**North of Tyne and Gateshead Area Prescribing Committee (includes North Cumbria)**

Methylphenidate, Dexamfetamine, Lisdexamfetamine and Atomoxetine for treatment of Attention Deficit Hyperactivity Disorder (ADHD) in Adults

**Shared Care Guidance**

| **Introduction** | |
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| **Indication**<br>Treatment of Attention Deficit Hyperactivity Disorder (ADHD) patients aged 18 years and over.<br><br>This shared care guideline is in accordance with NICE clinical guideline NICE Clinical Guideline 87 and NICE Quality Standard 39<br><br>**This shared care guideline excludes:**<br>• Treatment of patients aged 6 to 17 years (see separate guideline)<br>• Treatment of patients aged 5 years and under<br>It is expected that excluded patients will be retained within specialist services unless otherwise specified<br><br>**Background**<br>• ADHD is a heterogeneous behavioural syndrome characterised by the core symptoms of hyperactivity, impulsivity and inattention. While these symptoms tend to cluster together, some people are predominantly hyperactive and impulsive, while others are principally inattentive<br>• Symptoms of ADHD are distributed throughout the population and vary in severity; only those with significant impairment meet criteria for a diagnosis of ADHD. Symptoms of ADHD can overlap with symptoms of other related disorders therefore care in differential diagnosis is needed<br>• Diagnosis and initiation of treatment must be made by a specialist in the treatment of ADHD<br>• Stimulants used to treat ADHD work by increasing dopamine levels in the brain to improve focus and functioning | |
| **Medication**<br>**For full details see NICE CG 87, individual SPCs and BNF** | |
| **Stimulants**<br>*Methylphenidate, dexamfetamine + lisdexamfetamine - Schedule 2 Controlled Drugs - Controlled drug prescription requirements should be followed*<br>*Formulary status – Amber*<br>*Lisdexamfetamine - Licensed for ADHD in adults that pre-existed in childhood*<br>*Not all methylphenidate preparations licensed for use in adults*<br>*Dexamfetamine – not licensed for use in adults* | |
| **Methylphenidate** | **Tablets**<br>5mg, 10mg, 20mg<br>**Tablets M/R** – 18mg, 27mg, 36mg + 54mg<br>(Concerta XL®, Xaggitin XL®) For new patients prescribe Xaggitin XL. Concerta XL may be continued for existing patients but consider switching at next review appointment.<br>**Capsules M/R** 10mg, 20mg, 30mg (Equasym XL®)<br>**Capsules M/R** 5mg, 10mg, 20mg, 30mg, 40mg (Medikinet XL®)<br>**Ratio of immediate: extended release methylphenidate varies between products affecting bioavailability - prescribe by brand name –see individual SPC** |
| **Dose and administration (for** | **Adults**<br>Standard release formulation: Initially 5 mg 2-3 times daily, increased if |

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| **full details see NICE CG 87, individual SPCs and BNF)** | necessary at weekly intervals according to response up to maximum 100mg daily in divided doses.<br>Discontinue if no response after 1 month<br>Evening dose: If effect wears off in evening (with rebound hyperactivity) a dose at bedtime may be appropriate (establish need with trial bedtime dose)<br>Note - Treatment may be started using a modified-release preparation. **Dosing schedules for the individual preparations should be consulted.**<br>**Refer to SPCs or BNF for dosing schedules.**<br>Administration<br>**Contents of Equasym XL® capsules,** and **Medikinet XL®** capsules, can be sprinkled on a tablespoon of apple sauce, and then swallowed immediately without chewing. Then patients should take a drink.<br>**Concerta XL® -** tablet membrane can pass through GI tract unchanged. Dose form not appropriate for dysphagia or if GI lumen is restricted.<br>**Concerta XL and Xaggitin XL** must be swallowed whole with the aid of liquids, and must not be chewed, divided, or crushed. |
| **Dexamfetamine** | **Tablets -** 5mg (generic manufacturers), 5mg, 10mg and 20mg Tablets. Tablets may be halved<br>**Liquid -** Dexamfetamine Sulfate 5mg/5ml Oral Solution S/F is available from Martindale **(unlicensed for treatment of ADHD)** |
| **Dose and administration (for full details see NICE CG 87, individual SPCs and BNF)** | Adult – Initially 5mg twice daily, increasing if necessary by weekly increments according to response, maximum 60mg/day<br>Maintenance dose given in 2–4 divided doses |
| **Lisdexamfetamine** | **Capsules (hard)** 30mg, 50mg and 70mg (Adult) |
| **Dose and administration (for full details see NICE CG 87, individual SPCs and BNF)** | All ages<br>30mg taken once daily in the morning.<br>The dose may be increased by 20 mg increments, at approximately weekly intervals. Administered at the lowest effective dosage.<br>Discontinue if response insufficient after 1 month; maximum 70 mg per day (50mg/day in renal impairment).<br>Lisdexamfetamine may be taken with or without food. It may be swallowed whole, or the capsule opened and the entire contents emptied and mixed with a soft food such as yogurt or in a glass of water or orange juice. If the contents include any compacted powder, a spoon may be used to break apart the powder in the soft food or liquid. The contents should be stirred until completely dispersed. The patient should consume the entire mixture of soft food or liquid immediately; it should not be stored. The active ingredient dissolves completely once dispersed; however, a film containing the inactive ingredients may remain in the glass or container once the mixture is consumed.<br>Afternoon doses should be avoided because of the potential for insomnia however if effect wears off in evening (with rebound hyperactivity) a dose of dexamfetamine at bedtime may be appropriate (establish need with trial bedtime dose) |
| **Non-stimulant**<br>*Formulary status – Amber*<br>*Licensed Indication when ADHD pre-existed in childhood, dose of 120mg daily not licensed* | |
| **Atomoxetine** | **Capsules** 10mg, 18mg, 25mg, 40mg, 60mg, 80mg, 100mg<br>**Liquid 4mg/ml**<br>Nb. Liquid approved for patients with more complex needs e.g. younger patients and those with swallowing difficulties |
| **Dose and administration (for full details see NICE** | Adult body-weight up to 70 kg: Initially 500 micrograms/kg daily for 7 days, increased according to response. Usual maintenance 1.2 mg/kg daily but may be increased to 1.8 mg/kg daily (max. 120 mg daily) under the direction of a |

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| **CG 87, individual SPCs and BNF)** | specialist<br>Adult body-weight over 70 kg: Initially 40 mg daily for 7 days, increased according to response<br>Usual maintenance 80 mg – 100mg daily but may be increased to a maximum recommended total daily dose 120mg under the direction of a specialist<br>**Doses above 100mg daily are not licensed but are stated in the BNF**<br>Total daily dose may be given either as a single dose in the morning or in 2 divided doses with last dose no later than early evening<br>Halve dose in moderate hepatic impairment, quarter dose in severe hepatic impairment<br>**Atomoxetine oral solution should only be prescribed when patients are unable to take tablets** |
| **Common adverse effects - See SPC and BNFC for full details** | |
| **Methylphenidate**<br>**Dexamfetamine**<br>**Lisdexamfetamine** | Decreased appetite, weight loss, growth retardation, insomnia, mood changes, headache, dizziness, drowsiness, tachycardia, increased blood pressure, cough, gastrointestinal side effects, rashes, delusions, hallucinations, anxiety, panic, stimulant related tics, sexual dysfunction. |
| **Atomoxetine** | Emergence of suicidal behaviour, self-harm or hostility; serious liver damage;, weight loss, drowsiness, increased heart rate and blood pressure, dysmenorrhoea, sexual dysfunction |
| **Potentially Serious drug interactions** | |
| **Stimulants** | ▪ Enhance anticoagulant effect of warfarin<br>▪ Can increase the plasma levels of some anticonvulsants (phenytoin, primidone, phenobarbitone) and tricyclic antidepressants<br>▪ Can exacerbate CNS adverse effects of alcohol (abstention advised)<br>▪ Concurrent use of methylphenidate and atomoxetine does not cause increased side effects of either drug.<br>▪ Use of Clonidine may result in an increased duration of action of Dexamfetamine<br>▪ Monoamine oxidase inhibitors (MAOIs) - amfetamines should not be administered during or within 14 days following the administration of MAOIs as they may precipitate hypertensive crisis<br>▪ Antihypertensives – stimulants may reduce effectiveness<br>▪ Amfetamines potentiate the analgesic effect of narcotic analgesics.<br>▪ Effect of stimulants can be decreased by: beta-blockers (e.g. propranolol), lithium and phenothiazines<br>▪ Concurrent use of beta-blockers may result in severe hypertension<br>▪ Concurrent use of tricyclic antidepressants may increase risk of cardiovascular side effects |

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| **Atomoxetine** | ▪ Atomoxetine should not be used with MAOIs<br>▪ *SSRIs (e.g., fluoxetine, paroxetine) can increase atomoxetine levels*<br>▪ High dose nebulised or systemically administered salbutamol (or other beta$_2$ agonists) may potentiate cardiovascular effects<br>▪ Potential increased risk of QT interval prolongation when atomoxetine is administered with other QT prolonging drugs (e.g. neuroleptics, class IA and III anti-arrhythmics, moxifloxacin, erythromycin, methadone, mefloquine, tricyclic antidepressants, lithium)<br>▪ Increased risk of seizures with drugs known to lower the seizure threshold (e.g. tricyclic antidepressants or SSRIs, neuroleptics, phenothiazines or butyrophenone, mefloquine, chloroquine, bupropion or tramadol) or when stopping concomitant treatment with benzodiazepines<br>▪ atomoxetine may decrease the effectiveness of anti-hypertensive drugs<br>▪ Possible additive effects when used with drugs that affect noradrenaline E.g. antidepressants (imipramine, venlafaxine, and mirtazapine) or decongestants (pseudoephedrine or phenylephrine) |
| **Contraindications/Cautions** | |
| **Stimulants** | • Known intolerance of sympathomimetic amines<br>• Marked anxiety, agitation, tension or psychosis, poorly controlled Bipolar Affective Disorder or psychopathic/borderline personality disorder<br>• Severe depression, anorexia/anorexic disorders,<br>• Suicidal ideation,<br>• History of drug or alcohol abuse<br>• Glaucoma<br>• Hyperthyroidism or thyrotoxicosis<br>• Structural cardiac abnormalities<br>• Current or recent (within 14 days) treatment with MAOI's<br>• *Some cardiovascular disease – including hypertension<br>• Motor tics, or family history of Tourette's syndrome<br>• Phaeocromocytoma<br>• *Although listed as contraindications, in some circumstances, methylphenidate can be used with caution and careful monitoring by the specialist<br>• Use with caution in:-<br>  • Epilepsy, stimulants may lower the seizure threshold in patients with a prior history of seizures. If seizure frequency increases, the specialist should discontinue methylphenidate<br>  • Or where there is a diagnosis or history of severe and episodic Bipolar (Affective) disorder that is not well controlled<br>  • Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine |
| **Atomoxetine** | • Patients on MAOIs (or within 2 weeks after discontinuing therapy with a MAOI)<br>• Severe cardiovascular disease, severe cerebrovascular disease<br>• QT-interval prolongation, aggressive behaviour, cardiovascular disease, cerebrovascular disease, emotional lability, history of seizures, hostility, hypertension, mania, psychosis, structural cardiac abnormalities, susceptibility to angle-closure glaucoma, tachycardia. |

**Medication choice – Adults**

- Offer lisdexamfetamine or methylphenidate as first-line treatment for adults with ADHD
- Consider switching to lisdexamfetamine after a 6-week trial of methylphenidate at an adequate dose with insufficient benefit in terms of reduced ADHD symptoms
- Consider switching to methylphenidate after a 6-week trial of lisdexamfetamine at an adequate dose with insufficient benefit in terms of reduced ADHD symptoms
- Consider dexamfetamine for adults whose ADHD symptoms are responding to lisdexamfetamine but who cannot tolerate the longer effect profile
- 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.

**Considerations when prescribing ADHD medication**

**Medication choice – people with coexisting conditions**

- Offer the same medication choices to people with ADHD and anxiety disorder, tic disorder or autism spectrum disorder as other people with ADHD
- 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
    - 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.
- When prescribing medication for ADHD, think about modified-release once-daily preparations for 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, and the risk of stimulant misuse and diversion with immediate-release preparations
- Consider pharmacokinetic profiles especially long acting methylphenidate preparations
- Immediate-release preparations may be suitable if more flexible dosing regimens are needed, or during initial titration to determine correct dosing levels
- Not all preparations of methylphenidate have a UK marketing authorisation for treating symptoms of ADHD in adults
- Dexamfetamine does not have a UK marketing authorisation for this indication in adults
- Atomoxetine was licensed for use in adults with symptoms of ADHD that pre-existed in childhood. The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's Prescribing guidance: prescribing unlicensed medicines for further information.

**Shared care for medication**

After titration and dose stabilisation, prescribing and monitoring of ADHD medication may be carried out under Shared Care Protocol arrangements with primary care (NICE 2018)

**Specialist responsibilities**

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| **Baseline assessment** | Before initiating patients on medication for ADHD, the specialist should undertake a full assessment in line with NICE guidance. |
| **Prescribing** | • Initiation, titration and dose stabilisation of ADHD medication |
| **Maintenance and monitoring** | **1.8 Maintenance and monitoring**<br>• Monitor effectiveness of medication for ADHD and adverse effects, and document in the person's notes<br>• Encourage people taking medication for ADHD to monitor and record any adverse effects<br>• Consider using standard symptom and adverse effect rating scales for clinical assessment and throughout the course of treatment<br>• Ensure that patients receiving treatment for ADHD have review and follow-up according to the severity of their condition, regardless of |

<table>
<tr><td></td><td>whether or not they are taking medication</td></tr>
<tr><td>Physical health monitoring – stimulants + atomoxetine</td><td>
<table>
<tr><th></th><th>Weight</th><th>Heart rate</th><th>Blood pressure</th></tr>
<tr><td>Adults</td><td>Every 6 months</td><td colspan="2">Compare with the normal range for age before and after each dose change and every 6 months.</td></tr>
<tr><td colspan="4">Nb specialist will undertake physical health monitoring before and after dose changes and annually, primary care will be asked to monitor physical health as described annually. This ensures monitoring is undertaken 6 monthly and is shared between specialist and primary care</td></tr>
</table>
<ul>
<li>Monitor physical health as described above annually</li>
<li>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</li>
<li>Do not offer routine blood tests (including liver function tests) or ECGs to people taking medication for ADHD unless there is a clinical indication.</li>
<li>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 the dose and refer to an adult physician.</li>
<li>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</li>
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</td></tr>
<tr><td>Review of medication and discontinuation</td><td>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.</td></tr>
<tr><td colspan="2">Primary Care Responsibilities</td></tr>
<tr><td colspan="2">
<ul>
<li>Prescribe medication following recommendations of the specialist</li>
<li>Provide the specialist with relevant medical history and background information</li>
<li>To contact the specialist if concerned about any aspects of the patient’s treatment</li>
<li>Report significant deviations from the prescribing pattern to the specialist</li>
<li>Monitor and record the therapy in accordance with written directions of specialist</li>
<li>Monitor physical health as described above annually</li>
<li>Report any adverse events to the specialist, and the usual bodies. (E.g. MHRA)</li>
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</td></tr>
<tr><td colspan="2">Contact Details</td></tr>
<tr><td colspan="2">Adult ADHD Specialists. Mon – Fri 09:00 – 17:00<br><br>▪ Psychiatry-UK LLP 0330 124 1984</td></tr>
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**Private and Confidential**

**ADHD for Adults - Shared Care Request/Confirmation**

- Specialist Prescriber to complete first section of form and send to patient's GP.
- GP to complete second section of form and return to specialist prescriber within 28 days
- A copy of the full shared care guideline can be viewed at www.northoftyneapc.nhs.uk

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| **Specialist Prescriber** | | | | |
| **Department** | | | | |
| **Hospital** | | | | |
| **Telephone** | | | | |
| **Patient details (use hospital label if preferred)** | | | | |
| **Name** | | | | |
| **Address** | | | | |
| **Postcode** | | | | |
| **NHS or Hosp reg no** | | **Male / Female** | **DoB** | |

| **Treatment Requested for Prescribing in Accordance with an Approved Shared Care Arrangement** | | | | | |
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| **Drug Information** | | | | | |
| **Name/Formulation** | | **Dose** | | **Frequency** | |
| **Name/Formulation** | | **Dose** | | **Frequency** | |
| **Name/Formulation** | | **Dose** | | **Frequency** | |
| **Indication –Adult ADHD** | | | | | |
| **Other information (if appropriate)** | | | | | |
| **Signed (Specialist Prescriber)** | | **Name (Print)** | | **Date** | |

| **To be completed by GP** | **Please tick one box** |
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| **I ACCEPT the proposed shared care arrangement for this patient** | ❑ |
| **I ACCEPT the proposed shared care arrangement with the caveats below** | ❑ |
| **I DO NOT ACCEPT the proposed shared care arrangement for this patient** | ❑ |
| **My caveats/reason(s) for not accepting include:** | |
| | |

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|---|---|---|---|---|---|
| **Signed** | | **Name (print)** | | **Date** | |