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Saudi Health Council

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KINGDOM OF SAUDI ARABIA

إشراق
الجمعية السعودية لاضطراب فرط الحركة وتشتت الانتباه
SAUDI ADHD SOCIETY

EVIDENCE-BASED
CLINICAL PRACTICE GUIDELINE
FOR MANAGEMENT OF

ATTENTION DEFICIT HYPERACTIVITY DISORDER

A D H D

IN SAUDI ARABIA

Summary Booklet
First Edition, 2020

SPS Saudi Pharmaceutical Society الجمعية الصيدلية السعودية

Saudi Pediatric Association الجمعية السعودية لطب الأطفال

SPNS الجمعية السعودية لطب أعصاب الأطفال Saudi Pediatric Neurology Society

الجمعية السعودية للطب النفسي Saudi Psychiatric Association

الجمعية السعودية لعلم النفس المهني
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Working Groups

The Saudi ADHD Society would like to acknowledge the efforts of the many experts who participated in the development of this CPG. Their full titles and affiliations may be found in Appendix A or in this link: https://cpg.adhd.org.sa/acknowledgements/.

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This adapted CPG from the Saudi ADHD Society has been critically reviewed and endorsed by the following organizations:

1. Saudi Health Council
2. Saudi Psychiatric Association
3. Saudi Pediatric Neurology Society
4. Saudi Pediatric Association
5. Saudi Pharmaceutical Society
6. Saudi Society for Professional Psychology

Preface

Praise be to Allah for with His Grace the righteous deeds are completed. This Unified ADHD Clinical Practice Guideline (CPG) Project is the strategic project 7.2 of the Saudi ADHD Society for the period 2017-2019. The Saudi ADHD Society is a registered non-profit under license 474 from the Saudi Ministry of Human Resources and Social Development, and the project received the Ministry approval (No. 52476) on 5/8/1438 H.

Who is this CPG for?

Intended Target Users	Physicians, Clinical psychologists, Other behavioural health clinicians, Nurses, Occupational therapists, Pharmacists, Social workers, Dietitians, Medical students, Medical sciences students
Clinical Specialty	General Psychiatry, Child & Adolescent Psychiatry, Neurology, Paediatric Neurology, General Paediatrics, Developmental & Behavioral Paediatrics, Family Practice, General Practice, Clinical Psychology, Educational Psychology, Clinical Nutrition
Healthcare Setting	Primary, secondary and tertiary care settings dealing with assessment, treatment and management of ADHD in Saudi Arabia
Target Population	Children: under 5 years Children and young people: aged 5 to 18 years Adults: aged over 18 years Suspected to have ADHD or have a diagnosis of ADHD

For assistance, support and further information, please contact:

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Introduction

About ADHD

Attention Deficit/Hyperactivity Disorder (ADHD), is a chronic neurodevelopmental disorder characterized by developmentally inappropriate levels of hyperactivity-impulsivity and/or inattention. ADHD is a clinically and genetically heterogeneous syndrome with multiple possible aetiologies and frequent neuropsychiatric comorbidities.

ADHD is more commonly reported among boys than girls, partly because of an actual gender difference – boys exhibit more disruptive and aggressive behaviour than girls – but also because of the resulting referral bias. The three main presentations of ADHD (predominantly inattentive, predominantly hyperactive-impulsive, and combined) can change over time. While many gender differences decrease by adulthood, functional deficits and in particular executive function deficits are significant challenges, and the gender difference of neuropsychiatric comorbidities persists.

The worldwide prevalence of ADHD is estimated to be around 5-7% of children and adults. While numerous regional studies have been conducted into the prevalence of ADHD in Saudi Arabia, no nationally representative study has been conducted to-date. However, based upon these available data, given that ADHD occurs indiscriminately between diverse populations worldwide, and that when external factors are controlled for the prevalence of ADHD varies very little among different communities, the local prevalence is expected to fall within the worldwide range. ADHD is highly heritable, and while correlations have been found with a variety of prenatal environmental risk factors, as well as premature birth, none of them have a definite causal relationship with ADHD. There is, however, an element of gene-environment interaction (accounting for 10-40% of variance between cases).

ADHD is one of the most well-researched disorders, and our understanding of its epidemiology, pathogenesis, and management is constantly advancing, as evinced by the plethora of studies about ADHD published internationally, including in Saudi Arabia and the Arab World. It is recognized to have a significant burden if under-recognized and untreated.

Internationally, ADHD is managed in various shared-care models between primary and secondary care that best suit each country's individual resources, culture, and nature of practice. No standardized CPGs for ADHD management exist in Saudi Arabia, and ADHD is diagnosed and treated primarily in tertiary care and the private sector, and managed in many settings with the available resources, often inappropriately or ineffectively. Stimulants are most commonly prescribed. In addition to medication, the term management includes behavioural and psychosocial interventions, which are being implemented at many schools and other settings. Many psychologists in private and public settings offer such treatments, as well as special education programs within some schools. This results in large variability in clinical practice, and suboptimal quality of care. The first step in correcting this imbalance is to give clinicians access to the information and practical tools they need to provide evidence-

based care for people with ADHD. The CPG should also aim to elevate treatment of ADHD out of the realm of severe mental disorders in order to reduce stigma. For optimum outcomes, this should include supplements with patient and parent education materials to improve treatment compliance and reduce parenting stress, as well as teacher awareness materials to aid screening and diagnosis.

About Clinical Practice Guidelines

Clinical practice guidelines (CPGs) summarize the best available evidence and provide guidance for healthcare providers during their daily practice. CPGs can support the knowledge-to-action cycle effectively if they were developed using a systematic and rigorous methodology. Published evidence has revealed that CPGs can improve patient outcomes, patient experience, and quality and safety in healthcare.

This adapted CPG is intended for use by healthcare professionals to aid in the management of ADHD in children under 5 years, children and young people (aged 5 to 17 years), and adults aged 18 years or over.

Recommendations

Strength of Recommendations

Must: Recommendations That Must (or Must Not) Be Followed

The words ‘must’ or ‘must not’ are generally only used if there is a legal duty to apply the recommendation. Occasionally the word ‘must’ (or ‘must not’) has been used if the consequences of not following the recommendation could be extremely serious or potentially life threatening.

Should: Recommendations That Should (or Should Not) Be Followed – a 'Strong' Recommendation

The word ‘offer’ (and similar words such as ‘refer’ or ‘advise’) has been used when there is a good degree of confidence that, for the vast majority of patients, an intervention will do more good than harm, and be cost effective. Similar forms of words (for example, ‘Do not offer...’) are used when an intervention will not be of benefit for most patients.

Could: Recommendations That Could Be Followed

The word 'consider' is used when an intervention will do more good than harm for most patients, and will be cost effective, but other options may be similarly cost effective. The choice of intervention, and whether or not to have the intervention at all, is more likely to depend on the patient's/caregiver’s values and preferences than on the strength of a recommendation, and so the healthcare professional should spend more time considering and discussing the options with the patient.

Key Recommendations

1 Service organisation and training

1.1 People with attention deficit hyperactivity disorder (ADHD) would benefit from improved organisation of care and better integration of child health services, child and adolescent mental health services and adult mental health services.

1.2 Mental health services for children, young people and adults should work to form multidisciplinary specialist ADHD teams and/or clinics for children and young people, and separate teams and/or clinics for adults in all health care settings. These teams and clinics should have expertise in the diagnosis and management of ADHD, and should:

- Provide diagnostic, treatment and consultation services for people with ADHD who have complex needs.
- Put in place systems of communication and protocols for information sharing among paediatric, child and adolescent, forensic, and adult mental health services for people with ADHD, including arrangements for transition between child and adult services.
- Produce local protocols for shared care arrangements with primary care providers and ensure that clear lines of communication between primary and secondary care are maintained.
- Ensure age-appropriate psychological services are available for children, young people and adults with ADHD, and for parents or carers.
- The size and time commitment of these teams should depend on local circumstances.

1.3 Every locality should develop a multi-agency group, with representatives from multidisciplinary specialist ADHD teams, paediatrics, mental health, learning disability, forensic, child and adolescent mental health services, and relevant Ministry departments (including services for school health, education and social services), societies, parent support groups and others with a significant local involvement in ADHD services. The group should oversee the implementation of this CPG.

1.4 A young person with ADHD receiving treatment and care from paediatric mental health services should be reassessed to establish the need for continuing treatment into adolescence and adulthood. If treatment is necessary, arrangements should be made for a smooth transition to adult services at this time with details of the anticipated treatment and services that the young person will require, since by the age of 14 years (in Paediatrics) or 18 years (in Psychiatry) they will no longer be eligible for paediatric/adolescent services in many settings.

1.5 During the transition to adult services, a formal written referral to adult services

should be considered, and full information provided to the young person about adult services. The young person, as well as their parent or carer if under 18 years old, should be involved in the planning.

1.6 After transition to adult services, adult healthcare professionals should carry out a comprehensive assessment of the person with ADHD that includes personal, educational, occupational and social functioning, and assessment of any coexisting conditions, especially drug misuse, personality disorders, emotional problems and learning difficulties.

Training

1.7 Governmental services should ensure that specialist ADHD teams for children, young people and adults jointly develop training programmes on diagnosis and management of ADHD in different age groups for mental health, paediatric, social care, education, forensic and primary care providers and other professionals who have contact with people with ADHD.

1.8 Child and Adult psychiatrists, clinical psychologists, paediatricians, family physicians, and other child and adult mental health professionals (including those working in forensic services) should undertake training so that they are able to diagnose ADHD and provide treatment and management in accordance with this CPG.

2 Recognition, identification and referral

Recognition

2.1 Be aware that people in the following groups may have increased prevalence of ADHD compared with the general population:

- people born preterm
- looked-after children (e.g. those living in care homes such as orphanages or juvenile detention facilities) and young people
- children and young people diagnosed with oppositional defiant disorder or conduct disorder
- children and young people with mood disorders (for example, anxiety and depression)
- people with a close family member diagnosed with ADHD
- people with epilepsy
- people with neurodevelopmental disorders (for example, autism spectrum disorder, tic disorders, intellectual disability and specific learning difficulties). See p24, Early Recognition and Diagnosis, Evidence-Based CPG for Management of Children with ASD (Saudi Health Council, 2022). [Update 2022-5]
- adults with mental health conditions
- people with a history of substance use disorders
- people known to the youth or adult criminal justice organizations
- people with acquired brain injury.

2.2 Be aware that ADHD is thought to be over-diagnosed in children that are younger in chronological age than their classroom peers.

2.3 Be aware that ADHD is thought to be under-recognised in girls and women and that:

- they are less likely to be referred for assessment for ADHD
- they may be more likely to have undiagnosed ADHD
- they may be more likely to receive an incorrect diagnosis of another mental health or neurodevelopmental condition.

Identification and referral

2.4 Universal screening for ADHD should not be undertaken in nursery, primary and secondary schools.

2.5 When a child or young person with disordered conduct and suspected ADHD is referred to a school's special education teacher or consulting teacher, in addition to helping the child with their behaviour, they should inform the parents about local specialized programmes (e.g. Developmental and Behavioural Clinics).

2.6 Referral from primary to secondary care may involve health, education and social care professionals (for example, family physicians, paediatricians, educational psychologists, school special educators and coordinators, and social workers) and care pathways can vary locally. The person making the referral to secondary care should inform the child or young person's primary physician if they have one.

2.7 When a child or young person presents in primary care with behavioural and/or attention problems suggestive of ADHD, primary care practitioners should determine the severity of the problems (using a structured screening tool), how these affect the child or young person and the parents or carers, and the extent to which they pervade different domains and settings.

2.8 If the child or young person's behavioural and/or attention problems suggestive of ADHD are having an adverse impact on their development or family life, consider:

- a period of watchful waiting of up to 10 weeks unless the severity and dysfunction demands immediate intervention
- offering parents or carers a referral to group-based ADHD-focused support where available (this should not wait for a formal diagnosis of ADHD).

  If the behavioural and/or attention problems persist with at least moderate impairment, the child or young person should be referred to secondary care (that is, a child psychiatrist, an appropriately trained paediatrician, an appropriately trained family physician, or specialist ADHD child and adolescent mental health services) for assessment.

2.9 If the child or young person's behavioural and/or attention problems are associated with severe impairment, referral should be made directly to secondary care (that is, a child psychiatrist, an appropriately trained paediatrician, an appropriately trained family physician, or specialist ADHD child and adolescent mental health services) for assessment.

2.10 Primary care practitioners should not make the initial diagnosis or start medication in children or young people with suspected ADHD unless the primary care practitioner is an appropriately trained family physician or paediatrician.

2.11 Adults presenting with symptoms of ADHD in primary care or general adult psychiatric services, who do not have a childhood diagnosis of ADHD, should be referred for assessment by a mental health specialist trained in the diagnosis and treatment of ADHD, where there is evidence of typical manifestations of ADHD (hyperactivity/impulsivity and/or inattention) that:

- began during childhood and have persisted throughout life
- are not explained by other psychiatric diagnoses (although there may be other coexisting psychiatric conditions)
- have resulted in or are associated with moderate or severe psychological, social and/or educational or occupational impairment.

2.12 Adults who have previously been treated for ADHD as children or young people and present with symptoms suggestive of continuing ADHD should be referred to general adult psychiatric services for assessment. The symptoms should be associated with at least moderate or severe psychological, social, educational and/or occupational impairment.

3 Diagnosis

3.1 A diagnosis of ADHD should only be made by a specialist psychiatrist, specialized paediatrician, an appropriately trained family physician or other appropriately qualified healthcare professional with training and expertise in the diagnosis of ADHD, on the basis of:

- a full clinical and psychosocial assessment of the person; this should include discussion about behaviour and symptoms in the different domains and settings of the person's everyday life **and**
- a full developmental and psychiatric history **and**
- observer reports and assessment of the person's mental state.

3.2 A diagnosis of ADHD should not be made solely on the basis of rating scale or observational data. However, rating scales such as the Conner's rating scales, Arabic version of the Vanderbilt ADHD Rating Scale, and the Strengths and Difficulties Questionnaire are valuable adjuncts, especially when rated by multiple raters in multiple settings (e.g., parent, teachers, the adolescent), and observations (for example, at school) are useful when there is doubt about symptoms.

3.3 For a diagnosis of ADHD, symptoms of hyperactivity/impulsivity and/or inattention should:

- meet the diagnostic criteria in DSM V or ICD-11 **and**
- cause at least moderate psychological, social and/or educational/ occupational impairment based on interview and/or direct observation in multiple settings **and**
- be pervasive, occurring in 2 or more important settings including social, familial, educational and/or occupational settings.

  As part of the diagnostic process, include an assessment of the person's needs, coexisting conditions, social, familial and educational/occupational circumstances and physical health. For children and young people, there should also be an observation of their parents' or carers' mental health.

3.4 ADHD should be considered in all age groups, with symptom criteria adjusted for age-appropriate changes in behaviour.

3.5 In determining the clinical significance of impairment resulting from the symptoms of ADHD in children and young people, their views should be taken into account wherever possible.

4 Support

Supporting people with ADHD

4.1 Following a diagnosis of ADHD, have a structured discussion with people (and their families or carers as appropriate) about how ADHD could affect their life. This could include:

- the positive impacts of receiving a diagnosis, such as:
  - improving their understanding of symptoms
  - identifying and building on individual strengths
  - improving access to services
- the negative impacts of receiving a diagnosis, such as stigma and labelling
- a greater tendency for impulsive behaviour
- the importance of environmental modifications to reduce the impact of ADHD symptoms
- education issues (for example, reasonable accommodations at school and college)
- employment issues (for example, impact on career choices and rights to reasonable accommodations in the workplace)
- social relationship issues
- the challenges of managing ADHD when a person has coexisting neurodevelopmental or mental health conditions
- the increased risk of substance misuse and self-medication
- the possible effect on driving (for example, ADHD symptoms may impair a person's driving and ADHD medication may improve this).

This structured discussion should inform the shared treatment plan.

4.2 Inform people receiving a diagnosis of ADHD (and their families or carers as appropriate) about sources of information, including:

- local and national support groups and voluntary organisations
- websites (e.g. Saudi ADHD Society)
- support for education and employment

People who have had an assessment but whose symptoms and impairment fall short of a diagnosis of ADHD may also benefit from similar information.

4.3 Provide information to people with ADHD (and their families and carers as appropriate) in a form that:

- takes into account their developmental level, cognitive style, emotional maturity and cognitive capacity, including any learning disabilities, sight or hearing problems, delays in language development or social communication difficulties
- takes into account any coexisting neurodevelopmental and mental health conditions
- is tailored to their individual needs and circumstances, including age, gender, educational level and life stage

Supporting families and carers

4.4 Ask families or carers of people with ADHD how the ADHD affects themselves and other family members, and discuss any concerns they have.

4.5 Encourage family members or carers of people with ADHD to seek an assessment of their personal, social and mental health needs, and to join self-help and support groups if appropriate.

4.6 Think about the needs of a parent with ADHD who also has a child with ADHD, including whether they need extra support with organisational strategies (for example, with adherence to treatment, daily school routines).

4.7 Offer advice to parents and carers of children and young people with ADHD about the importance of:

- positive parent–child (and carer–child) contact
- clear and appropriate rules about behaviour and consistent management
- structure in the child or young person's day.

4.8 Offer advice to families and carers of adults with ADHD about:

- how ADHD may affect relationships
- how ADHD may affect the person's functioning
- the importance of structure in daily activities

4.9 Explain to parents and carers that any recommendation of parent-training/education does not imply bad parenting, and that the aim is to optimise parenting skills to meet the above-average parenting needs of children and young people with ADHD.

Involving schools, colleges and universities

4.10 When ADHD is diagnosed, when symptoms change, and when there is transition between schools or from school to college or college to university, obtain consent and then contact the school, college or university to explain:

- the validity of a diagnosis of ADHD and how symptoms are likely to affect school, college or university life
- other coexisting conditions (for example, learning disabilities) are distinct from ADHD and may need different adjustments
- the treatment plan and identified special educational needs, including advice for reasonable adjustments and environmental modifications within the educational placement
- the value of feedback from schools, colleges and universities to people with ADHD and their healthcare professionals.

Involving other healthcare professionals

4.11 When a person with ADHD has a coexisting condition, contact the relevant healthcare professional to explain:

- the validity, scope and implications of a diagnosis of ADHD
- how ADHD symptoms are likely to affect the person's behaviour (for example, organisation, time management, motivation) and adherence to specific treatments
- the treatment plan and the value of feedback from healthcare professionals.

5 Managing ADHD

Planning treatment

5.1 Healthcare providers should ensure continuity of care for people with ADHD.

5.2 Ensure that people with ADHD have a comprehensive, holistic shared treatment plan that addresses psychological, behavioural and occupational or educational needs. Take into account:

- the severity of ADHD symptoms and impairment, and how these affect or may affect everyday life (including sleep)
- their goals
- their resilience and protective factors
- the relative impact of other neurodevelopmental or mental health conditions
- the relative impact or interaction of other general medical conditions and/or their treatments.

5.3 Regularly discuss with people with ADHD, and their family members or carers, how they want to be involved in treatment planning and decisions; such discussions should take place at intervals to take account of changes in circumstances (for example, the transition from children's to adult services) and developmental level, and should not happen only once.

5.4 Before starting any treatment for ADHD, discuss the following with the person, and their family or carers as appropriate, encouraging children and young people to give their own account of how they feel:

- the benefits and harms of non-pharmacological and pharmacological treatments (for example, the efficacy of medication compared with no treatment or non-pharmacological treatments, potential adverse effects and non-response rates)
- the benefits of a healthy lifestyle, including exercise
- their preferences and concerns (it is important to understand that a person's/carer's decision to start, change or stop treatment may be influenced by media coverage, teachers, family members, friends and differing opinion on the validity of a diagnosis of ADHD)
- how other mental health or neurodevelopmental conditions might affect treatment choices
- how nutritional status and/or other general medical conditions or existing medication regimens might affect treatment decisions
- the importance of adherence to treatment and any factors that may affect this (for example, it may be difficult to take medication at school or work, or to remember appointments).

Record the person's preferences and concerns in their treatment plan.

5.5 Ask young people (over 18 years old) and adults with ADHD if they wish a parent, partner, close friend or carer to join discussions on treatment and adherence.

5.6 Reassure people with ADHD, and their families or carers as appropriate, that they can revisit decisions about treatments.

Children under 5 years

These recommendations are for healthcare professionals with training and expertise in diagnosing and managing ADHD. See recommendation 4.3 for details of ADHD-focused information.

5.7 Offer an ADHD-focused group parent-training programme to parents or carers of children under 5 years with ADHD as first-line treatment .

5.8 If after an ADHD-focused group parent-training programme, ADHD symptoms across settings are still causing a significant impairment in a child under 5 years after environmental modifications have been implemented and reviewed, obtain advice from a specialist ADHD service with expertise in managing ADHD in young children (ideally a tertiary service).

5.9 Do not offer medication for ADHD for any child under 5 years without a second specialist opinion from an ADHD service with expertise in managing ADHD in young children (ideally a tertiary service).

Children aged 5 years and over and young people

These recommendations are for healthcare professionals with training and expertise in diagnosing and managing ADHD.

5.10 Give information about ADHD (see recommendation 4.3) and offer additional support to parents and carers of all children aged 5 years and over and young people with ADHD. The support should be ADHD focused, can be group based and as few as 1 or 2 sessions. It should include:

- education and information on the causes and impact of ADHD
- advice on parenting strategies
- with consent, liaison with school, college or university (see recommendation 4.12)
- both parents and carers if feasible.

5.11 If a child aged 5 years or over or young person has ADHD and symptoms of oppositional defiant disorder or conduct disorder, offer parents and carers a parent-training programme that focuses on these behaviours , as well as group-based ADHD-focused support.

5.12 Consider individual parent-training programmes for parents and carers of children and young people with ADHD and symptoms of oppositional defiant disorder or conduct disorder when:

- there are particular difficulties for families in attending group sessions (for example, because of disability, needs related to diversity such as language differences, learning disability [intellectual disability], parental ill-health, problems with transport, or where other factors suggest poor prospects for therapeutic engagement)
- a family's needs are too complex to be met by group-based parent-training programmes.

5.13 Offer medication for children aged 5 years and over and young people only if:

- their ADHD symptoms are still causing a persistent significant impairment in atleast one domain after environmental modifications have been implemented and reviewed
- they and their parents and carers have discussed information about ADHD (see recommendation 5.4)
- a baseline assessment has been carried out (see recommendation 7.3).

See the recommendations on medication.

5.14 Consider a course of cognitive behavioural therapy (CBT) for young people with ADHD who have benefited from medication but whose symptoms are still causing a significant impairment in at least one domain, addressing the following areas:

- social skills with peers
- problem-solving
- self-control
- active listening skills
- dealing with and expressing feelings

Adults

These recommendations are for healthcare professionals with training and expertise in diagnosing and managing ADHD. See recommendation 4.3 for details of ADHD-focused information.

5.15 Offer medication to adults with ADHD if their ADHD symptoms are still causing a significant impairment in at least one domain after environmental modifications have been implemented and reviewed. See the recommendations on medication choice.

5.16 Consider non-pharmacological treatment for adults with ADHD who have:

- made an informed choice not to have medication
- difficulty adhering to medication
- found medication to be ineffective or cannot tolerate it

5.17 Consider non-pharmacological treatment in combination with medication for adults with ADHD who have benefited from medication but whose symptoms are still causing a significant impairment in at least one domain.

5.18 When non-pharmacological treatment is indicated for adults with ADHD, offer the following as a minimum:

- a structured supportive psychological intervention focused on ADHD
- regular follow up either in person or by phone.

Treatment may involve elements of or a full course of CBT.

6 Dietary advice

6.1 Healthcare professionals should stress the value of a balanced diet, good nutrition and regular exercise for children, young people and adults with ADHD.

6.2 Do not advise elimination of artificial colouring and additives from the diet as a generally applicable treatment for children and young people with ADHD.

6.3 Ask about foods or drinks that appear to influence hyperactive behaviour as part of the clinical assessment of ADHD in children and young people, and:

- if there is a clear link, advise parents or carers to keep a diary of food and drinks taken and ADHD behaviour
- if the diary supports a relationship between specific foods and drinks and behaviour, offer referral to a dietitian
- ensure that further management (for example, specific dietary elimination) is jointly undertaken by the dietitian, mental health specialist or paediatrician, and the parent or carer and child or young person.

6.4 Do not advise or offer dietary fatty acid supplementation for treating ADHD in children and young people.

6.5 Advise the family members or carers of children with ADHD that there is no evidence about the long-term effectiveness or potential harms of a 'few food' diet for children with ADHD, and only limited evidence of short-term benefits .

7 Medication

These recommendations, with the exception of 7.28, are for healthcare professionals with training and expertise in diagnosing and managing ADHD.

7.1 All medication for ADHD should only be initiated by a healthcare professional with training and expertise in diagnosing and managing ADHD.

7.2 Healthcare professionals initiating medication for ADHD should:

- be familiar with the pharmacokinetic profiles of all the short- and long-acting preparations available for ADHD
- ensure that treatment is tailored effectively to the individual needs of the child, young person or adult
- take account of variations in bioavailability or pharmacokinetic profiles of different preparations to avoid reduced effect or excessive adverse effects.

Baseline assessment

7.3 Before starting medication for ADHD, people with ADHD should have a full assessment, which should include:

1. a review to confirm they continue to meet the criteria for ADHD and need treatment
2. a review of mental health and social circumstances, including:
    - presence of coexisting mental health and neurodevelopmental conditions
    - current educational or employment circumstances
    - risk assessment for substance misuse and drug diversion
    - care needs
3. a review of physical health, including:
    - a medical history, taking into account conditions that may be contraindications for specific medicines
    - current medication
    - height and weight (measured and recorded against the normal range for age, height and sex)
    - baseline pulse and blood pressure (measured with an appropriately sized cuff and compared with the normal range for age)
    - a cardiovascular assessment [Update 2022-1a]

    An electrocardiogram (ECG) is not needed before starting stimulants, atomoxetine or guanfacine, unless the person has any of the features in recommendation 7.4, or a co-existing condition that is being treated with a medicine that may pose an increased cardiac risk. [Update 2022-1b]

7.4 Refer for a cardiology opinion before starting medication for ADHD if any of the following apply:

- history of congenital heart disease or previous cardiac surgery
- history of sudden death in a first-degree relative under 40 years suggesting a cardiac disease
- shortness of breath on exertion compared with peers
- fainting on exertion or in response to fright or noise
- palpitations that are rapid, regular and start and stop suddenly (fleeting occasional bumps are usually ectopic and do not need investigation)
- chest pain suggesting cardiac origin
- signs of heart failure
- a murmur heard on cardiac examination
- blood pressure that is classified as hypertensive for adults

7.5 Refer to a paediatric hypertension specialist before starting medication for ADHD if blood pressure is consistently above the 95th centile for age and height for children and young people.

Medication choice – children aged 5 years and over and young people

7.6 Offer methylphenidate (either short or long acting) as the first line pharmacological treatment for children aged 5 years and over and young people with ADHD, taking into consideration that this is an off-label use for children aged between 5 and 6 years. [Update 2022-2]

7.7 Consider switching to lisdexamfetamine for children aged 5 years and over and young people who have had a 6 week trial of methylphenidate at an adequate dose and have not derived enough benefit in terms of reduced ADHD symptoms and associated impairment.

7.8 Consider dexamfetamine for children aged 5 years and over and young people whose ADHD symptoms are responding to lisdexamfetamine but who cannot tolerate the longer effect profile.

7.9 Offer atomoxetine or guanfacine to children aged 5 years and over and young people if:

- they cannot tolerate methylphenidate or lisdexamfetamine or
- their symptoms have not responded to separate 6 week trials of lisdexamfetamine and methylphenidate, having considered alternative preparations and adequate doses.

Medication choice – adults

7.10 Offer lisdexamfetamine or methylphenidate as first-line pharmacological treatment for adults with ADHD. This is an off-label use of lisdexamfetamine for adults with no ADHD symptoms in childhood. [Update 2022-3a] Not all preparations of methylphenidate are licensed for treating symptoms of ADHD in adults. [Update 2022-3b]

7.11 Consider switching to lisdexamfetamine for adults who have had a 6 week trial of methylphenidate at an adequate dose but have not derived enough benefit in terms of reduced ADHD symptoms and associated impairment.

7.12 Consider switching to methylphenidate for adults who have had a 6 week trial of lisdexamfetamine at an adequate dose but have not derived enough benefit in terms of reduced ADHD symptoms and associated impairment.

7.13 Consider dexamfetamine for adults whose ADHD symptoms are responding to lisdexamfetamine but who cannot tolerate the longer effect profile.

7.14 Offer atomoxetine to adults if:

- they cannot tolerate lisdexamfetamine or methylphenidate or
- their symptoms have not responded to separate 6 week trials of lisdexamfetamine and methylphenidate, having considered alternative preparations and adequate doses.

Further medication choices

7.15 Obtain a second opinion or refer to a tertiary service if ADHD symptoms in a child aged 5 years or over, a young person or adult are unresponsive to one or more stimulants and one non-stimulant.

7.16 Do not offer any of the following medications for ADHD without advice from a tertiary ADHD service:

- guanfacine for adults
- clonidine for children with ADHD and sleep disturbance, rages or tics
- atypical antipsychotics in addition to stimulants for people with ADHD and coexisting pervasive aggression, rages or irritability
- medications not included in recommendations 7.6 to 7.14.

Medication choice – people with coexisting conditions

7.17 Offer the same medication choices to people with ADHD and anxiety disorder, tic disorder or autism spectrum disorder as other people with ADHD. See p52, Pharmacological Interventions, Evidence-Based CPG for Management of Children with ASD (Saudi Health Council, 2022). [Update 2022-6]

7.18 For children aged 5 years and over, young people and adults with ADHD experiencing an acute psychotic or manic episode:

- stop any medication for ADHD
- refer back to a tertiary ADHD service or specialized psychiatrist who may consider restarting or starting new ADHD medication after the episode has resolved, taking into account the individual circumstances, risks and benefits of the ADHD medication.

Considerations when prescribing ADHD medication

7.19 When prescribing stimulants for ADHD, think about modified-release once-daily preparations for the following reasons:

- convenience
- improving adherence
- reducing stigma (because there is no need to take medication at school or in the workplace)
- reducing problems of storing and administering controlled drugs at school
- the risk of stimulant misuse and diversion with immediate-release preparations
- their pharmacokinetic profiles

Immediate-release preparations may be suitable if more flexible dosing regimens are needed, or during initial titration to determine correct dosing levels.

7.20 When prescribing stimulants for ADHD, be aware that effect size, duration of effect and adverse effects vary from person to person.

7.21 Think about using immediate- and modified-release preparations of stimulants to optimise effect (for example, a modified-release preparation of methylphenidate in the morning and an immediate-release preparation of methylphenidate at another time of the day to extend the duration of effect).

7.22 Be cautious about prescribing stimulants for ADHD if there is a risk of diversion for cognitive enhancement or appetite suppression.

7.23 Do not offer immediate-release stimulants or modified-release stimulants that can be easily injected or insufflated if there is a risk of stimulant misuse or diversion.

7.24 Take into consideration the nutritional status of the child (e.g. BMI) because of the risk of weight loss when taking stimulants.

7.25 Prescribers should be familiar with the requirements of controlled drug legislation governing the prescription and supply of stimulants. See Saudi MOH Regulations and Controls for Narcotic Drugs and Psychotropic Substances.

Dose titration

7.26 During the titration phase, ADHD symptoms, impairment and adverse effects should be recorded at baseline and at each dose change on standard scales by parents and teachers, and progress reviewed regularly (for example, by weekly telephone contact) with a specialist.

7.27 Titrate the dose against symptoms and adverse effects in line with the SNF (Saudi National Formulary) until dose optimisation is achieved, that is, reduced symptoms, positive behaviour change, improvements in education, employment and relationships, with tolerable adverse effects.

7.28 Ensure that dose titration is slower and monitoring more frequent if any of the following are present in people with ADHD, and require involvement of a relevant specialist:

- neurodevelopmental disorders (for example, autism spectrum disorder, tic disorders, learning disability [intellectual disability])
- mental health conditions (for example, anxiety disorders [including obsessive–compulsive disorder], schizophrenia or bipolar disorder, depression, personality disorder, eating disorder, post-traumatic stress disorder, substance misuse)
- physical health conditions (for example, cardiac disease, epilepsy or acquired brain injury).

Shared care for medication

7.29 After titration and dose stabilisation, prescribing and monitoring of ADHD medication should be carried out under a shared care arrangement with primary care if possible.

8 Maintenance and monitoring

8.1 Monitor effectiveness of medication for ADHD and adverse effects, and document in the person's notes.

8.2 Encourage people taking medication for ADHD to monitor and record their adverse effects, for example, by using an adverse effect checklist.

8.3 Consider using standard symptom and adverse effect rating scales for clinical assessment and throughout the course of treatment for people with ADHD.

8.4 Ensure that children, young people and adults receiving treatment for ADHD have review and follow up according to the severity of their condition, regardless of whether or not they are taking medication.

Height and weight

8.5 For people taking medication for ADHD:

1. measure height every 6 months in children and young people
2. measure weight every 3 months in children 10 years and under
3. measure weight at 3 and 6 months after starting treatment in children over 10 years and young people, and every 6 months thereafter, or more often if concerns arise
4. measure weight every 6 months in adults
5. plot height and weight of children and young people on a growth chart and ensure review by the healthcare professional responsible for treatment.

8.6 If weight loss is a clinical concern, consider the following strategies:

- taking medication either with or after food, rather than before meals
- taking additional meals or snacks early in the morning or late in the evening when stimulant effects have worn off
- obtaining dietary advice
- consuming high-calorie foods of good nutritional value
- taking a planned break from treatment
- changing medication

8.7 If a child or young person's height over time is significantly affected by medication (that is, they have not met the height expected for their age), consider a planned break in treatment over school holidays to allow 'catch up' growth.

8.8 Consider monitoring BMI of adults with ADHD if there has been weight change as a result of their treatment, and changing the medication if weight change persists

Cardiovascular

8.9 Monitor heart rate and blood pressure and compare with the normal range for age before and after each dose change and every 6 months.

8.10 Do not offer routine blood tests (including liver function tests) or ECGs to people taking medication for ADHD unless there is a clinical indication.

8.11 If a person taking ADHD medication has sustained resting tachycardia (more than 120 beats per minute), arrhythmia or systolic blood pressure greater than the 95th percentile (or a clinically significant increase) measured on 2 occasions, reduce their dose and refer them to a paediatric hypertension specialist or adult physician.

8.12 If a person taking guanfacine has sustained orthostatic hypotension or fainting episodes, reduce their dose or switch to another ADHD medication.

Tics

8.13 If a person taking stimulants develops tics, think about whether:

- the tics are related to the stimulant (tics naturally wax and wane) **and**
- the impairment associated with the tics outweighs the benefits of ADHD treatment.

8.14 If tics are stimulant related, reduce the stimulant dose, or consider changing to guanfacine (in children aged 5 years and over and young people only), atomoxetine (off-label use for adults with no ADHD symptoms in childhood) [Update 2022-4a], clonidine (off-label use for children) [Update 2022-4b], or stopping medication. Clonidine should only be considered for people under 18 years after advice from a tertiary ADHD service. [Update 2022-4c]

Sexual dysfunction

8.15 Monitor young people and adults with ADHD for sexual dysfunction (that is, erectile and ejaculatory dysfunction) as potential adverse effects of atomoxetine.

Seizures

8.16 If a person with ADHD develops new seizures or a worsening of existing seizures, review their ADHD medication and stop any medication that might be contributing to the seizures. After investigation with the treating neurologist, cautiously reintroduce ADHD medication if it is unlikely to be the cause of the seizures.

Sleep

8.17 Monitor changes in sleep pattern (for example, with a sleep diary) and adjust medication accordingly.

Worsening behaviour

8.18 Monitor the behavioural response to medication, and if behaviour worsens adjust medication and review the diagnosis.

Stimulant diversion

8.19 Healthcare professionals and parents or carers should monitor changes in the potential for stimulant misuse and diversion, which may come with changes in circumstances and age.

9 Adherence to treatment

9.1 Be aware that the symptoms of ADHD may lead to people having difficulty adhering to treatment plans (for example, remembering to order and collect medication).

9.2 Ensure that people are fully informed of the balance of risks and benefits of any treatment for ADHD and check that problems with adherence are not due to misconceptions (for example, tell people that medication does not change personality).

9.3 Encourage the person with ADHD to use the following strategies to support adherence to treatment:

- being responsible for their own health, including taking their medication as needed
- following clear instructions about how to take the medication in picture or written format, which may include information on dose, duration, adverse effects, dosage schedule (the instructions should stay with the medication, for example, a sticker on the side of the packet)
- using visual reminders to take medication regularly (for example, apps, alarms, clocks, pill dispensers, or notes on calendars or fridges)
- taking medication as part of their daily routine (for example, before meals or after brushing teeth)
- attending peer support groups (for both the person with ADHD and for the families and carers) .

9.4 Encourage parents and carers to oversee ADHD medication for children and young people.

Supporting adherence to non-pharmacological treatments

9.5 Support adherence to non-pharmacological treatments (for example, CBT) by discussing the following:

- the balance of risks and benefits (for example, how the treatment can have a positive effect on ADHD symptoms)
- the potential barriers to continuing treatment, including:
  - not being sure if it is making any difference
  - the time and organisational skills needed to commit to the treatment
  - the time that might be needed outside of the sessions (for example, to complete homework)
- strategies to deal with any identified barriers (for example, scheduling sessions to minimise inconvenience or seeking courses with child care provision)

- a possible effect of treatment being increased self-awareness, and the challenging impact this may have on the person and the people around them
- the importance of long-term adherence beyond the duration of any initial programme (for example, by attending follow up/refresher support to sustain learned strategies).

10 Review of medication and discontinuation

10.1 A healthcare professional with training and expertise in managing ADHD should review ADHD medication at least once a year and discuss with the person with ADHD (and their families and carers as appropriate) whether medication should be continued. The review should include a comprehensive assessment of the:

- preference of the child, young person or adult with ADHD (and their family or carers as appropriate)
- benefits, including how well the current treatment is working throughout the day
- adverse effects
- clinical need and whether medication has been optimised
- impact on education and/or employment
- effects of missed doses, planned dose reductions and periods of no treatment
- effect of medication on existing or new mental health, physical health or neurodevelopmental conditions
- need for support and type of support (for example, psychological, educational, social) if medication has been optimised but ADHD symptoms continue to cause a significant impairment.

10.2 Encourage people with ADHD to discuss any preferences to stop or change medication and to be involved in any decisions about stopping treatments.

10.3 Consider trial periods of stopping medication or reducing the dose when assessment of the overall balance of benefits and harms suggests this may be appropriate. If the decision is made to continue medication, the reasons for this should be documented.

Terminology

ADHD

Attention-Deficit Hyperactivity Disorder (ADHD) refers to the ADHD "sub-types" as defined in the International Classification of Diseases, 10th revision [ICD-10-CM] or "presentations" as defined in the International Classification of Diseases, 11th revision [ICD-11], and the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition [DSM-V].

Domains

Domains refer to areas of function, for example, interpersonal relationships, education and occupational attainment, and risk awareness.

Environmental modifications

Environmental modifications are changes that are made to the physical environment in order to minimise the impact of a person's ADHD on their day-to-day life. Appropriate environmental modifications will be specific to the circumstances of each person with ADHD and should be determined from an assessment of their needs. Examples may include changes to seating arrangements, changes to lighting and noise, reducing distractions (for example, using headphones), optimising work or education to have shorter periods of focus with movement breaks (including the use of 'I need a break' cards), reinforcing verbal requests with written instructions and, for children, the appropriate use of teaching assistants at school.

Reasonable adjustments / accommodations

Reasonable adjustment is a term that refers to the legal obligations of employers and higher education providers to make sure that workers or students with disabilities, or physical or mental health conditions are not substantially disadvantaged when doing their jobs or during their education. The term reasonable accommodation is more commonly used in an educational setting.

Shared treatment plan

A written treatment plan shared between healthcare professional and the person with ADHD; for children, this may be shared more widely (for example, with families, schools or social care, if relevant and agreed).

Settings

Settings refer to the physical location, for example, home, nursery, friends or family homes.

Primary Care

Health centers (local clinics)

Secondary Care

General hospitals

Tertiary Care

Specialized hospitals

Children

Younger than 5 years

Young people

From 5 to 18 years

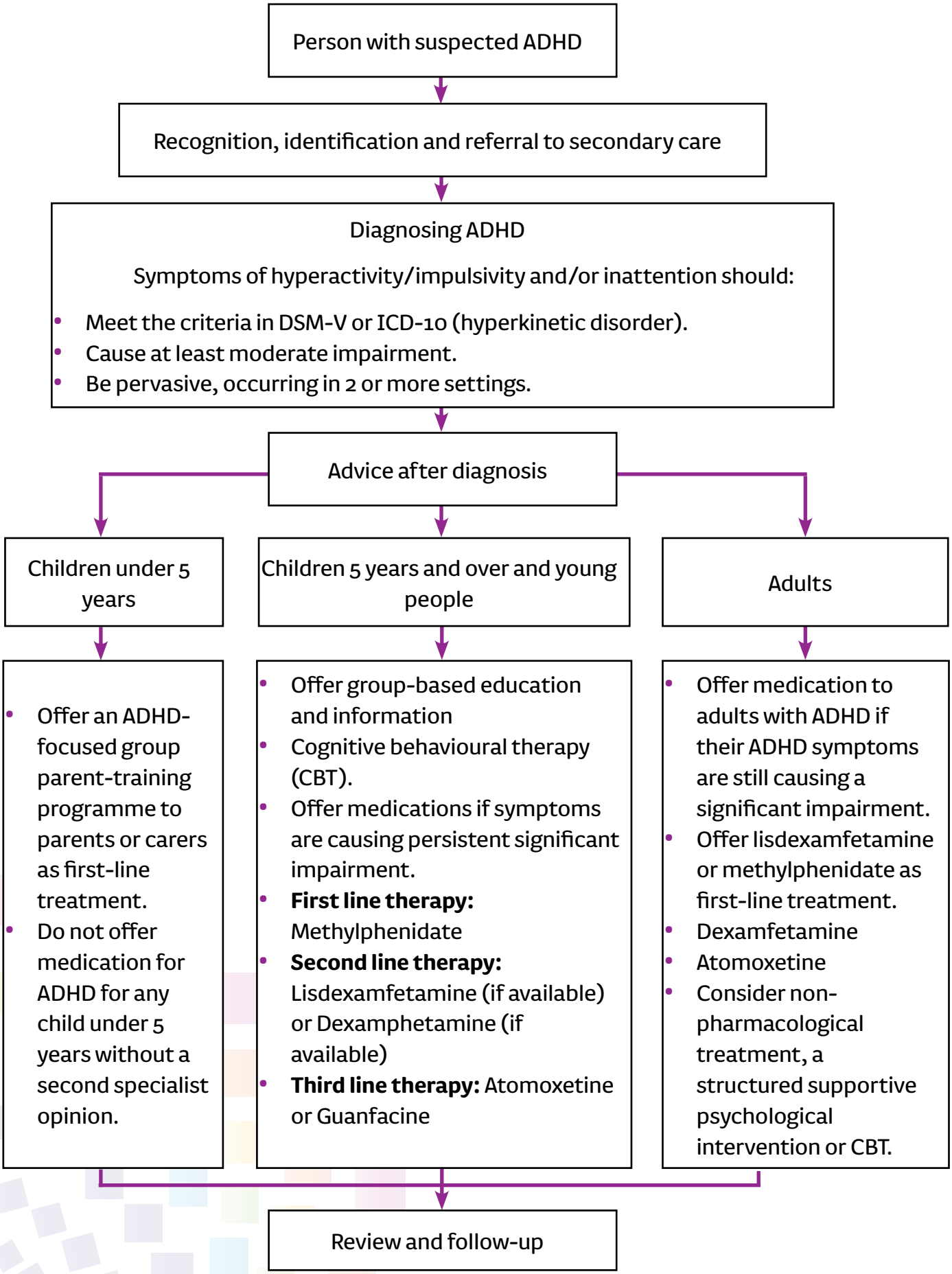
Adults

Older than 18 years

Implementation Tools & Considerations

1: Clinical Algorithm

ADHD management algorithm



2: Summary Quality Standards

This includes seven Quality standards that can be used as Key Performance Indicators (KPIs) for quality improvement. In this summary booklet of the CPG, only the main statements are listed for your reference. For the complete ADHD Quality Standards, kindly see the full CPG document available from: https://cpg.adhd.org.sa/

Statement 1: Confirmation of diagnosis:

Children and young people with symptoms of attention deficit hyperactivity disorder (ADHD) are referred to an ADHD specialist for assessment.

Statement 2. Identification and referral in adults:

Adults who present with symptoms of attention deficit hyperactivity disorder (ADHD), who do not have a childhood diagnosis of ADHD, are referred to an ADHD specialist for assessment.

Statement 3. Continuity of child to adult services:

Adults who were diagnosed with and treated for attention deficit hyperactivity disorder (ADHD) as children or young people and present with symptoms of continuing ADHD are referred to general adult psychiatric services.

Statement 4. Parent training programmes:

Parents or carers of children with symptoms of attention deficit hyperactivity disorder (ADHD) who meet the eligibility criteria are offered a referral to a parent training programme.

Statement 6. Starting drug treatment:

People with attention deficit hyperactivity disorder (ADHD) who are starting drug treatment have their initial drug dose adjusted and response assessed by an ADHD specialist.

Statement 7. Annual review of drug treatment:

People with attention deficit hyperactivity disorder (ADHD) who are taking drug treatment have a specialist review at least annually to assess their need for continued treatment.

For definition of terms, rationale, quality measures (structure, process, and outcome with data source for each), value of each quality statement for service providers, health and social care, practitioners, commissioners, patients, service users, and carers, and for baseline assessment tool, see link: **https://cpg.adhd.org.sa**

3: Medication Table

Summarized Drug Treatment for People with ADHD

A. Children and Young People

Drug treatment is not recommended for pre-school children with ADHD without a second opinion from an ADHD specialized practitioner. At the time of publication, lisdexamfetamine and dexamfetamine did not have SFDA approval. Informed consent should be obtained and documented.

Drug treatment is not indicated as the first-line treatment for all school-age children and young people with ADHD. It should be reserved for those with severe symptoms and impairment or for those with moderate levels of impairment who have refused non-drug interventions, or whose symptoms have not responded sufficiently to parent-training/education programmes or group psychological treatment where available.

Antipsychotics and tricyclic antidepressants are not recommended for the treatment of ADHD in children and young people.

	Name	Indication	Authorization Status (SFDA)	Dosage	Special Precautions & Monitoring
1.	Methylphenidate	ADHD without significant comorbidity ADHD with comorbid conduct disorder In ADHD when tics, Tourette›s syndrome, anxiety disorder, stimulant misuse, or risk of stimulant diversion are present	Authorized	Modified-release preparations are preferred because of: • Convenience • Improving adherence • Reducing stigma (because the child or young person does not need to take medication at school) • Reducing problems schools have in storing and administering controlled drugs • Their pharmacokinetic profiles Initial treatment should begin with low doses of immediate-release or modified-release preparations consistent with starting doses in the Saudi National Formulary (SNF) The dose should be titrated against symptoms and side effects over 4 to 6 weeks until dose optimisation is achieved Modified-release preparations should be given as a single dose in the morning Immediate-release preparations should be given in two or three divided doses Methylphenidate can be increased to 0.7 mg/kg per dose up to three times a day or a total daily dose of 2.1 mg/kg/day (up to a total maximum dose of 90 mg/day for immediate release; or an equivalent dose of modified-release methylphenidate	Height should be measured every 6 months Weight should be measured 3 and 6 months after drug treatment has started and every 6 months thereafter Height and weight should be plotted on a growth chart and reviewed by the healthcare professional responsible for treatment Healthcare professionals and parents or carers should monitor changes in the potential for drug misuse and diversion, which may come with changes in circumstances and age. In these situations, modified-release methylphenidate or atomoxetine may be preferred For people who have sustained resting tachycardia, arrhythmia or systolic blood pressure greater than the 95th percentile (or a clinically significant increase) measured on two occasions should have their dose reduced and be referred to a paediatrician. If psychotic symptoms (for example, delusions and hallucinations) emerge starting methylphenidate or dexamfetamine, the drug should be withdrawn and a full psychiatric assessment carried out. Atomoxetine could be considered as an alternative. Although there is no evidence that methylphenidate increases the risk of seizures, if seizures are exacerbated in a child or young person with epilepsy, or de novo seizures emerge following the introduction of methylphenidate, the drug should be discontinued immediately. Dexamfetamine may be considered as an alternative in consultation with a regional tertiary specialist treatment centre. If tics emerge in people taking methylphenidate, healthcare professionals should consider whether: • The tics are stimulant-related (tics naturally wax and wane) • Tic-related impairment outweighs the benefits of ADHD treatment • If tics are stimulant-related, reduce the dose of methylphenidate; consider changing to atomoxetine, or stop drug treatment.

	Name	Indication	Authorization Status (SFDA)	Dosage	Special Precautions & Monitoring
2.	Atomoxetine	When tics, Tourette's syndrome, anxiety disorder, stimulant misuse, or risk of stimulant diversion are present If methylphenidate has been tried and has been ineffective at the maximum tolerated dose, or the child or young person is intolerant to low or moderate doses of methylphenidate	Authorized	For those weighing up to 70 kg, the initial total daily dose should be approximately 0.5 mg/kg; the dose should be increased after 7 days to approximately 1.2 mg/kg/day For those weighing more than 70 kg, the initial total daily dose should be 40 mg; the dose should be increased after 7 days up to a maintenance dose of 80 mg/day A single daily dose can be given; two divided doses may be prescribed to minimise side effects Atomoxetine may be increased to 1.8 mg/kg/day (up to a total maximum dose of 120 mg/day).	People treated with atomoxetine should be observed for agitation, irritability, suicidal thinking and self-harming behaviour, and unusual changes in behaviour, particularly during the initial months of treatment, or after a change in dose. For people who have sustained resting tachycardia, arrhythmia or systolic blood pressure greater than the 95th percentile (or a clinically significant increase) measured on two occasions should have their dose reduced and be referred to a paediatrician. If seizures are exacerbated in a child or young person with epilepsy, or de novo seizures emerge following the introduction atomoxetine, the drug should be discontinued immediately. Dexamfetamine may be considered as an alternative in consultation with a regional tertiary specialist treatment centre.
3.	Dexamfetamine or Lisdexamfetamine	Dexamfetamine should be considered (if available) in children and young people whose ADHD is unresponsive to a maximum tolerated dose of methylphenidate or atomoxetine	At time of publication, not approved by SFDA	Initial treatment should begin with low doses The dose should be titrated against symptoms and side effects over 4 to 6 weeks Treatment should be given in divided doses increasing to a maximum of 20 mg/day For children aged 6 to 18 years, doses up to 40 mg/day may occasionally be required	Healthcare professionals and parents or carers should monitor changes in the potential for drug misuse and diversion, which may come with changes in circumstances and age. In these situations, modified-release methylphenidate or atomoxetine may be preferred For people who have sustained resting tachycardia, arrhythmia or systolic blood pressure greater than the 95th percentile (or a clinically significant increase) measured on two occasions should have their dose reduced & be referred to a paediatrician. If psychotic symptoms (for example, delusions and hallucinations) emerge starting methylphenidate or dexamfetamine, the drug should be withdrawn and a full psychiatric assessment carried out. Atomoxetine could be considered as an alternative. If tics emerge in people taking dexamfetamine, healthcare professionals should consider whether: • The tics are stimulant-related (tics naturally wax & wane) • Tic-related impairment outweighs the benefits of ADHD treatment If tics are stimulant-related, reduce the dose of dexamfetamine; consider changing to atomoxetine, or stop drug treatment.

	Name	Indication	Authorization Status (SFDA)	Dosage	Special Precautions & Monitoring
4.	Bupropion, Clonidine, Modafinil Imipramine	In children and young people whose ADHD is unresponsive to methylphenidate, atomoxetine and dexamfetamine	(Off-label)		The use of medication unlicensed for ADHD should only be considered in the context of tertiary services. Informed consent should be obtained and documented. A cardiovascular examination and electrocardiogram (ECG) should be carried out before starting treatment with clonidine in children or young people with ADHD.

B. Adult Treatment

Drug treatment is the first-line treatment for adults with ADHD with either moderate or severe levels of impairment. Methylphenidate is the first-line drug

There is the potential for drug misuse and diversion in adults with ADHD, especially in some settings, such as prison, although there is no strong evidence that this is a significant problem.

For adults with ADHD, drug treatment should be the first-line treatment unless the person would prefer a psychological approach. (At the time of publication dexamfetamine and lisdexamfetamine did not have SFDA Approval. Informed consent should be obtained and documented.)

	Name	Indication	Authorization Status (SFDA)	Dosage	Special Precautions & Monitoring
1	Methylphenidate	First-line drug	Authorized	Initial treatment should begin with low doses (5 mg three times daily for immediate-release preparations; the equivalent dose for modified-release preparations) The dose should be titrated against symptoms and side effects over 4 to 6 weeks The dose should be increased according to response up to a maximum of 100 mg/day Modified-release preparations should usually be given once daily and no more than twice daily Modified-release preparations may be preferred to increase adherence and in circumstances where there are concerns about substance misuse or diversion Immediate-release preparations should be given up to four times daily	Weight should be measured 3 and 6 months after drug treatment has started and every 6 months thereafter For people who have sustained resting tachycardia, arrhythmia or systolic blood pressure greater than the 95th percentile (or a clinically significant increase) measured on two occasions should have their dose reduced and be referred to adult physician. If psychotic symptoms (for example, delusions and hallucinations) emerge starting methylphenidate the drug should be withdrawn and a full psychiatric assessment carried out. Atomoxetine could be considered as an alternative. If tics emerge in people taking methylphenidate, healthcare professionals should consider whether: • The tics are stimulant-related (tics naturally wax & wane) • Tic-related impairment outweighs the benefits of ADHD treatment If tics are stimulant-related, reduce the dose of methylphenidate; consider changing to atomoxetine, or stop drug treatment. Anxiety symptoms, including panic, may be precipitated by stimulants, particularly in adults with a history of coexisting anxiety. Where this is an issue, lower doses of the stimulant and/or combined treatment with an antidepressant used to treat anxiety can be used; switching to atomoxetine may be effective

	Name	Indication	Authorization Status (SFDA)	Dosage	Special Precautions & Monitoring
2	Atomoxetine	In adults unresponsive or intolerant to an adequate trial of methylphenidate (this should usually be about 6 weeks). Where there may be concern about the potential for drug misuse and diversion (for example, in prison services), atomoxetine may be considered as the first-line drug treatment for ADHD in adults.	Authorized	For people with ADHD weighing up to 70 kg, the initial total daily dose should be approximately 0.5 mg/kg; the dose should be increased after 7 days to approximately 1.2 mg/kg/day • For people with ADHD weighing more than 70 kg, the initial total daily dose should be 40 mg; the dose should be increased after 7 days up to a maintenance dose of 100 mg/day • The usual maintenance dose is either 80 or 100 mg, which may be taken in divided doses A trial of 6 weeks on a maintenance dose should be allowed to evaluate the full effectiveness of atomoxetine	People treated with atomoxetine should be observed for agitation, irritability, suicidal thinking and self-harming behaviour, and unusual changes in behaviour, particularly during the initial months of treatment, or after a change in dose. For people who have sustained resting tachycardia, arrhythmia or systolic blood pressure greater than the 95th percentile (or a clinically significant increase) measured on two occasions should have their dose reduced and be referred to adult physician. Sexual dysfunction (that is, erectile and ejaculatory dysfunction) and dysmenorrhoea should be monitored as potential side effects of atomoxetine
3	Dexamfetamine or Lisdexamfetamine	In adults unresponsive or intolerant to an adequate trial of methylphenidate (this should usually be about 6 weeks).	At time of publication, not approved by SFDA	• Initial treatment should begin with low doses (5 mg twice daily) • The dose should be titrated against symptoms and side effects over 4 to 6 weeks • Treatment should be given in divided doses • The dose should be increased according to response up to a maximum of 60 mg/day The dose should usually be given between two and four times daily	If psychotic symptoms (for example, delusions and hallucinations) emerge starting methylphenidate or dexamfetamine, the drug should be withdrawn and a full psychiatric assessment carried out. Atomoxetine could be considered as an alternative. For people who have sustained resting tachycardia, arrhythmia or systolic blood pressure greater than the 95th percentile (or a clinically significant increase) measured on two occasions should have their dose reduced and be referred to adult physician. If tics emerge in people taking dexamfetamine, healthcare professionals should consider whether: • The tics are stimulant-related (tics naturally wax and wane) • Tic-related impairment outweighs the benefits of ADHD treatment If tics are stimulant-related, reduce the dose of dexamfetamine; consider changing to atomoxetine, or stop drug treatment. Anxiety symptoms, including panic, may be precipitated by stimulants, particularly in adults with a history of coexisting anxiety. Where this is an issue, lower doses of the stimulant and/or combined treatment with an antidepressant used to treat anxiety can be used; switching to atomoxetine may be effective

4: ICD Codes

ICD-10-AM ICD-10-AM Codes (Official codes adopted in Saudi Arabia):

Disturbance of activity and attention	F90
Hyperkinetic conduct disorder	F90.1
Other hyperkinetic disorders	F90.8
Hyperkinetic disorder, unspecified	F90.9

ICD-10-CM ICD-10-CM Codes (for ADHD in adults or in children):

Attention deficit hyperactivity disorder	F90
Attention-deficit hyperactivity disorder, predominantly inattentive type	F90.0
Attention-deficit hyperactivity disorder, predominantly hyperactive type	F90.1
Attention-deficit hyperactivity disorder, combined type	F90.2
Attention-deficit hyperactivity disorder, other type	F90.3
Attention-deficit hyperactivity disorder, unspecified type	F90.4

ICD-11 ICD-11 Codes (for ADHD in adults or in children):

Attention deficit hyperactivity disorder	6A05
Attention deficit hyperactivity disorder, predominantly inattentive presentation	6A05.0
Attention deficit hyperactivity disorder, predominantly hyperactive-impulsive presentation	6A05.1
Attention deficit hyperactivity disorder, combined presentation	6A05.2
Attention deficit hyperactivity disorder, other specified presentation	6A05.Y
Attention deficit hyperactivity disorder, presentation unspecified	6A05.Z

Appendices

Appendix A: CPG Adaptation Committee

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Dr Omar Almodayfer	Consultant Child & Adolescent Psychiatrist King Abdulaziz Medical City
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Dr Hesham Aldhalaan	Consultant and Head of Pediatric Neurology Section Department of Neurosciences King Faisal Specialist Hospital & Research Centre
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Disclaimer

Clinical Practice Guidelines (CPGs) are intended to serve as an aid to clinical judgment but are in no way a substitute for a medical professional's independent judgment and should not be considered medical advice. This CPG is a working document that reflects the state of the field at the time of publication and is based upon the accessible best updated published evidence. Because rapid changes in this area are expected, periodic revisions are inevitable. It is not intended to be explained or to serve as a standard of medical care. Standards of care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve, these parameters of practice should be considered guidelines only.

The presented recommendations may not be appropriate in all situations. Adherence to the CPG recommendations will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. Any decision by practitioners to apply this CPG must be made in light of local resources and individual patient circumstances. The ultimate judgment regarding a particular clinical procedure or treatment plan must be made by the appropriate healthcare professional(s) responsible for clinical decisions regarding a specific clinical situation; the doctor. This judgment should only be arrived at following discussion of the options with the patient and/or decision-making caregiver, in light of the diagnostic and treatment choices available. However, it is advised that significant departures from a national CPG or any local CPG derived or adapted from it should be fully documented in the patient's medical records at the time the relevant decision is made.

This CPG should not be construed as medical advice or medical opinion related to any specific facts or circumstances. If you are not one of the expert audiences listed in the professionals/ intended users section , you are urged to consult a health care professional regarding your own situation or that of someone you care for and any specific medical questions you may have. In addition, you should seek assistance from a health care professional in interpreting this CPG and applying it in your individual case.

Online Resources

The full CPG document is available online at: **https://cpg.adhd.org.sa/**

This includes the following additional items: Facilitators and barriers to implementation; Patient information; quality standards, Baseline assessment tool; Additional implementation tools; Adaptation methodology; Minor update log; Plan for scheduled review and update; Funding information; References

1.7.0

Saudi ADHD Society

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