Shared Care Guidelines

Shared Care Guidelines for Attention Deficit Hyperactivity Disorder in children:

BACKGROUND

Attention Deficit Hyperactivity Disorder (ADHD) is a neuro-developmental condition affecting 1-5% of school age children. Its core symptoms include developmentally inappropriate levels of attention, concentration, hyperactivity, distractibility and impulsivity. It causes problems at home, in school and with peer relationships and may have long term adverse effects on self-confidence, academic performance, vocational success and social development.

- It can be divided into two subtypes: ADD (Attention Deficit Disorder) or ADHD (Attention Deficit Hyperactivity Disorder)
- It must have been present for at least 6 months and be developmentally inappropriate.
- There must be clear evidence of impairment in social and / or academic functioning in at least two settings
- These signs must be present before the age of seven
- The signs must not be accountable for by any other type of mental disorder although they may occur in conjunction with some development disorders.

The consequences of this disorder are behavioural, emotional and social problems. These children's academic achievements are often very low, leading to low self-esteem. It is often co morbid with learning difficulties. Untreated, a proportion goes on to develop conduct disorder. Substance misuse is another frequently co morbid problem.

Diagnosis should be made by a child/adolescent psychiatrist or paediatrician. It should be based on a multidisciplinary assessment and include information obtained from the child's school teachers. (With parental consent)

SHARED CARE CRITERIA

If medication is indicated as part of the treatment package, the medication is initiated in the specialist clinic. Drug treatments for children with ADHD may form part of a comprehensive treatment programme that focuses on psychological, behavioural and educational advice and interventions.

- The patient will be commenced and stabilised on the ADHD medication prior to referral to GP for shared care.

Prescribing responsibility will only be transferred when it is agreed by the consultant and the General Practitioner (GP) that the patient's condition is reasonably predictable and the treatment regime has been specified.

- The CAMHS clinic will continue to provide prescriptions until there has been a successful transfer of the responsibilities as outlined below.
- The patient will be supplied sufficient quantity for 4 weeks which is to be continued by GP.

RESPONSIBILITIES

Responsibilities of the Consultant Child and Adolescent Psychiatrist

- Diagnosis of ADHD and decision to initiate treatment.

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- Ensure baseline monitoring of height, weight, blood pressure and pulse have been performed plus any additional relevant investigations. Where indicated, the consultant will request the GP to arrange a cardiovascular examination including an electrocardiogram (ECG) if there is past medical or family history of serious cardiac disease, a history of sudden death in young family members or abnormal findings of pulse and blood pressure.
- Initiation and stabilisation of medication treatment. Doses should be gradually increased until there is no further clinical improvement in ADHD (that is, symptom reduction, behaviour change, improvements in education and/or relationships) and side effects are tolerable.
- To ensure that the parents and class teachers are given written information about ADHD, its management including medical management, explaining the effects and side effects of medication. To assess the effects of the medication continued liaison is required with the parents and class teachers.
- To prescribe the medication until the dose is stabilised. Communicate to the GP which brand of long acting methylphenidate is prescribed, as different brands are not interchangeable.
- Evaluate adverse drug reactions reported by the GP, child, young person or the carer. Report events to the CSM/MHRA via yellow card system, www.yellowcard.gov.uk
- Set the review interval and criteria. Regular follow up should take place in CAMHS until the child's medication treatment is stabilised. Following that, six monthly medication review appointments are offered by the CAMHS service. Specialist ADHD nurse, junior doctors and other staff are closely involved with the monitoring of the patients. In addition to medication review appointments, more frequent appointments for behavioural and family interventions may be offered.
- Undertake any necessary monitoring at clinic appointments: blood pressure, pulse rate, weight and height (on a growth chart and record centiles).
- Maintain good communication with the GP. A letter will be sent to the GP after each clinic visit notifying the GP of changes in medication regime, adverse effects and results of the patient's routine monitoring. The need for ongoing treatment will be reviewed periodically by the CAMHS consultant. The review will include a comprehensive assessment of clinical need, benefits and side effects, taking into account the views of the child or young person, as well as those of parents, carers and teachers

Responsibilities of the General Practitioner (GP)

- Initial referral letter to Tier 3 CAMHS for assessment of ADHD highlighting relevant history and impairments at home and school.
- Prescribe methylphenidate, dexamfetamine, atomoxetine or lisdexamfetamine at the dose recommended.
- Adjust the dose as advised by the consultant.
- Report to and seek advice from the consultant on any aspect of patient care that is of concern and may affect treatment.
- Refer back to the consultant if the patient's condition deteriorates, as advised.
- Stop treatment on the advice of the consultant or immediately if an urgent need to stop treatment arises.
- Monitor patient's pulse, BP and weight every three months.
- Respond to requests to arrange a cardiovascular examination including an electrocardiogram (ECG) if there is past medical or family history of serious cardiac disease, a history of sudden death in young family members or abnormal findings on blood pressure, pulse or cardiac examination
- Report adverse events to the consultant and the MHRA/ CSM via Yellowcard located in BNF or online www.yellowcard.gov.uk.
- Communicate any test results to consultant.

Responsibilities of the patient's parent or guardian

- To attend review appointments at the GP surgery every three months for measurement of blood pressure and pulse, height and weight.
- To attend review appointments at Child and Adolescent Mental Health Services every 6 months or as advised, as continuing prescription will not be possible without regular review
- To report any side effects to the GP or CAMHS clinic.
- Inform of any other medication being taken concomitantly

LICENSED INDICATIONS

Methylphenidate and **dexamfetamine** are schedule 2 **controlled drugs (CD**) thus are subject to prescription requirements. Hence prescriptions may be hand written with indelible ink, signed and dated by the prescriber with their address and must always state in the prescriber's own handwriting: name and address of patient; form and strength of preparation (e.g. 20mg capsules); the dose (e.g. 20mg TDS) and total quantity or number of dose units in words **AND** figures (e.g. 420mg = Four Hundred and Twenty milligrams or Twenty One (21) capsules).
Alternatively where computer generated prescriptions for controlled drugs are issued, only the signature has to be in the prescriber's own handwriting. A prescription can be given for a maximum of 30 days.

DOSE AND ADMINSTRATION

Refer to most current BNF and BNF for children www.bnf.org/bnf.
For a full list, see manufacturer's Summary of Product Characteristics (SPC) www.medicines.org.uk.

METHYLPHENIDATE

This guideline follows the recommendations of NICE guidance (TA 98) on the use of methylphenidate, atomoxetine and dexamfetamine for Attention Deficit / Hyperactivity disorder (ADHD) in children and adolescents.

Dose / Licensing (Always refer to the most recent BNF or product SPC)

- Methylphenidate is a CNS stimulant. It is indicated for use as part of a comprehensive treatment programme.
- Methylphenidate is not licensed for children under 6, but may be so used under certain circumstances prescribed by the consultant.
- Methylphenidate is available in immediate-release (IR) tablets (Ritalin, Equasym) that are usually given in two or three daily doses. Methylphenidate is also available in modified-release (XL) formulations that enable once-daily dosing (Matoride XL, Medikinet XL, Concerta XL or Equasym XL)
- IR Methylphenidate dose starts at 5mg once or twice daily and is gradually titrated up to a maximum of 60mg daily in divided doses at intervals of 3-4 hours. The dose should be titrated up by weekly increments of 5-10mg.
- The patient can also be started on the modified release preparation or IR Methylphenidate be changed to XL if appropriate. (See BNF for details)
- If improvement of symptoms is not observed after appropriate dosage adjustment over a one month period the drug should be discontinued by the consultant.

PRODUCT INFORMATION

Product*	Dose	Cost (price not including VAT)
Methylphenidate -Generic	Initially 5mg once or twice daily, increased if necessary at weekly intervals by 5-10mg daily to a maximum of 60mg daily in divided doses.	(Drug Tariff, 2015, p. 159) 5mg pack 30 = £3.03 10mg pack 30 = £5.49 20mg pack 30 = £10.92
Ritalin	Initially 5mg once or twice daily, increased if necessary at weekly intervals by 5-10mg daily to a maximum of 60mg daily in divided doses.	NHS indicative price (BNF, 2015, p. 274)[1] 10mg pack 30 = £6.68
Equasym XL	Initially 10mg once daily in the morning before breakfast, increased gradually if necessary to max. 60mg daily (In case of swallowing difficulties the capsules can be opened and the granules can be administered with semi solid foods/liquids)	(Drug Tariff, 2015, p. 159) 10mg pack 30 = £25.00 20mg pack 30 = £30.00 30mg pack 30 = £35.00
Concerta XL	Initially 18mg once daily (in the morning) increased if necessary in weekly steps of 18mg according to response, to a maximum of 54mg once daily Note: 15mg standard release formulation is considered equivalent to Concerta XL 18mg once daily	(Drug Tariff, 2015, p. 159) 18mg pack 30 = £31.19 27mg pack 30 = £36.81 36mg pack 30 = £42.45
Medikinet XL Matoride XL	Initially 10 mg once daily in the morning before breakfast increased gradually if necessary to max 60 mg daily	(Drug Tariff, 2015, p. 160) NHS indicative price (BNF, 2015, p. 274)[1] Medikinet XL 40mg pack 30 = £57.72 Medikinet XL 5mg pack 30 = £24.04 Medikinet XL 10mg pack 30 = £24.04 Medikinet XL 20mg pack 30 = £28.86 Medikinet XL 30mg pack 30 = £33.66 Matoride XL 54mg pack 30 = £60.48 Matoride XL 18mg pack 30 = £24.95 Matoride XL 36mg pack 30 = £33.96

*All doses for children over 6 yrs; discontinue if no response after one month, and suspend periodically to assess condition

INTERACTIONS

- Methylphenidate may inhibit the metabolism of Coumarin anticoagulants, some anticonvulsants (Phenobarbitons, Phenytoin and Primidone), Phenylbutazone and Tricyclic antidepressants. The dosage of these drugs may have to be reduced
- Use in caution with MAOI
- Alcohol may exacerbate the adverse CNS effect of methylphenidate. Patients should be advised to abstain from alcohol during treatment.

[1] *BNF #70 shows this a DT price for these items but it is not recorded in the latest Nov 2015 Drug Tariff book. For this reason the NHS indicative price has been listed.*

- Pseudoephedrine, Phenylpropanolamine (both found in OTC cough remedies). Patients should be warned when buying cough medicines.
- Methylphenidate can worsen the side effects of Risperidone.

SIDE EFFECTS

Frequency	Side effect
Very Common: >10%	• Nervousness and insomnia at onset of treatment – reduce the dosage and / or omit the afternoon or evening dose. (If severe can be helped by adding clonidine but additional monitoring required with ECGs etc, initiated by consultant only)
Common: >1% to <10%	• Decreased appetite – transient, give bedtime snack which helps sleep as the effect of afternoon dose should be wearing off. • Headache, drowsiness, dizziness and dyskinesia – paracetamol helps • Abdominal pain, nausea and vomiting. Usually occur at beginning of treatment and often eased by taking with food • Dry mouth • Tachycardia, palpitations, arrhythmias, changes in blood pressure (usually upwards) • Rash, pruritis, urticaria, fever, arthralgia and hair loss
Rare: <1%	• Blurred vision and difficulties in visual accommodation • Angina pectoris • Reduced weight gain and slight growth retardation with prolonged use
Very Rare: <0.01%	• Hyperactivity, convulsion, muscle cramps, tics etc see drug SPC • Abnormal liver function ranging from raised transaminase to hepatic coma • Thrombocytopenic purpura, exfoliative dermatitis and erythema multiforme • Leucopenia, thrombocytopenia and anaemia

ATOMOXETINE

This guideline follows the recommendations of NICE guidance (TA 98) on the use of methylphenidate, atomoxetine and dexamfetamine for Attention Deficit / Hyperactivity disorder (ADHD) in children and adolescents.

- Atomoxetine is licensed for the treatment of ADHD in children 6 years and older, under specialist supervision
- It is a selective noradrenaline reuptake inhibitor, although the precise mechanism by which it works on ADHD is unknown.
- For children/adolescents of up to 70kg body weight treatment should be initiated at 500 micrograms per kilogram daily and increased if necessary to a maximum of 1.8 mg/kg daily either in a single dose or divided doses.
- For adolescents of over 70 kg body weight treatment should be initiated at a daily dose of 40 mg and increase according to response to a usual maintenance daily dose of 1.8 mg/kg
- It may take up to twelve weeks for maximum efficacy to be achieved.

PRODUCT INFORMATION

Product	Dose	Cost (prices not including VAT)
Atomoxetine Atomoxetine Liquid	For children/adolescents of up to 70kg body weight treatment should be initiated at 500 micrograms per kilogram daily and increased if necessary to a maximum of 1.8 mg/kg daily either in a single dose or divided doses. For adolescents of over 70 kg body weight treatment should be initiated at a daily dose of 40 mg and increase according to response to a usual maintenance daily dose of 1.8 mg/kg	(Drug Tariff, 2015, p. 120) Capsules 10mg pack 28 = £62.46 18mg pack 28 = £62.46 25mg pack 28 = £62.46 40mg pack 28 = £62.46 60mg pack 28 = £62.46 80mg pack 28 = £83.28 100mg pack 28 = £83.28 NHS indicative price (BNF Online, 2015)[2] Liquid 300ml = £100.00

INTERACTIONS

Coumarin anticoagulants e.g. warfarin ⇒ Increased anticoagulant effects

CYP2D6 inhibitor drugs e.g. Fluoxetine (SSRIs)⇒Increased serum levels and drowsiness

Tricyclic antidepressants ⇒ Increased serum levels and side effects

Beta 2 agonists e.g. high dose salbutamol ⇒ Increased agonist effects

SIDE EFFECTS

	Placebo	Atomoxetine	Methylphenidate immediate release
Insomnia	18%	15%+	36%
Stomach ache	9%	17%	18%
Sleepiness	8%	14%	11%+
Vomiting	5%	12%	4%
Nervousness	7%	16%	20%
Appetite Loss	10%	28%	34%
Headache	15%	18%+	21%
Dizziness	2%	5%	8%
Nausea	6%	9%	9%+

HEPATIC DISORDERS

Following rare reports of hepatic disorders, the CSM has advised that patients and carers should be advised of the risk and be told how to recognise symptoms; prompt medical attention should be sought in case of abdominal pain, unexplained nausea and malaise, darkening of the urine or jaundice

SUICIDAL IDEATION

Following reports of suicidal thoughts and behaviour, the CSM has advised that patients and their carers should be informed about the risk and told to report clinical worsening, suicidal thoughts or behaviour, irritability, agitation, or depression

[2] *Liquid formulation does not appear in the paper version of BNF #70, price obtained from online BNF source*

MONITORING

Height and weight –Although there has been no significant change in growth rates over a 2 year follow up study it is recommended that height and weight should be monitored. Baseline measurements will be obtained by the specialist or GP after liaison with the specialist and monitored at 3 months, 6 months and thereafter at 6 monthly intervals.

Blood pressure –this should be measured at 3 months, 6 months and thereafter at 6 monthly intervals

Lisdexamfetamine

This guidance is based on **"**Attention deficit hyperactivity disorder in children and young people: lisdexamfetamine dimesylate, NICE advice [ESNM19], May 2013.

Lisdexamfetamine dimesylate is a pharmacologically inactive pro-drug that is converted into the central nervous system stimulant, dexamfetamine.

- Lisdexamfetamine is licensed for use as part of a comprehensive treatment programme for attention deficit hyperactivity disorder (ADHD) in children aged 6 years and over when response to previous methylphenidate treatment is considered clinically inadequate.
- The recommended starting dose of lisdexamfetamine dimesylate is 30 mg taken once daily in the morning. The dose may be increased by 20 mg increments, at approximately weekly intervals, but the lowest effective dose should be used. The maximum recommended dose is 70 mg per day.
- Lisdexamfetamine (Elvanse) capsules can be swallowed as whole or the contents can be dissolved in water or juices and taken.
- If improvement of symptoms is not observed after appropriate dosage adjustment over a one month period the drug should be discontinued by the consultant.

PRODUCT INFORMATION

Product	Dose	Cost
Lisdexamfeta-mine dimesylate	The recommended starting dose of lisdexamfetamine is 30 mg taken once daily in the morning. The dose may be increased by 20 mg increments, at approximately weekly intervals, but the lowest effective dose should be used. The maximum recommended dose is 70 mg per day.	(Drug Tariff, 2015, p. 156) 30mg caps pack 28 = £58.24 50mg caps pack 28 = £68.60 70mg caps pack 28 = £83.16

INTERACTIONS

1. Avoid concomitant use of MAOInhibitors. Risk of Hypertensive crisis. Avoid Lisdexamfetamine at least for 2 weeks after stopping MAOI.
2. Antihypertensive: Lisdexamfetamine may reduce the antihypertensive effect of Guanethidine and others.
3. Increased analgesic effects of morphine and other opioids.

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MONITORING

Height and weight – It is recommended that height and weight should be monitored on a growth chart. Baseline measurements will be obtained by the specialist or GP after liaison with the specialist and monitored at 3 months, 6 months and thereafter at 6 monthly intervals.

Blood pressure –this should be measured at 3 months, 6 months and thereafter at 6 monthly intervals

SIDE EFFECTS

Frequency	Side effect
Very Common: >10%	Decreased appetite, insomnia, headache, upper abdominal pain, loss of weight
Common: >1% to <10%	Anorexia, tics, affect lability, psychomotor hyperactivity, aggression, dizziness, somnolence, mydriasis, dry mouth, diarrhoea, nausea, vomiting, rash, irritability, fatigue, pyrexia
Rare: <1%	Hypersensitivity, agitation, anxiety, logorrhoea, depression, dysphoria, dermatillomania, mania, hallucination, restlessness, tremor, vision blurred, tachycardia, palpitation, dyspnoea, hyperhidrosis, urticaria, feeling jittery, blood pressure increased

CONTACT NUMBERS

Ensure contact details including addresses, telephone numbers, fax machine numbers and email addresses are included on documentation or communication between primary and secondary care.

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Appendix 1

Specimen Letter to GP

Patient details

Patient's clinic visit date:

General update about the child/family:

Medication name and current dose:

Side effects**:**

The following physical review has been carried out:

Measurements	Date
Height plus centile	
Weight plus centile	
Blood pressure	
Pulse rate	

Blood pressure and pulse checks need to be carried out three monthly, so we would be grateful if you or your practice nurse could arrange this in the next three months. We have asked the family to contact the surgery to make an appointment for this. Could your practice nurse kindly ensure that the reply slip below is faxed back to us prior to the next clinic appointment (date below)

Without regular review, we are unable to support on-going prescription

Patient's next clinic visit on:

Yours sincerely,

Consultant name

Reply slip

Review at GP practice by

Date:

Measurements	Date
Height plus centile	
Weight plus centile	
Blood pressure	
Pulse rate	