHD. Some may validly choose not to modify their ADHD in spite of apparent negative outcomes. The individual remains responsible for their behaviour irrespective of treatment.

There are parallels between ADHD and personality disorders – both are trait-based, dimensional and represent individuals at one end of a spectrum. ADHD assessment can be similar to assessing for personality disorder – both require a longitudinal approach with corroborative evidence for diagnosis, and both require a collaborative approach to longer-term management.

General principles in assessing and managing adults with ADHD

The general approach to assessing and managing ADHD is similar to that for any other mental disorder.

Assessment of ADHD is not a clinical emergency. A good-quality assessment takes time and is ideally multidisciplinary, involving information gathered from a variety of sources such as third parties, previous school records and previous health assessments. Longitudinal assessment is also advised.

Management of ADHD is proactively planned in collaboration with the patient. From the very start, the clinician should explicitly use an approach aimed at developing the patient's own ability to self-manage over a lifelong period. Management involves a combination of pharmacological, psychological, educational and skills-based interventions.

The clinician's role is to advise on what interventions are likely to be beneficial. A specific task is to evaluate the balance between risk and benefit of prescribing medications. This is of particular importance given the frequent nature of off-licence prescribing. Prescribing should be safe. It is possible, for example, that drug treatment may be desirable, but that other risks (e.g. risk of diversion, poor social support making adherence poor) may outweigh the potential benefits.

It is important to establish a threshold for impairment. This is a diagnostic requirement. Cut-off points for trait-based disorders can be difficult to define.

Pre-referral recommendations

We recommend that a threshold is set for referral to specialist services, as ADHD is a spectrum disorder and ADHD traits are ubiquitous. There needs to be evidence of a specific cluster of symptoms and significant impairment.

We recommend that local services provide validated screening tools to referrers that confirm symptoms and the presence of impairment in two or more areas of function in those referred for an ADHD assessment. This helps ensure that only those at the more severe end are referred to secondary care services (Box 1).

Box 1 Screening tests for adult ADHD

- **Adult ADHD Self-Report Scale (ASRS) (Kessler *et al*, 2005). This covers DSM-IV items**
- **Weiss Functional Impairment Rating Scale (W-FIRS) (Weiss *et al*, 2007)**
- **10-item Autism Spectrum Quotient (AQ-10) (Allison *et al*, 2012)**

We recommend that local services encourage referrers to screen for other NDDs, particularly ASD, because of high rates of comorbidity.

Patients may have had relevant assessments carried out by other health professionals (e.g. educational psychologists). We recommend that these should be made available when the referral is made.

Clinicians should be mindful that there might be external pressures or agencies driving a request for referral. The motivation may not have arisen from the patient themselves. This may have a significant negative impact on engagement and on planning efficacious treatment, at the cost of clinical time.

Referrals to mental health services

As medication is first-line treatment, a relevant medical history is required of the referrer, particularly in terms of cardiovascular, neurological and hepatic disorders, including a record of the patient's most recent blood pressure and pulse (Box 2). The role of the mental health practitioner in secondary care is to ensure that:

- a satisfactory evaluation for ADHD is conducted and criteria are met
- other psychiatric conditions and other important contributory factors are identified and treated
- there is appropriate liaison with other agencies and disciplines
- a management plan is agreed with the patient; ADHD may not necessarily be the first priority for treatment
- a risk–benefit analysis for ADHD medication is conducted
- medication is titrated to a therapeutic dose while monitoring clinical response and any side-effects.
- appropriate non-pharmacological treatments for ADHD are offered if available.

Box 2 Physical health checklist

- **Blood pressure**
- **Pulse rate**
- **Weight**
- **Height**
- **History of cardiovascular disease**
- **History of tics or epilepsy**
- **Family history of cardiovascular disease before age 55**
- **History of liver disease**

Diagnostic reliability depends on a longitudinal assessment of the patient, together with third-party information. It is usually not possible to diagnose ADHD on the basis of a single assessment only. Assessment should be carried out on a multidisciplinary basis. There are freely available tools that can be used by mental health professionals to guide the assessment of ADHD (see 'Assessment', pp. 11–14).

There are four common scenarios in which psychiatrists may encounter adult patients with ADHD, each group raising specific issues.

Transition patients

Diagnostic rates of ADHD in children and adolescents in Scotland remain below UK and European averages (0.6% of those below 20 years in 2014), but are rising towards the expected prevalence (ISD Scotland, 2014)

Many young adults benefit from continuing treatment beyond the age of 18 (10% still meet criteria for the full syndrome, with up to 66% in partial remission) (Faraone *et al*, 2006), and are therefore referred to adult services for specialist supervision.

Protocols for transition may vary between areas and suggested standards have been developed by the Royal College of Psychiatrists in Scotland Adult ADHD Working Group (Appendix 1).

Drug treatment for ADHD in adults is often off-licence. The daily management of medication is often passed from the parent/carer to the young adult at this stage.

Many young adults will initially attend with a parent who may have expectations of services based on their experiences of CAMHS. Young adults are frequently highly ambivalent about continuing ADHD treatment, and it is not unusual for young adults to stop treatment (McCarthy *et al*, 2009). For this reason, it is important that part of the interview take place with the young person on their own to allow for expression of views that may differ from those of the parents.

With this patient group, the basic roles of adult services are to:

- evaluate whether medication is still required (e.g. test out the effects of 'drug holidays')
- monitor side-effects and/or adverse effects
- identify and manage any psychiatric comorbidity
- identify and provide appropriate non-pharmacological treatments.

Patients previously diagnosed in childhood, re-referred for treatment

About 50% of children with ADHD do not require transition to adult services. Additionally, a further proportion may drop out of follow-up and treatment at transition. These adults may be re-referred looking to reinitiate ADHD treatment, particularly at times of life transitions or when experiencing major stressors that may augment the impairment associated with ADHD symptoms (Young *et al*, 2011*a*).

Historically, such adults were often not referred because of lack of recognition of need, and lack of service provision. It follows that referrals from this group will increase disproportionately as awareness increases.

CAMHS and paediatric services will have pertinent past information. Having this available would greatly reduce the time required to plan the future management of these individuals. Clinicians may need to request this information if it is not provided at time of referral, which may delay an initial assessment.

As with any other medication, clinicians will need to conduct a risk–benefit analysis and discuss this with the patient before recommending pharmacological treatment, incorporating the specific risks associated with stimulant use.

Patients diagnosed in other countries, or in non-NHS settings, should be encouraged to provide previous medical reports confirming diagnosis and treatment before the initial appointment. Without sufficient supporting evidence of a comprehensive diagnostic assessment, a standard assessment for ADHD will need to be carried out. General practitioners (GPs) referring those who have been diagnosed in other countries or in non-NHS settings should inform their patients that they will need to provide relevant medical reports in advance to expedite assessment and treatment.

Adult patients referred for assessment of potential ADHD

Parents of children with ADHD may seek assessment as they recognise their child's traits within themselves or they may be alerted by their child's clinician. This is unsurprising as ADHD is highly heritable.

There is increased awareness in society of ADHD as a condition, which can be a trigger for referral requests. This is of particular relevance given the historical underrecognition of ADHD (Royal College of Psychiatrists in Scotland & Addressing the Balance, 2012) and probable missed diagnoses as a consequence.

Individuals already engaged with mental health services

There is evidence that many adults with undetected ADHD exist on the case-loads of community mental health teams (CMHTs). All members of the multidisciplinary team should have an awareness of the core features of ADHD and the potential for a missed primary or comorbid diagnosis (Deberdt *et al*, 2015).

Assessment

We suggest that in most cases, assessment and diagnosis of ADHD will require two to three 1 h sessions. It is important to stress that this process does not need to be rushed; by definition, these patients are likely to have experienced these difficulties for many years. For some, evidence for the diagnosis of ADHD may be fairly compelling by the end of the first 1 h appointment. For others, without clear evidence of the disorder, the process will end at this stage or may proceed to consider a different diagnosis.

General psychiatric history

- Assessment for symptoms of ADHD, with reference to DSM-5 criteria (American Psychiatric Association, 2013).
- Special attention should be paid to the age at onset of symptoms/behaviours (whether onset was before 12 years of age), the developmental history and any family history of ADHD and other NDDs (e.g. ASD, Tourette syndrome, dyslexia, dyspraxia).
- Diagnosis in adults requires the presence of five symptoms, rather than the six required for children, in the categories of inattention, hyperactivity and impulsivity.
- Mental state examination should be completed in the normal way, taking into consideration that, in a novel setting, patients may not overtly display the core symptoms of the disorder.
- Note that non-specific symptoms commonly presenting in adults with ADHD include affective instability.

Developmental history

A comprehensive developmental history is critical. Contact with the following health professionals in infancy and childhood (up to 5 years of age) may indicate increased vulnerability to NDDs (Gillberg, 2010):

- speech and language therapists because of delayed/peculiar communication difficulties, social skills difficulties
- occupational therapists because of motor skill difficulties, e.g. delays, tics, repetitive movements, stereotypies, coordination difficulties
- health visitor (frequent visits) because of general developmental concerns
- community or hospital-based paediatrics because of problems with toilet training, attention, activity, behaviour, mood and sleep regulation.

See Appendix 2.

Corroborative history

Because of the diagnostic importance of assessing childhood behaviour and establishing the onset of difficulties before the age of 12 years, obtaining a corroborative history is particularly important in the diagnosis of ADHD in adults. This should be emphasised to the patient and their family.

Ideally, the opportunity should be sought to speak directly with a parent or relative who has known the individual since childhood (face to face or by telephone). This will also allow consolidation of the developmental history. Where this is not possible, other evidence of childhood behaviour, e.g. school report cards and other records, may be sought with patient consent. Some individuals with poor organisational skills may have difficulty facilitating this; consent could be sought to approach relatives or other informants directly.

In certain circumstances, CAMHS and/or paediatric case notes, social work records and current college reports and/or work appraisals can additionally inform the assessment.

Failure to obtain corroborative history should not exclude patients from diagnosis and treatment if these are otherwise indicated.

Instruments to aid the diagnostic process

We recommend the use of validated instruments to support diagnosis as part of the assessment process, but it is not a substitute for careful history-taking and clinical evaluation of symptoms and degree of impairment. There are several validated tools available (Box 3). Additional screening tools can be sent to the patient in advance of the appointment or given to them to complete in the waiting area prior to the appointment.

The Diagnostic Interview for ADHD in Adults (DIVA) questionnaire (Kooij & Francken, 2010) is the most widely used diagnostic tool in the UK and may be a useful option. This is a structured interview that is simple to administer, and addresses current and childhood behaviours in addition to impairment, based on DSM criteria. It is freely available and, with practice, takes about an hour and a half to complete. Owing to the nature of the condition, completion of the DIVA in one session may not always be possible.

Although neuropsychological assessments – e.g. the Wechsler Adult Intelligence Scale (WAIS) (Wechsler, 2008), test of everyday attention and Stroop test – are not routinely undertaken in the majority of cases, they can be helpful where the diagnosis remains unclear.

Box 3 Assessment tools

Retrospective

- **Wender Utah Rating Scale (free) (Ward *et al*, 1993)**
- **Childhood Symptoms Scale (one-off payment) (Barkley & Murphy, 2006; Barkley, 2007)**
- **Childhood behaviour scales – self-report (Appendix 5) and parent report**

Current self-report

- **Conners' Adult ADHD Rating Scales (pay per use) (Conners *et al*, 1999)**
- **Current Symptoms Scale (one-off payment) (Barkley & Murphy, 2006; Barkley, 2007)**
- **Adult ADHD Self-Report Scale (free) (Kessler *et al*, 2005)**
- **ADHD Self-Report Scale (pay per use) (Rösler *et al*, 2006)**
- **Copeland Symptom Checklist for Attention Deficit Disorders (free) (Copeland, 1987)**
- **Weiss Functional Impairment Rating Scale (free) (CADDRA, 2014)**
- **Current Behavioural Scale – self-report (Appendix 5)**

Current observer report

- **Brown ADD Rating Scales (pay per use) (Brown, 1996)**
- **ADHD – Other Report Scale (pay per use) (Rösler *et al*, 2006)**
- **Current Behaviour Scale – partner report (Appendix 5)**

Diagnostic instruments

- **Diagnostic Interview for ADHD in Adults (DIVA) (free) (Kooij & Francken, 2010)**
- **Conners' Adult ADHD Diagnostic Interview for DSM-IV (Epstein *et al*, 2001)**

Impairment of functioning

The presence of significant impairment of functioning in two or more domains is a requirement for diagnosis. This is addressed in DSM-5 (American Psychiatric Association, 2013); it is also addressed in the DIVA questionnaire. The Weiss Functional Impairment Rating Scale (W-FIRS) is an additional tool that supports this (CADDRA, 2014).

Impairment is particularly relevant in terms of deciding who to treat, and it is important to establish a robust threshold which clinicians can apply consistently. It must be remembered that treatment with medication is not risk free, and that the benefits are likely to be most marked in those with the most significant impairment.

Differential diagnosis

There is considerable symptomatic overlap between ADHD and other major psychiatric disorders, particularly bipolar disorders, emotionally unstable personality disorder and anxiety disorders (Kessler *et al*, 2006). Up to 90% of adults with ADHD experience mood instability that may resemble mood disorders or borderline personality disorders (Asherson, 2005). Mood instability may respond to treatment with medication for ADHD (Skirrow *et al*, 2009). It is worth considering this diagnosis in those with lifelong difficulties who have significant functional impairment, present atypically and are difficult to treat.

Psychotic symptoms are not core features of ADHD and may represent a comorbid diagnosis; such symptoms should be fully evaluated. Stimulant medication may trigger the emergence of psychotic symptoms.

See Appendix 3 for more details.

Comorbidity

Adults with ADHD are significantly more likely than the general population to experience other psychiatric disorders. In particular, mood and anxiety disorders, other NDDs and substance use disorders are potential comorbid conditions (Nutt *et al*, 2007). Overlapping symptoms between disorders can make assessment difficult. A longitudinal history is helpful to elicit trait- and state-based symptoms. Symptoms that are not part of an ADHD clinical picture can also be indicators to help with differentiation (see Appendix 3 for frequencies and overlapping and distinguishing features of different psychiatric disorders).

The presence of other comorbid disorders should not be a barrier to conducting an assessment for ADHD. The nature of the comorbid condition will have an impact on the primacy of treatment. Major mood disorders should be treated prior to assessing for ADHD. Mood instability, as opposed to major mood disorder, in the context of ADHD often responds to pharmacological interventions for ADHD (Kooij *et al*, 2010).

Specific patient groups

When ADHD is complicated by comorbid NDDs such as ASD, which co-exist frequently, management and response to treatment are more complex (Antshel *et al*, 2013). This will often become evident during the course of taking a competent neurodevelopmental history. Where specialist autism services exist, a joint approach is desirable. Comorbid psychosis is less common but can occur and can be more difficult to manage (Donev *et al*, 2011). This document provides generalised guidance (see Fig. 1 for an overview of the assessment pathway); however, practice may need to be individualised for particular patient groups.

Substance misuse

Substance misuse, mostly involving alcohol and cannabis, may be twice as common among individuals with ADHD as in the general population and tends to begin earlier (Breyer *et al*, 2014). Individuals with untreated ADHD may also describe self-medicating with illicit substances. Some patients report paradoxical calming effects from stimulant drugs such as cocaine and amphetamines.

When prescribed stimulants are used appropriately, there is little evidence of patients becoming dependent, and indeed treating ADHD may reduce the lifetime risk of developing a substance use disorder (Biederman, 2003; Dalsgaard *et al*, 2014).

Controlled misuse should not completely preclude treatment, although careful monitoring will be required. In uncontrolled and chaotic patterns of drug and/or alcohol misuse, stimulant medications can be very difficult to manage safely and are not routinely recommended. Where there is a risk of recreational use of non-prescribed stimulants such as cocaine, amphetamines and some novel psychoactive substances, the patient should be warned of potential dangerous interactions with prescribed medication.

Diversion of stimulants is often cited as a reason not to prescribe for this patient group (Wilens *et al*, 2016). However, therapeutic stimulants, particularly long-acting formulations, appear to have limited street value, possibly owing to their pharmacokinetic properties (being slow to reach peak blood levels, they are not very effective at producing a ‘buzz’). Risk for diversion is significantly reduced with the use of slow-release preparations. Risks can also be minimised by supervised daily administration by third parties. Clinicians should be mindful of the use of these medications as cognitive enhancers in student populations (Wilens *et al*, 2016).

Significant and comorbid substance misuse should be managed jointly between general adult and addiction services in accordance with existing local protocols.

Intellectual disability

The reported prevalence of ADHD in adults with intellectual disability varies widely. This variability is accounted for by the range of definitions and diagnostic criteria used. Prevalences of 16% have been reported across a wide range of severity (La-Malfa *et al*, 2008).

ADHD in the intellectually disabled population is associated with an increased occurrence of challenging behaviour, stereotypies, self-harm, anxiety, oppositional defiant disorder, tic disorders and sleep problems (Simonoff *et al*, 2013).

Drug and alcohol use during pregnancy, maternal infection, encephalitis and some genetic disorders (William's syndrome, Turner syndrome, fragile-X syndrome and phenylketonuria) have been associated with ADHD in patients with intellectual disabilities (Dichter *et al*, 2012; Green *et al*, 2012). It is important to establish all possible aetiological factors before starting treatment for ADHD, as addressing these can improve symptoms of ADHD.

People with intellectual disabilities have also been shown to be more sensitive to side-effects from medication (Simonoff *et al*, 2013).

The forensic population

Childhood ADHD has high rates of comorbidity with oppositional defiant disorders and conduct disorders. The presence of conduct disorder, in turn, is associated with the development of dissocial personality disorder in adults (Hofvander *et al*, 2009).

Adults with untreated ADHD are often bored, sensation seeking or impulsive; this combination of states can result in poor judgement, with criminal acts as a consequence. The prevalence of ADHD in the prison population is accepted to be much higher than in the general population, with estimates of between 25 and 40% (Ginsberg *et al*, 2010). ADHD is associated with higher rates of comorbidity, worse quality of life and higher risks of suicidal behaviour (Young *et al*, 2011*b*). However, it is important to recognise that most people with ADHD do not commit crimes. Evidence suggests that treatment of ADHD in the prison population may reduce the risk of future offending (Lichtenstein *et al*, 2012)

The issue of criminal responsibility often arises. ADHD is not usually regarded as the type of mental condition which would give rise to a 'not guilty by reason of mental disorder' defence, but it has been accepted by at least one court as grounds for abnormality of mind

in the context of a murder trial. It may be raised as general mitigation before the courts, and it may form the grounds for an assessment order under criminal procedure. Compulsory civil detention is not seen as appropriate under the Mental Health (Care and Treatment) (Scotland) Act 2003; our current understanding of the condition would suggest that it does not significantly impair decision-making ability. ADHD is a dimensional condition; its management requires a collaborative approach between clinician and patient that does not readily lend itself to compulsory measures or in-patient treatment.

High rates of substance misuse are also described in this population. Supervised consumption of medication can help manage risks of diversion. Efforts should be made to ensure continuity of treatment on release from custodial settings by liaising with local services in advance.

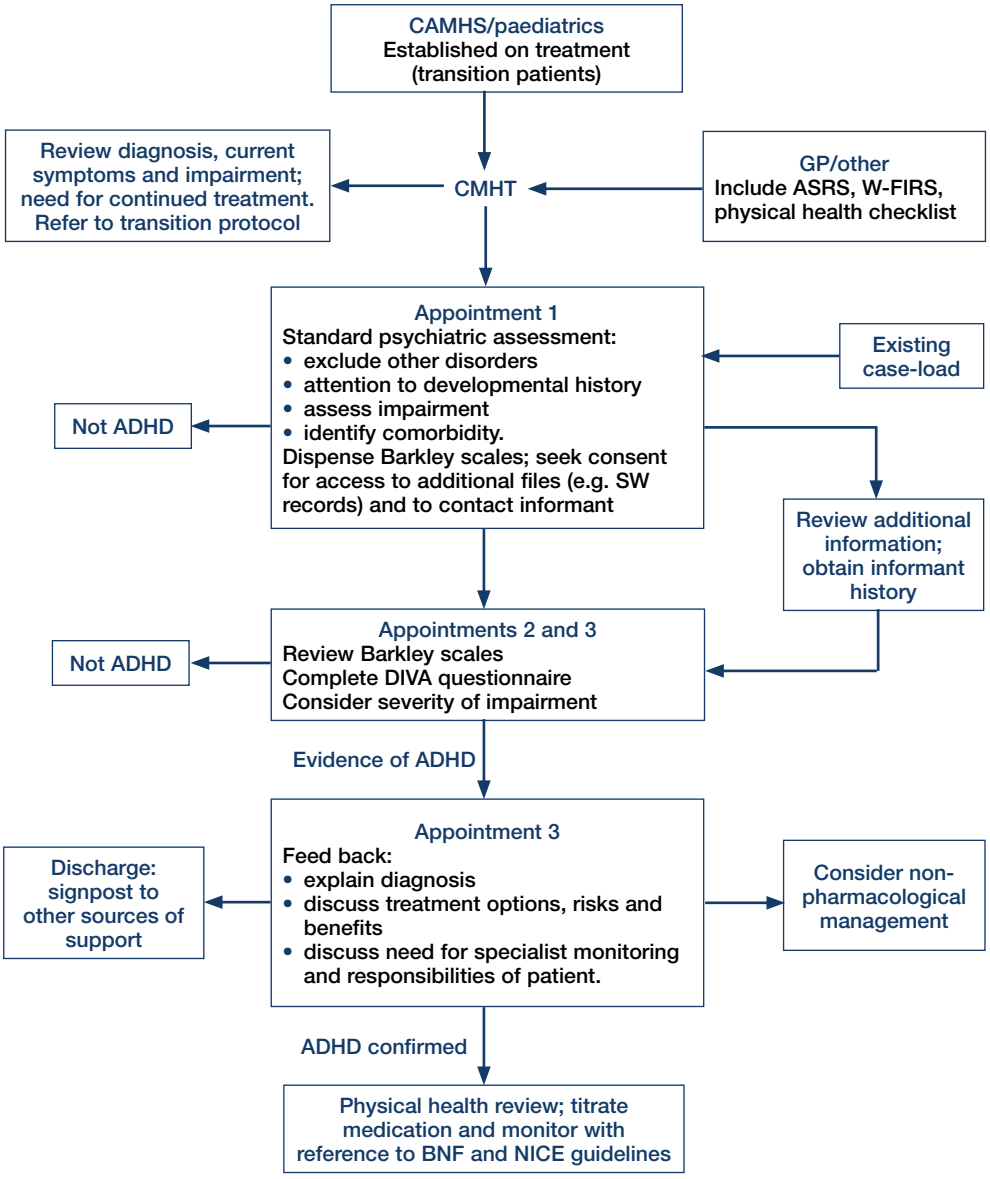

Fig. 1 Pathway for assessment of attention-deficit hyperactivity disorder (ADHD) referrals in adults. ASRS, Adult ADHD Self-Report Scale; BNF, British National Formulary; CAMHS, child and adolescent mental health services; CMHT, community mental health team; DIVA, Diagnostic Interview for ADHD in Adults; GP, general practitioner; NICE, National Institute of Health and Care Excellence; SW, social work; W-FIRS, Weiss Functional Impairment Rating Scale.

Management of ADHD

Implications of diagnosis

When a new diagnosis of ADHD is made in adulthood, there can often be a sense of relief that an explanation has been found for lifelong difficulties. There may also be resentment that the diagnosis was not made earlier.

It is important to frame ADHD as being a condition that the patient has a responsibility for managing, by promoting a sense of personal agency.

Patients may be required to inform their employer or educational establishment.

ADHD is also a notifiable condition for the DVLA (www.dvla.gov.uk). Patients should be informed that this is their responsibility. Treatment for ADHD has been shown to significantly improve driving safety (Jerome *et al*, 2006).

Education about ADHD is important. A variety of self-help books and websites exist for adults with ADHD (see Appendix 4 for details).

Although diagnosis alone is all that some patients want, most will want to explore formal treatment options such as medication.

Treatment

Medication is recommended as the first-line treatment for ADHD in adults with moderate to severe impairment (NICE, 2008). Table 1 gives an overview of medications used in adult ADHD.

Drug treatments can be classified into stimulants (methylphenidate, dexamfetamine) and non-stimulants (atomoxetine, clonidine, bupropion etc.). Stimulants have an immediate action and can therefore be titrated more quickly. The mechanism of action of ADHD treatments involves increased availability of dopamine and/or noradrenaline at the synaptic level, with non-stimulants having a delayed onset of action similar to that of antidepressants. Stimulants have an appreciable positive effect on attention in those without ADHD, and a 'therapeutic trial' therefore has no diagnostic value.

Stimulants have more potential for diversion/misuse, particularly immediate release preparations.

Some treatments used for ADHD in adults are off-license. The Royal College of Psychiatrists has produced a consensus statement for

use of licensed medicines for unlicensed uses (Royal College of Psychiatrists, 2007). Before prescribing, the clinician must ensure that the patient knows of the unlicensed use and understands the potential risks and benefits of the medication, that this is documented clearly, and that the patient is able to give fully informed consent. If prescribing responsibility is to be shared with primary care, the clinician should ensure that the risk assessment and consent issues are communicated to the GP.

At the time of writing, atomoxetine and lisdexamfetamine are licensed for initiation and continuation in adults. Concerta XL (methylphenidate modified release) has a licence for continuation of treatment established in childhood into adulthood (Joint Formulary Committee, 2016).

Although many treatments are not licensed in the adult population, this should not prevent medications being prescribed according to best practice.

Pre-treatment screening should include measuring baseline ADHD symptom severity, impairment, weight, heart rate, blood pressure and sleeping pattern. ADHD treatments can exacerbate seizures and tics. A history of these conditions should be directly asked about.

An electrocardiogram (ECG) is required if any of the following are present: family history or medical history of serious cardiac disease; family history of early cardiac death; or abnormal findings on cardiac exam. Further investigation and/or liaison with cardiology may be indicated in these situations.

See the physical health checklist (Medical Assessment Tool for Adults with ADHD) in Appendix 5.

Methylphenidate

- Recommended as the first line of treatment for ADHD in adults (NICE, 2008)
- Primarily a dopamine reuptake inhibitor, with some action on noradrenaline and other catecholamines
- It is a controlled drug
- Effect size of 0.5 (Castels *et al*, 2011)
- Immediate release preparations are cheaper and can allow greater fine-tuning of dosing.

Modified release preparations contain a combination of both immediate and slow-release stimulants. These allow once-daily dosing and have less misuse potential. The difference between the various preparations is the ratio of immediate to slow release stimulant and duration of action. Alternatively, a combination of modified and immediate release preparations can be used to fine-tune symptom control at certain times of day.

Dose titration, using immediate or slow release preparations, should be done using the smallest available dose increments over intervals (e.g. every fortnight), until an adequate response is achieved or intolerable side-effects are experienced.

- Typical starting dose (immediate release) 5 mg once or twice a day, increased to three times daily after a week. Dosage increased by about 10–15 mg per week dependent on tolerability.
- Modified release: start at 10 mg (27 or 36 mg if Concerta XL), with weekly increases by increments of 10–20 mg (18 mg if Concerta XL) to maximum effective tolerated dose.
- Monitor weight, blood pressure, pulse rate.

Dexamfetamine

- Alternative stimulant treatment for ADHD in adults with similar efficacy to methylphenidate.
- Used in patients with suboptimal response to methylphenidate.
- Promotes the release, and prevents the reuptake, of dopamine and noradrenaline. It is a controlled drug.
- Dexamfetamine is considered to have more misuse/diversion potential than methylphenidate although there is likely to be less misuse potential with lisdexamfetamine (Blick & Keating, 2007) owing to its pharmacokinetic profile.
- Dose titration follows the same principles as for methylphenidate.

Atomoxetine

- Non-stimulant treatment for ADHD which is usually considered in adults unresponsive or intolerant to stimulant treatments, or when misuse/diversion of stimulants is a concern.
- A noradrenaline reuptake inhibitor; it is not a controlled drug.
- Delayed onset of action of several weeks with effect size of 0.4 (Asherson *et al* 2014).
- Does not require the same individuald fine-tuning of dose that stimulants require and has the advantage of once-daily dosing.
- Side-effects are usually avoided by a gradual dose titration, for example starting at 40 mg and increasing by 20 mg per week.
- Doses above 80 mg have not shown any additional benefit. Some individuals are poor metabolisers of atomoxetine and are sensitive to side-effects at low doses. Acute liver failure and suicidality are rare but significant potential side-effects. All patients should be advised of symptoms of these adverse events.
- Monitor weight, blood pressure and pulse rate at baseline, after each dose change and long-term every 3 months, with weight every 6 months.
- Increased risk of ventricular arrhythmias has been described when used with drugs that prolong the QTc interval.

Table 1 Medications for ADHD in adults

	Methylphenidate	Dexafetamine	Atomoxitine
Preparations	**Immediate release** • **Ritalin/Medikinet**: 4h duration of action; b.d. or t.d.s.; 5, 10, 20mg tablets, max. 100mg/day **Modified release** • **Concerta XL:** 22% IR: 78% MR); 10–12h duration of action; o.d.; 18mg tablets; max. 108mg/day • **Equasym XL:** (30% IR, 70% MR) 8h duration of action; o.d.; 10mg tablets; max. 100mg/day • **Medikinet XL** (50% IR: 50% MR): 8h duration of action; o.d.; 10mg tablets; max. 100mg/day	**Short-acting** • **Dexamfetamine:** effect 4h; b.d. or t.d.s.; 5mg tablets; max. 60mg/day **Long-acting** • **Lisdexamfetamine:** effect 12–13h; o.d.; 30, 50, 70mg tablets; max. 70mg/day	• **Strattera:** o.d.; 10, 18, 25, 40, 60, 80, 100mg tablets; usual dose 80mg; max. 120mg/day
Side-effects	Reduced appetite, insomnia, depressed mood, anxiety, headache, irritability, tachycardia, tics, seizures, psychosis	Reduced appetite, insomnia, tachycardia, increased blood pressure, headache, depressed mood, anxiety, irritability, nasopharyngitis, tics, seizures	Reduced appetite, nausea, depressed mood, tachycardia, increased blood pressure, insomnia, dizziness, GI disturbance, sweating, sexual dysfunction, seizures, hepatitis
Contraindications[a]	Cardiac disease, cerebrovascular disease, hyperthyroidism, phaeochromocytoma, vasculitis, some mental disorders (weigh risks *v*. benefits)	Cardiovascular disease, hypertension, arteriosclerosis, hyperthyroidism, history of drug or alcohol misuse	Phaeochromocytoma

a. See British National Formulary for full list. ADHD, attention-deficit hyperactivity disorder; GI, gastrointestinal; IR, immediate release; MR, modified release.

Other pharmacological options

If there is inadequate response to monotherapy, then combining a stimulant with atomoxetine is occasionally done in clinical practice, although there is a limited evidence base for this. Other potential treatment options, which have less of an evidence base, include:

- bupropion (Zyban) – dopamine and noradrenaline reuptake inhibitor
- modafinil (Provigil) – dopamine reuptake inhibitor
- clonidine – alpha agonist
- nortriptyline or desipramine – potent inhibitors of noradrenaline reuptake.

Psychological treatments

NICE clinical guideline CG72 recommends that drug treatments for ADHD should be part of a comprehensive treatment programme addressing psychological, behavioural, occupational and educational needs (NICE, 2008). However, the evidence base for the effectiveness of individual psychological therapies for ADHD in adults is insufficiently robust at present for NICE to make any specific recommendations.

Nevertheless, approaches utilising cognitive–behavioural therapy and coaching strategies can be useful in practice as adjuncts to medication and in cases where medication is contraindicated or not tolerated. Group-based interventions using these techniques have been developed, e.g. the Young–Bramham programme (Young & Bramham, 2012).

It is also envisaged that many patients with ADHD could potentially benefit from the practical and emotional support offered to other patients by multidisciplinary mental health teams. In particular, the input of occupational therapists can be very useful in terms of helping patients to structure their time and improve organisational skills, and in assisting with access to further education and/or employment. Although it may not be possible with existing resources to offer this consistently to all patients with ADHD, it is important that all multi-disciplinary staff within CMHTs begin to develop an understanding of ADHD and its management in adults.

Monitoring of medication

Weight, blood pressure and heart rate, in addition to side-effect monitoring, should be completed at each dose titration review and every 6 months once stabilised. See Appendix 5 for a checklist (Monitoring treatment in ADHD).

Assessing response to medication

During dose titration, enquiry should be made about reduction in core ADHD symptoms (as described in DSM-5), associated symptoms (mood instability, ceaseless mental activity), functioning and possible side-effects. There are side-effect rating scales available; see Appendix 5.

For stimulants, enquiry about how long the effects last is important in tailoring the dose. It is possible to combine a slow release preparation to be given in the morning, with an immediate release preparation in the evening, if additional symptom control in the evening is required.

Not all ADHD symptoms can be ameliorated with treatment; it is important to manage expectations of treatment.

Some patients find the reduction in ADHD symptoms disconcerting; a dose reduction may need to be considered.

Possible scales that may be used in assessing response include the Current Behaviour Scale (CBS) (Murphy & Barkley, 1996) and the Weiss Functional Impairment Rating Scale (W-FIRS) (Weiss *et al*, 2007).

Comorbidity

It is usually preferable to treat any comorbid mental health problem before treating ADHD (see Appendix 3). Stimulants can potentially trigger or exacerbate psychosis, mania and tics, primarily via their dopaminergic effect. However, atomoxetine may in fact be helpful for anxiety disorders (Kratochvil *et al*, 2005).

Before starting ADHD treatments it may be necessary to optimise existing treatments and weigh up the potential risks of starting ADHD treatment.

Duration of treatment

Once an acceptable dose has been achieved that balances efficacy with side-effects, this dose should be continued and reviewed at least annually. With stimulants, the need for ongoing treatment can be evaluated by 'drug holidays'. Often this occurs naturally through omission of doses.

Treatment can allow patients to develop new ways of coping with residual symptoms. This, along with the general trend for symptoms to improve with age, means the need for ongoing treatment should be reviewed. It has been suggested that this be done on an annual basis (Kolar *et al*, 2008).

Discontinuation of treatment should be done gradually with non-stimulants to avoid withdrawal effects, but stimulants can be withdrawn more rapidly.

Service design

Diagnostic rates in Scotland suggest under-detection of ADHD in children (NHS Quality Improvement Scotland, 2008). As awareness and diagnostic rates increase, an increased demand on adult services is likely to follow. Health boards should develop proactive strategies to meet the predictable increase in need for this adult group, in line with recommendations (Scottish Government, 2012).

Service models

It is our opinion that general adult services are best placed to manage this condition, given the high levels of comorbidity and the high prevalence of the disorder. Although upskilling existing mental health professionals may increase capacity to a certain extent, it is likely that services will need organisation and expansion to efficiently meet the needs of adults with ADHD.

In Scotland, a variety of service models exist for managing ADHD in adults. In the majority of health boards, adult ADHD is managed within existing general adult services. In Glasgow, a tiered approach has been proposed where all general psychiatrists manage adult ADHD, with each sector having an identified clinician who can offer more specialist advice to local clinicians as needed. In NHS Lothian, a specialist consultation service at the Royal Edinburgh Hospital has been developed. The different service models each have their own advantages and disadvantages. When considering different service models, issues around population, training, staffing and finance should be considered.

Young people's services have already negotiated these challenges and have come up with a number of models of care, for example, nurse-led ADHD clinics, nurse prescribers and shared care protocols. Adult services could capitalise on this experience to find solutions for service provision.

Referrals

We recommend that local services provide validated screening tools to referrers. Some suggested instruments were described earlier in this document (Box 1, p. 7).

Patients have often had relevant assessments carried out by other health professionals (e.g. educational psychologists or private clinicians). We recommend that these should be made available when the referral is made.

As medication is first-line treatment, a relevant medical history is required from the referrer, particularly in terms of cardiovascular, neurological and hepatic disorders. This should include a record of the patient's most recent blood pressure and pulse (Box 2, p. 8).

We recommend that local services develop agreed transition protocols from child to adult services. Standards for such protocols have been developed by the Royal College of Psychiatrists in Scotland ADHD Working Group (Appendix 1).

Diagnosis and treatment

There is scope for the development of shared care protocols with primary care for longer-term management, similar to those in use by CAMHS. Some health boards already have shared care protocols in place for ADHD in adults.

We recommend that local services allocate adequate time for clinicians assessing and treating ADHD. Diagnostic assessments usually take 2–3 appointments of 1-hour duration.

There are freely available tools that can be used by mental health professionals to guide the assessment of ADHD (e.g. the DIVA; Kooij & Francken, 2010). We recommend that local adult services create a central resource of such tools that clinicians can access easily.

We recommend that a managed clinical network be set up to share skills and expertise in adult ADHD.

Training

It is a requirement for all trainees in psychiatry to demonstrate competency in the recognition of NDDs. Training programmes should reflect this need.

There is also a requirement to upskill existing career grade psychiatrists and consultants through provision of appropriate continuing professional development (CPD). Opportunities for training include the Royal College of Psychiatrists' CPD Online (www.psychiatrycpd.co.uk) and various national training courses, including those provided by the Royal College of Psychiatrists in Scotland. However, this does not negate the need for locally organised clinical training and opportunities for supervision.

Given the high prevalence of adult ADHD and its comorbidities, all members of the multidisciplinary team are likely to encounter patients with this disorder and should have sufficient awareness of the disorder to refer possible cases for assessment. The ability to deliver non-pharmacological interventions and to contribute to case management is also essential and is likely to require additional training. Health boards must ensure that these training needs are met.

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Appendix 1: Transition guidance

Background

Attention-deficit hyperactivity disorder (ADHD) is the term most commonly used to cover a group of common, chronic behavioural disorders characterised by persistent, pervasive and disabling levels of restlessness and overactivity (usually combined with impulsiveness) and/or inattention, beyond developmental norms. The DSM-IV (American Psychiatric Association, 1994) identified three subtypes of ADHD, and the ICD-10 (World Health Organization, 1992) describes hyperkinetic disorder (HKD), which is similar to the most severe form of ADHD in DSM-IV. However, the term 'ADHD' is commonly used in the UK even by specialists; therefore, it will be used in this document.

ADHD services for under-18s have been developed in Scotland over the past 15–20 years, but there is a lack of service provision for over-18s with ADHD (Healthcare Improvement Scotland, 2012). This is of concern because: (a) those already identified and receiving treatment in childhood often need continuing care; and (b) there are many adults whose ADHD has not yet been identified or whose symptomatology has been misdiagnosed (Nutt *et al,* 2007), leading to members of this group not accessing potentially beneficial treatments.

Longitudinal studies of ADHD show continuing decline of symptoms with age, but about half of adults who had a childhood diagnosis of ADHD still experience functional impairment (Coghill *et al*, 2008). Clearly, services for the assessment and treatment of adults with ADHD need to be developed (Royal College of Psychiatrists in Scotland & Addressing the Balance, 2012).

The Mental Health Strategy for Scotland (Scottish Government, 2012) acknowledges the need to develop appropriate specialist capability for diagnosis and treatment of neurodevelopmental disorders within adult services. The TRACK study findings (Singh *et al*, 2010) highlight that young people with neurodevelopmental disorders such as ADHD are more likely to fall through the gap between child and adolescent mental health services (CAMHS) and adult mental health services (AMHS), and transition arrangements are noted to be more complex for this group. This document focuses on transition arrangements for those already receiving input from CAMHS and who require continuing specialist input beyond their 18th birthday.

Data

The prevalence of ADHD in school-age children and young people is approximately 5%, and that of the most severe form of ADHD (i.e. HKD) is approximately 1–2% (Polanczyk *et al*, 2007). However, the actual number of young people given a diagnosis of ADHD in Scotland is much less than this. Healthcare Improvement Scotland (2012) reported that only 0.6% of children and adolescents were receiving treatment for ADHD; furthermore, the range among National Health Service (NHS) boards was 0.21–1.17% in 2011–2012. In the same year, Information Services Division (ISD) data showed that 0.6% of under-18s in Scotland were receiving medication licensed for treatment of ADHD – again, with a variation in rates between NHS boards (ISD Scotland & National Services Scotland, 2012). It is highly likely that the 0.6% receiving treatment have the more severe form of ADHD and are more likely to need ongoing treatment into adulthood. ISD have also described a significant upward trend in the number of prescriptions provided for ADHD medications in recent years, with a 7.1% increase in the period 2010/11 to 2011/12 for both under- and over-18s. This also highlights an increasing number of young adults taking medication for ADHD who may require continued care over the age of 18 years.

Services for adults with ADHD in transition

Healthcare Improvement Scotland (2012) found that transition arrangements to AMHS were on a case-by-case basis and that there were no established dedicated ADHD services within AMHS. Some NHS boards reported that shared care protocols were being developed with general practitioners (GPs).

Key clinical issues in providing an effective service for the diagnosis and management of ADHD in young people in transition are:

- Ensuring that appropriate referral pathways are in place for young people to support a smooth transition between CAMHS or paediatric services and adult services (including AMHS, substance misuse services and primary care)
- Ensuring that offender management services have appropriate referral pathways for young people
- Providing effective and efficient clinical care in line with National Institute for Health and Care Excellence (NICE, 2008) clinical guideline CG72 on ADHD, and ensuring appropriate treatment of comorbid psychiatric disorders
- Ensuring that the service is integrated with other health and social services for young people and adults with ADHD

- Ensuring responsive engagement with the third sector
- Providing the best possible outcomes for individual people/ patients, their carers and local communities
- Providing a quality-assured service

Service components

NICE (2008) recommends that young people with ADHD receiving treatment and care from CAMHS or paediatric services should normally be transferred to adult services if they continue to have significant symptoms of ADHD and/or coexisting conditions that require treatment. Health boards should ensure that referral criteria are agreed between CAMHS/paediatrics and AMHS for cases accepted through a transition protocol. The role of primary care for ongoing monitoring and prescribing should be clear, with recommendations of situations, such as complex comorbidity, when AMHS should be consulted. Local agreements with GPs and AMHS will vary.

Transition should be planned by both referring and receiving services. An assessment to establish the need for continuing treatment into adulthood should be carried out. Flexibility in the timing of transition is important. The precise timing of arrangements may vary locally but should usually be completed by the time the young person is 18 years old. Transition arrangements should normally include:

- the involvement of the young person and, when appropriate, the parent or carer in the planning (see Box 1).
- provision of information about adult services to the young person
- details of the anticipated treatment and services that the young person will require.

For more complex cases:

- consideration of a planning meeting involving paediatric services or CAMHS and AMHS and/or a joint appointment.

Developing a high-quality ADHD service specifically for young people in transition

To deliver an effective service to young people beyond the age of 18 years, NHS boards will need to formalise arrangements for the management of adults with ADHD. This can be achieved through the development of local care pathways addressing adequate transition planning, good information transfer across teams, joint working between teams, and continuity of care following transition. NICE (2013) have produced a commissioning guide to support the development of services for adults with ADHD. Appropriate training for multidisciplinary

Box 1 Transition of young people with ADHD to adult services

- Identify a young person over the age of 17 who is likely to benefit from continued medication and contact with services when they reach the age of 18.
- Alert adult services about the young person with a written referral (specifying the reason for referral) and case summary. For complex cases consider a joint meeting between adult and child services.

The case summary should have clarity regarding the following.

- The clinical evidence/grounds for diagnosis of ADHD, including details of assessment (e.g. results of questionnaires and school assessment)
- Interventions to date (pharmacological, psychological, educational)
- Degree of engagement of young person (and/or parents/carers) in treatment and follow-up
- Preferred clinic location (if there is a choice)
- Preference with respect to whom appointment letters should be addressed, e.g. to the individual alone; the individual plus parent/carer
- Details of the anticipated treatment and services that the young person will require
- Current symptoms of ADHD and associated social, academic and family impairments; how stable/unstable the individual is on treatment and predictions regarding future crises/challenges
- The context of the young person with regard to:
  - education/employment
  - current social circumstances, significant relationships/supports
  - peer relationships
- Forensic history
- Quality of life/activities of daily living
- Benefits/employment status
- Driving status
- Current medication, dosage, side-effects, benefits
- Medication history:
  - objective measures of improvements on medication
  - reasons for choice and change of medications
  - dates/duration of treatment, maximum dose achieved and medication-free periods
- Comorbid conditions including drug or alcohol misuse
- Specific intellectual difficulties (a formal diagnosis of intellectual disability would mean a direct referral to the Learning Disability Service)

staff in mental health services and for GPs must be made available to achieve this. Shared care protocols between secondary and primary care would facilitate this process.

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Appendix 2: Developmental history

Prenatal

How old was the patient's mother when the patient was born?.....

.....

Did the patient's mother have any health problems during the pregnancy (e.g. diabetes, pre-eclampsia)? Y/N

If yes, please provide details.....

.....

Did the mother take any of the following substances during pregnancy?

Alcohol Y/N If yes, how often? .....

.....

Caffeine Y/N If yes, how often? .....

.....

Cigarettes Y/N If yes, how often? ……

…….....

Prescribed medication Y/N If yes, what?…….....

Non-prescribed medication Y/N If yes, what?……...

Birth

At what gestation was the patient born?.....

By what method was the patient born? Normal / Caesarean / Forceps / Induced / Other …….....

Were there any complications with the birth? Y/N

If yes, please provide details…….....

How much did the patient weigh at birth?.....

Postnatal and infancy

Did the patient have any medical problems at birth? Y/N

If yes, please provide details…….....

Did the patient spend any time in the specialist baby unit? Y/N

If yes, please provide details…….....

What was the patient's temperament like as a baby (e.g. did they cry a lot/sleep well)? Easy baby / Average baby / Difficult baby

Childhood

At what age did the patient walk? ……

At what age did the patient say their first words? ……

At what age did the patient stop wearing nappies during the day?
……

At what age did the patient stop wearing nappies during the night?
……

During childhood did the patient have problems with:

Eyesight Y/N

Social skills Y/N

Hearing Y/N

Fine motor skills (handwriting, tying shoes) Y/N

Speech Y/N

Gross motor skills (running, riding a bike) Y/N

Did the patient have any physical health problems during childhood (e.g. asthma, diabetes)? Y/N

If yes, please specify.……

Did the patient have any of the following conditions?

Head injury Y/N

Meningitis Y/N

Seizures Y/N

Ear infections Y/N

Encephalitis Y/N

Did they have any serious injury requiring medication attention?

Y/N

If yes, please provide details.……

Did the patient ever have an injury where they lost consciousness?

Y/N

If yes, please provide details.……

Did the patient receive any of the following diagnoses as a child?

ADHD	Y/N
Asperger syndrome	Y/N
Autism	Y/N
Tics	Y/N
Dyslexia	Y/N
Developmental delay	Y/N
Intellectual disability	Y/N

How did the patient get on at:	Please consider how they managed in each of the three domains and comment on strengths and weaknesses
Nursery	Academic
	Social
	Behavioural
Primary school	Academic
	Social
	Behavioural
Secondary school	Academic
	Social
	Behavioural

Did the patient attend mainstream schooling? Y/N

If no, what sort of school did they attend?.....
.....

Did the patient ever receive additional support at school for?

Speech and language	Y/N
Reading and writing	Y/N
Behaviour	Y/ N

Did the patient have friends at school? Y/N

Were they able to maintain friendships at school Y/N

Was the patient bullied at school? Y/N

Was the patient ever suspended from school? Y/N

Was the patient ever expelled from school? Y/N

Was the patient ever the subject of a Children's Panel? Y/N

If so, for what reason…….....

What age did the patient leave school…….....

What was the highest level of examinations attained…….....

What did the patient do on leaving school? College / Job / Vocational training / University / Other …….....

Appendix 3: Comorbidity

Attention-deficit hyperactivity disorder (ADHD) in adults and differentiating comorbid conditions			
Disorder	Comorbid rate	Shared symptoms	Differentiating symptoms
Specific intellectual difficulty	33%	Problems with concentration, poorly organised work, forgetfulness, poor time management	Presence of academic skills deficits (dyscalculia, dyslexia)
Emotionally unstable personality disorder	13%	Problems with concentration, poorly organised work, forgetfulness, poor time management	Chronic feelings of emptiness Presence of identity disturbance Suicide threats or acts of self-harm Fear of abandonment Quasi-psychotic symptoms
Dissocial personality disorder (DSPD)	24%	Enduring pervasive pattern of behaviour that causes impairment in multiple domains Low tolerance to frustration Problems maintaining relationships Conduct disorder can coexist with ADHD and has been invariably present in DSPD History of hyperactivity in childhood in ADHD and DSPD	Callous unconcern for feelings of others Incapacity to experience guilt Persistent attitude of irresponsibility and disregard for social norms, rules and obligations
Anxiety disorder	Inconsistent findings, some studies report elevated rates up to 33%	Poor concentration Motor tension Inability to switch thoughts off Checking may be employed in ADHD as a means of managing forgetfulness/disorganisation	Autonomic overactivity Presence of somatic symptoms Persistent anxiety symptoms of an episodic nature (periods where symptoms not present) Evidence of clear triggers to anxiety (presence of avoidance) Specific focus to thought content, e.g. fear of negative appraisal, contamination, threat Implications for treatment Treat clear anxiety disorder first Re-evaluate severity of ADHD once anxiety disorder treated Consider atomoxetine if stimulant treatment exacerbates anxiety symptoms
Moderate to severe depressive disorder	63%	Poor self-esteem Affective instability Irritability Poor concentration Sleep problems	Episodic history of pervasive low mood and/or anhedonia (different to usual mental state), presence of somatic syndrome Treatment implications: treat depression first
Dysthymia	23%	Poor concentration Problems making decisions Irritability Sleep problems Low self-esteem Feeling incapable	Chronically depressed mood present for minimum of 2 years Treatment implications: treat ADHD first

ADHD in adults and differentiating comorbid conditions (continued)			
Disorder	Comorbid rate	Shared symptoms	Differentiating symptoms
Bipolar affective disorder (BPAD)	20%	Mania/ADHD Affective instability Hyperactivity/impulsivity Sleep problems Depression (see p. 41)	BPAD has an episodic presentation with distinct periods of abnormal moods (hypomanic/manic, depressed) with a return to baseline level of functioning in between episodes; psychotic symptoms may be present Implications for treatment: treat mood disorder first
Autism spectrum disorder (ASD)	No adult studies; now recognised that conditions frequently co-occur	Severe hyperactivity in childhood, social impairment, poor concentration. Developmental coordination disorder often coexists with either ADHD or ASD	Attentional problems centred around not listening and problems shifting focus (attentional problems in ADHD due to short attention span and excessive distractibility) Impairment of reciprocal social interactions All-absorbing narrow interest Imposition of routines and interest Non-verbal communication problems Speech and language problems (formal, pedantic, odd prosody, staccato speech)
Substance use disorders	25% (earlier onset of substance misuse)	Impulsivity Overactivity Poor concentration	Use of one or more psychoactive drugs causing damage to health with or without dependence syndrome Treatment implications: stabilise substance misuse first Make ADHD diagnosis when patient in recovery Consider drug interactions and risk of diversion. If risk of diversion, non-stimulant treatment should be used
Neurological disorders, tic disorder, epilepsy			*Implications for treatment* Tic disorder: if severe, use non-stimulant Epilepsy: optimise seizure control. Liaise with neurology. Some anticonvulsant medications have a negative impact on attention. Monitor for deterioration in seizure control with stimulant
Developmental coordination disorder	40% in children (75% persist into adulthood)	Problems with planning, working memory Restlessness Poor concentration	Presence of motor coordination difficulties, hypo/hypertonia

Further reading

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Klein RG, Mannuzza S (2010) Comorbidity in adult attention-deficit hyperactivity disorder. *Key Issues in Mental Health*, **176**: 126–43.

Margari L, Buttiglione M, Craig F, et al (2013) Neuropsychopathological comorbidities in learning disorders. *BMC Neurology*, **13**: 198.

Miller C, Flory J, Miller S, et al (2008) Childhood ADHD and the emergence of personality disorders in adolescence: a prospective follow up. *Journal of Clinical Psychiatry*, **69**: 1477–84.

Reiersen AM, Todd RD (2008) Co-occurrence of ADHD and autistic spectrum disorders: phenomenology and treatment. *Expert Review of Neurotherapeutics*, **8**: 657–9.

Reiersen A, Constantion J, Volk H (2007) Autistic traits in a population based ADHD twin sample. *Journal of Child Psychology and Psychiatry*, **48**: 464–72.

Appendix 4: Self-help information

Web-based resources

ADDiSS (ADHD information services)

National Attention Deficit Disorder Information and Support Service

People-friendly information and resources for parents, teachers, sufferers and professionals

Phone line also available 020 8952 2800

www.addiss.co.uk

AADD-UK

Website for and by adults with ADHD

https://aadduk.org

Youngminds

Charity for children and young people

www.youngminds.org.uk

ADDers.org

Promotes awareness of ADHD and provide information with as much free practical help to sufferers, both adults and children, and their families

www.adders.org

Support group

Central Scotland Adult ADHD Support Groups

Meetings in Edinburgh, Glasgow and e-support

https://sites.google.com/site/scottishadhdadultsorg

Appendix 5: Tools

Adult ADHD Self-Report Scale (ASRS-V1.1)

Please answer the questions below, rating yourself on each of the criteria shown using the scale on the right side of the page. As you answer each question, place an X in the box that best describes how you have felt and conducted yourself over the past 6 months. Please give this completed checklist to your healthcare professional to discuss during today's appointments.

Part A		Never	Rarely	Sometimes	Often	Very often
1	How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?					
2	How often do you have difficulty getting things in order when you have to do a task that requires organization?					
3	How often do you have problems remembering appointments or obligations?					
4	When you have a task that required a lot of thought, how often do you avoid or delay getting started?					
5	How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?					
6	How often do you feel overly active and compelled to do things, like you were driven by a motor?					

Part B		Never	Rarely	Sometimes	Often	Very often
7	How often do you make careless mistakes when you have to work on boring or difficult projects?					
8	How often do you have difficulty keeping your attention when you are doing boring or repetitive work?					
9	How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?					
10	How often do you misplace or have difficulty finding things at home or work?					
11	How often are you distracted by activity or noise around you?					
12	How often do you leave your seat in meetings or in other situations in which you are expected to stay seated?					
13	How often do you feel restless or fidgety?					
14	How often do you have difficulty unwinding and relaxing when you have time to yourself?					
15	How often do you find yourself talking too much when you are in social situations?					
16	When you are in a conversation, how often do you find yourself finishing the sentences of the people you are talking to, before they can finish it themselves?					
17	How often do you have difficulty waiting your turn in situations where turn taking is required?					
18	How often do you interrupt others when they are busy?					

Childhood Behaviour Scale – self-report

Please circle the number next to each item that best describes your behaviour when you were a child. **PLEASE RATE YOUR BEHAVIOUR BETWEEN 7 and 12 YEARS OF AGE**

Items		Never or rarely	Sometimes	Often	Very often
1	Failed to give close attention to details or made careless mistakes in my work	0	1	2	3
2	Fidgeted with hands or feet or squirmed in seat	0	1	2	3
3	Had difficulty sustaining my attention in tasks or fun activities	0	1	2	3
4	Left my seat in classroom or other situations in which sitting was expected	0	1	2	3
5	Didn't listen when spoken to directly	0	1	2	3
6	Restless in the 'squirmy' sense	0	1	2	3
7	Didn't follow through on instructions and failed to finish work	0	1	2	3
8	Had difficulty engaging in leisure activities or doing fun things quietly	0	1	2	3
9	Had difficulty organising tasks and activities	0	1	2	3
10	Felt 'on the go' or acted as if 'driven by a motor'	0	1	2	3
11	Avoided, disliked or was reluctant to engage in work that required sustained mental effort	0	1	2	3
12	Talked excessively	0	1	2	3
13	Lost things necessary for tasks or activities	0	1	2	3
14	Blurted out answers before questions had been completed	0	1	2	3
15	Easily distracted	0	1	2	3
16	Had difficulty awaiting turn	0	1	2	3
17	Forgetful in daily activities	0	1	2	3
18	Interrupted or intruded on others	0	1	2	3

To what extent did the problems you may have circled on the previous page interfere with your ability to function in each of these areas of life activities **when you were a child between 7 and 12 years of age?**

Areas:	Never or rarely	Sometimes	Often	Very often
In your home life with your immediate family	0	1	2	3
In your social interactions with other children	0	1	2	3
In your activities or dealings in the community	0	1	2	3
In school	0	1	2	3
In sports, clubs or other organisations	0	1	2	3
In learning to take care of yourself	0	1	2	3
In your play, leisure or recreational activities	0	1	2	3
In your handling of your daily chores or other responsibilities	0	1	2	3

The scale ranges from 0 = never exhibiting the behaviour to 3 = occurs up to several times an hour/day. The higher the score the more likely that there are symptoms of ADHD and therefore likely to benefit from a proper diagnostic assessment. These scales are not diagnostic but merely to help with screening assessments.

Current Behaviour Scale – self-report

Instructions

Please circle the number next to each item that best describes your behaviour
DURING THE PAST 6 MONTHS

Items		Never or rarely	Sometimes	Often	Very Often
1	Fail to give close attention to details or make careless mistakes in my work	0	1	2	3
2	Fidget with hands or feet or squirm in seat	0	1	2	3
3	Have difficulty sustaining my attention in tasks or fun activities	0	1	2	3
4	Leave my seat in situations in which sitting is expected	0	1	2	3
5	Don't listen when spoken to directly	0	1	2	3
6	Feel restless	0	1	2	3
7	Don't follow through on instructions and fail to finish work	0	1	2	3
8	Have difficulty engaging in leisure activities or doing fun things quietly	0	1	2	3
9	Have difficulty organising tasks and activities	0	1	2	3
10	Feel 'on the go' or 'driven by a motor'	0	1	2	3
11	Avoid, dislike or am reluctant to engage in work that requires sustained mental effort	0	1	2	3
12	Talk excessively	0	1	2	3
13	Lose things necessary for tasks or activities	0	1	2	3
14	Blurt out answers before questions have been completed	0	1	2	3
15	Easily distracted	0	1	2	3
16	Have difficulty awaiting turn	0	1	2	3
17	Forgetful in daily activities	0	1	2	3
18	Interrupt or intrude on others	0	1	2	3

If you indicated that you experienced any of the problems with attention, concentration, impulsiveness or hyperactivity on the first page, please fill in the blank below indicating as precisely as you can recall at what age these problems began to occur for you:

I was approximately _____ years old.

To what extent do the problems you may have circled on the previous page interfere with your ability to function in each of these areas of life activities?

Areas	Never or rarely	Sometimes	Often	Very often
In your home life with your immediate family	0	1	2	3
In your work or occupation	0	1	2	3
In your social interactions with others	0	1	2	3
In your activities or dealings in the community	0	1	2	3
In any educational activities	0	1	2	3
In your dating or marital relationship	0	1	2	3
In your management of money	0	1	2	3
In your driving of a motor vehicle	0	1	2	3
In your leisure or recreational activities	0	1	2	3
In your management of your daily responsibilities	0	1	2	3

The scale refers to 0 = never exhibiting the behaviour to 3 = occurs up to several times an hour/day. The higher the score the more likely that there are symptoms of ADHD and therefore likely to benefit from a proper diagnostic assessment. These scales are not diagnostic but merely to help with screening assessments.

Childhood Behaviour Scale – parent report

Instructions

Please circle the number next to each item that best describes the behaviour of your son or daughter when he or she was a child.

PLEASE RATE BEHAVIOUR AT AGE SEVEN

Items		Never or rarely	Sometimes	Often	Very often
1	Failed to give close attention to details or made careless mistakes in work	0	1	2	3
2	Fidgeted with hands or feet or squirmed in seat	0	1	2	3
3	Had difficulty sustaining attention in tasks or fun activities	0	1	2	3
4	Left seat in classroom or other situations in which sitting was expected	0	1	2	3
5	Didn't listen when spoken to directly	0	1	2	3
6	Restless in the 'squirmy' sense	0	1	2	3
7	Didn't follow through on instructions and failed to finish work	0	1	2	3
8	Had difficulty engaging in leisure activities or doing fun things quietly	0	1	2	3
9	Had difficulty organising tasks and activities	0	1	2	3
10	Was 'on the go all the time' or acted as if 'driven by a motor'	0	1	2	3
11	Avoided, disliked or was reluctant to engage in work that required sustained mental effort	0	1	2	3
12	Talked excessively	0	1	2	3
13	Lost things necessary for tasks or activities	0	1	2	3
14	Blurted out answers before questions had been completed	0	1	2	3
15	Easily distracted	0	1	2	3
16	Had difficulty awaiting turn	0	1	2	3
17	Forgetful in daily activities	0	1	2	3
18	Interrupted or intruded on others	0	1	2	3

To what extent did the problems you may have circled on the previous page interfere with their ability to function in each of these areas of life activities, when she or he was a child between 7 and 12 years of age?

Areas	Never or rarely	Sometimes	Often	Very Often
In his/her home life with immediate family	0	1	2	3
In his/her social interactions with other children	0	1	2	3
In his/her activities or dealings in the community	0	1	2	3
In school	0	1	2	3
In sports, clubs or other organisations	0	1	2	3
In learning to take care of themselves	0	1	2	3
In his/her play, leisure or recreational activities	0	1	2	3
In his/her handling of daily chores or other responsibilities	0	1	2	3

Again, please circle the number next to each item that best describes behaviour **WHEN SHE/HE WAS BETWEEN 7 and 12 YEARS OF AGE**

Items		Never or rarely	Sometimes	Often	Very often
1	Lost temper	0	1	2	3
2	Argued with adults	0	1	2	3
3	Actively defied or refused to comply with adults' requests or rules	0	1	2	3
4	Deliberately annoyed people	0	1	2	3
5	Blamed others for my mistakes or misbehaviour	0	1	2	3
6	Was touchy or easily annoyed by others	0	1	2	3
7	Was angry or resentful	0	1	2	3
8	Was spiteful or vindictive	0	1	2	3
9	Moods up and down	0	1	2	3
10	Easily frustrated in errors	0	1	2	3
11	Cried often and easily	0	1	2	3
12	Mood changed quickly and drastically	0	1	2	3
13	Hot or short tempered	0	1	2	3
14	Temper outbursts, explosive and unpredictable behaviour	0	1	2	3

The scale refers to 0 = never exhibiting the behaviour to 3 = occurs up to several times an hour/day. The higher the score the more likely that there are symptoms of ADHD and therefore likely to benefit from a proper diagnostic assessment. These scales are not diagnostic but merely to help with screening assessments.

Current Behaviour Scale – partner report

Instructions

Please circle the number next to each item that best describes your partner's behaviour **DURING THE PAST 6 MONTHS**

Items		Never or rarely	Sometimes	Often	Very often
1	Fails to give close attention to details or make careless mistakes in work	0	1	2	3
2	Fidgets with hands or feet or squirm in seat	0	1	2	3
3	Has difficulty sustaining attention in tasks or fun activities	0	1	2	3
4	Leaves seat in situations in which sitting is expected	0	1	2	3
5	Appears not to listen when spoken to directly	0	1	2	3
6	Appears restless	0	1	2	3
7	Does not follow through on instructions and fails to finish work	0	1	2	3
8	Has difficulty engaging in leisure activities or doing fun things quietly	0	1	2	3
9	Has difficulty organising tasks and activities	0	1	2	3
10	Appears to be 'on the go all the time' or as if 'driven by a motor'	0	1	2	3
11	Avoids, dislikes or is reluctant to engage in work that requires sustained mental effort	0	1	2	3
12	Talk excessively	0	1	2	3
13	Loses things necessary for tasks or activities	0	1	2	3
14	Blurts out answers before questions have been completed	0	1	2	3
15	Easily distracted	0	1	2	3
16	Has difficulty awaiting turn	0	1	2	3
17	Forgetful in daily activities	0	1	2	3
18	Interrupts or intrude on others	0	1	2	3

To what extent do the problems you may have circled on the previous page interfere with your partner's ability to function in each of these areas of life activities?

Areas	Never or rarely	Sometimes	Often	Very often
In his/her home life with immediate family	0	1	2	3
In his/her work or occupation	0	1	2	3
In his/her social interactions with others	0	1	2	3
In his/her activities or dealings in the community	0	1	2	3
In any educational activities	0	1	2	3
In your dating or marital relationship	0	1	2	3
In his/her management of money	0	1	2	3
In his/her ability to drive a motor vehicle	0	1	2	3
In his/her leisure or recreational activities	0	1	2	3
In his/her management of daily responsibilities	0	1	2	3

The scale refers to 0 = never exhibiting the behaviour to 3 = occurs up to several times an hour/day. The higher the score the more likely that there are symptoms of ADHD and therefore likely to benefit from a proper diagnostic assessment. These scales are not diagnostic but merely to help with screening assessments.

Medical Assessment Tool for Adults with ADHD

Have you ever been told by a doctor that you have heart disease?	
Do you ever get chest pain on exertion?	
Have you ever passed out or fainted whilst exercising?	
Has anyone in your family developed heart disease before the age of 60?	
Has anyone in your family died of heart disease before the age of 60?	
Do you know if you have high blood pressure or an increased cholesterol?	
Have you ever had problems with tics/twitches?	
Have you ever had any fits or seizures?	
BP/pulse: is it regular?	
Weight	
Physical examination (done by GP)	
ECG, ECHO and 24 h BP if indicated	

Monitoring treatment in ADHD

Name:		Date		
Physical health check				
Medication: Dose:		BP: Pulse: Weight:		
Side-effect Rating Scale				
Side-effect	Frequency			
	Not at all	Sometimes	Often	Very often
Headache				
Dizziness				
Nausea				
Vomiting				
Sweating				
Loss of appetite				
Sexual dysfunction				
Weight loss				
Diarrhoea				
Tics				
Sleep difficulties				
Mood instability				
Agitation				
Sadness				
Palpitations				
Other				

Weiss Functional Impairment Rating Scale Self-Report (WFIRS-S)

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Patient Name _____ Date _____ Date of Birth _____

Sex: ☐ Male ☐ Female Work: ☐ Full-time ☐ Part-time ☐ Other _____ School: ☐ Full-time ☐ Part-time

A. FAMILY	Never or Not at All	Sometimes or Somewhat	Often or Much	Very Often or Very Much	Not Applicable
1. having problems with family	0	1	2	3	☐
2. having problems with spouse/partner	0	1	2	3	☐
3. relying on others to do things for you	0	1	2	3	☐
4. causing fighting in the family	0	1	2	3	☐
5. makes it hard for the family to have fun together	0	1	2	3	☐
6. problems taking care of the family	0	1	2	3	☐
7. problems balancing your needs against those of your family	0	1	2	3	☐
8. problems losing control with family	0	1	2	3	☐

B. WORK					
1. problems performing required duties	0	1	2	3	☐
2. problems with getting your work done efficiently	0	1	2	3	☐
3. problems with your supervisor	0	1	2	3	☐
4. problems keeping a job	0	1	2	3	☐
5. getting fired from work	0	1	2	3	☐
6. problems working in a team	0	1	2	3	☐
7. problems with your attendance	0	1	2	3	☐
8. problems with being late	0	1	2	3	☐
9. problems taking on new tasks	0	1	2	3	☐
10. problems working to your potential	0	1	2	3	☐
11. poor performance evaluations	0	1	2	3	☐

C. SCHOOL					
1. problems taking notes	0	1	2	3	☐
2. problems completing assignments	0	1	2	3	☐
3. problems getting your work done efficiently	0	1	2	3	☐
4. problems with teachers	0	1	2	3	☐
5. problems with school administrators	0	1	2	3	☐
6. problems meeting minimum requirements to stay in school	0	1	2	3	☐
7. problems with attendance	0	1	2	3	☐
8. problems with being late	0	1	2	3	☐
9. problems taking on new tasks	0	1	2	3	☐
10. problems working to your potential	0	1	2	3	☐
11. problems with inconsistent grades	0	1	2	3	☐

D. LIFE SKILLS	Never or Not at All	Sometimes or Somewhat	Often or Much	Very Often or Very Much	Not Applicable
1. excessive or inappropriate use of internet, video games or TV	0	1	2	3	☐
2. problems keeping an acceptable appearance	0	1	2	3	☐
3. problems getting ready to leave the house	0	1	2	3	☐
4. problems getting to bed	0	1	2	3	☐
5. problems with nutrition	0	1	2	3	☐
6. problems with sex	0	1	2	3	☐
7. problems with sleeping	0	1	2	3	☐
8. getting hurt or injured	0	1	2	3	☐
9. avoiding exercise	0	1	2	3	☐
10. problems keeping regular appointments with doctor/dentist	0	1	2	3	☐
11. problems keeping up with household chores	0	1	2	3	☐
12. problems managing money	0	1	2	3	☐

E. SELF-CONCEPT					
1. feeling bad about yourself	0	1	2	3	☐
2. feeling frustrated with yourself	0	1	2	3	☐
3. feeling discouraged	0	1	2	3	☐
4. not feeling happy with your life	0	1	2	3	☐
5. feeling incompetent	0	1	2	3	☐

F. SOCIAL					
1. getting into arguments	0	1	2	3	☐
2. trouble cooperating	0	1	2	3	☐
3. trouble getting along with people	0	1	2	3	☐
4. problems having fun with other people	0	1	2	3	☐
5. problems participating in hobbies	0	1	2	3	☐
6. problems making friends	0	1	2	3	☐
7. problems keeping friends	0	1	2	3	☐
8. saying inappropriate things	0	1	2	3	☐
9. complaints from neighbors	0	1	2	3	☐

G. RISK	Never or Not at All	Sometimes or Somewhat	Often or Much	Very Often or Very Much	Not Applicable
1. aggresivse driving	0	1	2	3	☐
2. doing other things while driving	0	1	2	3	☐
3. road rage	0	1	2	3	☐
4. breaking or damaging things	0	1	2	3	☐
5. doing things that are illegal	0	1	2	3	☐
6. being involved with the police	0	1	2	3	☐
7. smoking cigarettes	0	1	2	3	☐
8. smoking marijuana	0	1	2	3	☐
9. drinking alcohol	0	1	2	3	☐
10. taking "street" drugs	0	1	2	3	☐
11. sex without protection (birth control, condom)	0	1	2	3	☐
12. sexually inappropriate behavior	0	1	2	3	☐
13. being physically aggressive	0	1	2	3	☐
14. being verbally aggressive	0	1	2	3	☐

DO NOT WRITE IN THIS AREA

A. Family _____

B. Work _____

C. School _____

D. Life skills _____

E. Self-concept _____

F. Social _____

G. Risk _____

Total _____