SHARED CARE GUIDELINE

DRUGS FOR THE TREATMENT OF ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) IN CHILDREN, ADOLESCENTS & ADULTS

NHS North Lancashire

NHS Cumbria

North Cumbria University Hospitals NHS Trust

Cumbria Partnership NHS Foundation Trust

University Hospitals of Morecambe Bay NHS Trust

Contact Details	Patient ID Label:
Name: _____	**Surname:** _____
Location: _____	**Forenames:** _____
Date: _____	**NHS Number:** _____
Phone No. _____	**Date of Birth:** _____

	Methylphenidate	Atomoxetine▼	Dexamfetamine
Indicate drug prescribed (tick and sign)			
Formulations	Tablets, 5, 10, 20mg. Modified-release tablets, Concerta XL® 18, 36mg, Equasym XL® 10, 20mg, Medikinet XL® 10, 20, 30, 40mg.	Capsules, 10, 18, 25, 40, 60, 80mg.	Tablets, 5mg.
Indication	For school-age children and adolescents and adults with moderate ADHD and moderate impairment, behavioural training should be considered before drug treatment. Drug treatment should be reserved for use where: - Moderate impairment where non-drug interventions have been refused - Persisting significant impairment following a parent-training/education programme or group psychological treatment For individuals with severe ADHD (hyperkinetic disorder) and severe impairment, drug treatment should be offered as first-line treatment, as well as group-based parent-training/education programme In adults, drug treatment may be considered as first-line treatment. **Note: Methylphenidate, atomoxetine and dexamfetamine are not licensed for use in adults, but NICE CG72 recommends their use where indicated.**		
Dose & Administration	Initially 5mg once or twice a day, increased if necessary at weekly intervals by 5 to 10mg daily; usual maximum, 60mg daily in 2 or 3 divided doses, but may be increased to 2.1mg/kg daily in 2 or 3 divided doses (maximum 90mg daily) under the direction of a specialist.	**Bodyweight under 70kg:** initially 500 micrograms/kg daily for 7 days, increased according to response; usual maintenance dose 1.2mg/kg daily, but may be increased to 1.8mg/kg daily (max. 120mg daily) under the direction of a specialist.	Initially 2.5mg 2–3 times daily, increased if necessary at weekly intervals by 5mg; usual max. 1mg/kg daily, up to 20mg (40mg daily has been required in some children); maintenance dose given in 2 to 4

<table>
<tr><th></th><th>Methylphenidate</th><th>Atomoxetine▼</th><th>Dexamfetamine</th></tr>
<tr><td></td><td>Concerta®: initially 18mg once daily (in the morning), increased if necessary at weekly intervals by 18mg according to response; licensed max. 54mg once daily, but may be increased to 2.1mg/kg daily (max. 108mg daily) under the direction of a specialist; discontinue if no response after 1 month.

Equasym® and Medikinet®: initially 10mg once daily (in the morning before breakfast), increased gradually at weekly intervals if necessary; licensed max. 60mg daily, but may be increased to 2.1mg/kg daily (max. 90mg daily) under the direction of a specialist; discontinue if no response after 1 month.</td><td>Bodyweight over 70kg: initially 40mg daily for 7 days, increased according to response; usual maintenance dose 80mg daily, but may be increased to max. 120mg daily under the direction of a specialist.</td><td>divided doses.</td></tr>
<tr><td>Secondary Care Responsibilities</td><td colspan="3">1. Diagnose the condition and assess the suitability of the patient for treatment.
2. Inform patient of side effects. Leaflet on http://www.choiceandmedication.org/cumbria (QuILLs are available – short pictoral versions designed for young people)
3. Perform following monitoring before initiating treatment:
• Carry out a pre-drug assessment
• A full mental health and social assessment
• A full history and physical examination, including:
- Assessment of history of exercise syncope, undue breathlessness and other cardiovascular symptoms
- Heart rate and blood pressure (plot on a centile chart)
- Height and weight (plot on a growth chart)
- Family history of cardiac disease and examination of the cardiovascular system
- An ECG if there is a past medical or family history of serious cardiac disease, a history of sudden death in young family members or abnormal findings on cardiac examination
• Risk assessment for substance misuse and drug diversion.
4. Initiate treatment and adjust according to patient response.
5. Request appropriate information from GP if facilities for full physical examination are not available in Mental Health Services.
6. Request GP to prescribe when dose stable, allowing at least 4 weeks for primary care prescription to be started.
7. Continue monitoring of height, weight, heart rate and BP; agree intervals with GP, e.g., height every 6 months by secondary care, and alternate 6 monthly measurements by GP. Weight 3 months after starting treatment, then every 6 months, alternating with GP. Plot all results on growth/centile charts. Heart rate and BP – agree with GP where monitoring will take place and frequency (3 monthly recommended)
8. Assess response to treatment and the need to continue therapy by reviewing the patients at regular intervals.
For atomoxetine, the patient or carer should be informed about the risk of hepatic disorders and suicidal ideation. Symptoms of hepatic disorder (abdominal pain, unexplained malaise, darkening of the urine or jaundice) or suicidal ideation (clinical worsening, suicidal thoughts or behaviour, irritability, agitation or depression) should be reported as a matter of urgency. These may be more likely in initial months of treatment or after a dose change.
Transition to adult services Assess for need to continue treatment, at least 6 months before 18th birthday. If necessary to continue treatment, follow guidance in Trust “Protocol for Transition of young people from CAMHS to adult services” CL/POL/001/011. If no service available in adult services, inform GP, young person and carer/family, and discharge patient from CAMHS</td></tr>
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<tr><td>Primary Care Responsibilities</td><td colspan="3">The following monitoring should be carried out by the GP for all agents, at intervals agreed with secondary care (see secondary care (7)): Copy results to secondary care for plotting on charts
1. Height (for children and adolescents only).
2. Weight.
3. Heart rate and blood pressure after each dose change-if equipment available, inform secondary care if not available.
4. Monitor for any exacerbation of seizures, stopping treatment immediately if required.</td></tr>
<tr><td></td><td>And in addition, for patients on methylphenidate:
1. Monitor for tics, refer to specialist if present.
2. Psychotic symptoms (delusions and hallucinations).
3. Anxiety symptoms, including panic.
4. Seizures (methylphenidate only).
5. Drug misuse, monitor changes in potential for misuse and diversion.</td><td>And in addition, for patients on atomoxetine:
1. Reproductive system and sexual function monitor for dysmenorrhoea, erectile dysfunction and ejaculatory function.
2. Seizures.
3. Agitation, irritability, suicidal thinking and self-harm.
4. Patients with risk factors for cerebrovascular conditions (e.g., history of certain cardiovascular diseases or concomitant use of medicines that elevate blood pressure) should be assessed at every visit for neurological signs and symptoms. A physician's guide for assessing and monitoring cardiovascular risk is available.
5. Patients should have their continued need for treatment assessed at least every year.</td><td>And in addition, for patients on dexamfetamine
1. Monitor for tics, refer to specialist if present.
2. Psychotic symptoms (delusions and hallucinations).
3. Anxiety symptoms, including panic.
4. Seizures (methylphenidate only).
5. Drug misuse, monitor changes in potential for misuse and diversion.</td></tr>
<tr><td>Adverse Effects</td><td>Refer SPC or BNF
<table><tr><th></th><th>SPC</th><th>BNF</th></tr><tr><td>Ritalin®</td><td>SPC</td><td rowspan="4">BNF (via NHSnet)</td></tr><tr><td>Concerta XL®</td><td>18, 36mg SPC
27mg SPC</td></tr><tr><td>Equasym XL®</td><td>SPC</td></tr><tr><td>Medikinet XL®</td><td>5mg SPC
10, 20, 30, 40mg SPC</td></tr></table></td><td>Refer to SPC or BNF (via NHSnet)</td><td>Refer BNF</td></tr>
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Date Prepared: September 2012
Date of Review: August 2013

	Methylphenidate	Atomoxetine▼	Dexamfetamine
Common Drug Interactions	**Alcohol** - effects of methylphenidate possibly enhanced by alcohol **Antidepressants** - methylphenidate possibly inhibits metabolism of SSRIs and tricyclic antidepressants **Clonidine** - serious adverse events reported with concomitant use of methylphenidate and clonidine (causality not established) (however Clonidine may be used third line for ADHD, unlicensed use – ref Maudsley guidelines) **Coumarin anticoagulants** - methylphenidate possibly enhances anticoagulant effect of coumarins **MAOIs** - risk of hypertensive crisis when methylphenidate given with MAOIs , some manufacturers advise avoid methylphenidate for at least 2 weeks after stopping MAOIs **Phenobarbital** - methylphenidate possibly increases plasma concentration of phenobarbital **Phenytoin** - methylphenidate increases plasma concentration of phenytoin **Risperidone** - methylphenidate possibly increases side-effects of risperidone	**Fluoxetine** - metabolism of atomoxetine possibly inhibited by fluoxetine **MAOIs** - atomoxetine should not be started until 2 weeks after stopping MAOIs , also MAOIs should not be started until at least 2 weeks after stopping atomoxetine **Paroxetine** - metabolism of atomoxetine possibly inhibited by paroxetine There is an increased risk of ventricular arrhythmias when atomoxetine is used with the following drugs: • Amiodarone • Antidepressants, Tricyclic • Antipsychotics • Disopyramide • Diuretics • Mefloquine • Methadone • Moxifloxacin • Sotalol There is an increased risk of convulsions when atomoxetine is used with the following drugs: • Antidepressants • Bupropion • Tramadol	**Chlorpromazine** - dexamfetamine possibly antagonises antipsychotic effects of chlorpromazine **Antipsychotics** - hypertensive effect of sympathomimetics antagonised by antipsychotics **Ergotamine and Methysergide** - increased risk of ergotism when sympathomimetics given with ergotamine and methysergide **MAOIs** - risk of hypertensive crisis when sympathomimetics given with MAOIs **Moclobemide** - risk of hypertensive crisis when sympathomimetics given with moclobemide **Rasagiline** - avoid concomitant use of sympathomimetics with rasagiline **Ritonavir** - plasma concentration of dexamfetamine possibly increased by ritonavir

Administration to children with swallowing difficulties: (crushing of tablets and opening capsules is unlicensed use of the medication)
Methylphenidate Use the standard tablets. Crush and mix with water for administration. Do not crush the modified-release tablets

Atomoxetine capsules The capsules are not intended to be opened. Atomoxetine is an ocular irritant. In the event of capsules content coming in contact with the eye, the affected eye should be flushed immediately with water, and medical advice obtained. Hands and any potentially contaminated surfaces should be washed as soon as possible.

This guidance does not replace the SPC's, which should be read in conjunction with this guidance.