Specialised Medicines Service (SMS) Guideline ~
Methylphenidate for attention deficit hyperactivity disorder (ADHD) in children and young people aged 6 years and above

This guideline has been reviewed by relevant stakeholders across Devon and is intended for use in accordance with locally commissioned services.

Specialist: Please complete 'Specialist Request to GP Letter' and send together with a copy of this shared care guideline to the GP.

GP: GPs are invited to participate. Please indicate whether you wish to share patient's care by completing the appropriate 'GP Acceptance/Refusal Letter' and return to specialist.

Responsibilities remain with the specialist service until formally accepted by the GP. If a GP is not confident to undertake these roles, then they are under no obligation to do so. In such an event, the total clinical responsibility for the patient for the diagnosed condition remains with the specialist. Training and education may be available from the specialist team to support GPs where required.

If the GP agrees to share the care of the patient, the patient should not be discharged from the care of their specialist, but rather the care of the patient is shared between the patient, GP and specialist in accordance with the responsibilities outlined in this guideline.

The prescriber has the clinical and legal responsibility for the drug and the consequences of its use. Responsibility for drug monitoring and acting on results remains with the prescriber.

Introduction and aims of treatment

This Devon wide Specialised Medicines Service (SMS) guideline covers the use of methylphenidate for the treatment of attention deficit hyperactivity disorder (ADHD) in children and young people aged 6 years and above under the care of paediatric and Child and Adolescent Mental Health Service (CAMHS) providers. It details the responsibilities for the ongoing prescribing and monitoring required to enable a shared care agreement to be arranged between the primary and secondary care interface. Refer to the online BNF for children and individual summaries of product characteristics (SPCs) for full list of data.

Methylphenidate is a schedule 2 controlled drug, a central nervous stimulant available in the UK in various immediate, and modified-release, oral, solid dosage forms.

Methylphenidate is not licensed for use in children under 6 years of age with ADHD – management of this patient group falls outside the scope of this guideline.

Methylphenidate is sometimes used off-label for disorders of excessive somnolence e.g. narcolepsy and idiopathic hypersomnia however these indications fall outside the scope of this guideline.

The Devon wide SMS guideline for methylphenidate for ADHD in patients under the care of adult specialist services can be accessed here.

Service transition for young people with existing ADHD diagnosis

Young people transferring from child/adolescent services to adult services should be offered a transition appointment ideally jointly with the child/adolescent and adult specialist providers (contact details are provided later in the guideline). During the appointment drug treatment should be discussed with consideration of whether continuation into adulthood will continue to provide therapeutic benefit, or in some circumstances whether a change of ADHD medication is required. A treatment plan should be formulated collaboratively with the young person. Precise timing of transition arrangements may vary according to the needs and preferences of the individual patient but should usually be completed by the time the young person is 18 years old.

During the service transition process there may be circumstances where paediatric or CAMHS providers continue to provide care for an individual beyond the age of 18 years, or where adult services provide care for

an individual below the age of 18 years. In these situations the specialist should provide the GP with age specific prescribing guidance (including dose) and monitoring requirements.

Where patient care is transferred from one specialist service to another, and/or the patient is initiated on a different ADHD treatment (excluding brand / formulation / dose changes) with associated SMS guidelines, a new shared care agreement must be completed between the specialist, the GP and the patient.

Specialist responsibilities

Methylphenidate should only be initiated by a healthcare professional with training and expertise in diagnosing and managing ADHD. Treatment should be tailored effectively to the individual needs of the child or young person. Specialists may decide to delegate some of these tasks to members of their team, however the responsibility for ensuring the following are undertaken remains with the named specialist overseeing the care of the individual patient:

- Assess the patient, establish diagnosis of ADHD, agree a management plan and the need for treatment with methylphenidate. Ensure the patient and/ or the patient's parent/guardian/carer is involved in making an informed choice about their treatment.
- Update records with list of existing drugs from available resources, and ensure there are no drug interactions of clinical significance with current medication, recreational drugs, or over the counter (OTC) drugs (e.g. cough or cold remedies). Recommend the patient and/ or the patient's parent/guardian/carer consults a pharmacist before using OTC treatments.
- Provide the patient and/ or the patient's parent/guardian/carer with suitable written and verbal information about the medication prior to starting treatment, including benefits, side effects, cautions, frequency of dosing, monitoring requirements and treatment reviews (timing and by whom).
- Consider and discuss contraception and/ or, where appropriate, the risks of pregnancy (including risk to the foetus and risks associated with stopping or changing medication) in women and girls of child-bearing potential.
- Ensure the patient and/or the patient's parent/guardian/carer understands that treatment may be stopped if they do not attend for monitoring & treatment review.
- Inform the patient and/or the patient's parent/guardian/carer if the use of methylphenidate is unlicensed (see supporting information below). Outline any associated risks and benefits with treatment; document patient consent in the patient's medical records.
- Confirm patient and/or the patient's parent/guardian/carer understands the treatment and record acceptance of associated patient responsibilities in the patient's medical records.
- Undertake pre-treatment screening and required baseline monitoring (see monitoring requirements below) and initiate methylphenidate for the management of ADHD.
- **Prescribe methylphenidate and continue to monitor the patient for the first 3 months of treatment or until the patient's condition/dose is stabilised, whichever is longer, before sharing care with GP.**
- Ask the GP in writing whether they are willing to participate in shared care for a particular patient. Include all relevant test results (GPs may not have access to these results in primary care).
- Prescribing and monitoring will remain in secondary care until the patient is stable and GP agrees to share care.
- Following the request to the patient's GP to participate in a shared care agreement, the specialist must ensure that the patient has an adequate supply of medication (usually 28 days) until shared care arrangements are in place. Further prescriptions will be issued by the specialist if, for unforeseen reasons, arrangements for shared care are not in place at the end of 28 days.
- **NICE Guideline NG87 recommends that ADHD medication should be reviewed at least once a year. The specialist will advise frequency of reviews on an individual patient basis.** During the review consider and discuss clinical effectiveness and adverse effects with the patient with ADHD and/ or the patient's parent/guardian/carer and liaise with school as required. Evaluate the long-term benefit and continuation of treatment; discuss trial periods off medication where indicated.
- Ensure prompt written summary is sent to the GP whenever the patient is reviewed including any changes in treatment or monitoring requirements, results of monitoring undertaken, assessment of adverse events, or guidance on when to stop treatment if indicated.
- Urgent changes to treatment should be communicated electronically and directly to the GP surgery (followed up by telephone as required) to ensure prompt and immediate update.

- Provide the GP with relevant contact information and clear arrangements for back-up advice and support.
- Where patient care is transferred from one specialist service to another, and/or the patient is initiated on a different ADHD treatment (excluding brand / formulation / dose changes) with associated SMS guidelines, a new shared care agreement must be completed between the specialist, the GP and the patient.
- Ensure that the GP is informed in writing of any changes to the patient's specialist or their contact details.
- Ensure formal communication is sent to the child/ young person's school regarding the use of methylphenidate where indicated.
- Respond promptly to the GP and advise on action required when abnormal monitoring results are identified or adverse effects signs or symptoms are detected.
- Report suspected side effects to the MHRA via yellow card scheme when appropriate.

General practitioner responsibilities

GPs may decide to delegate some of these tasks to members of their team; however, the responsibility for ensuring the following are undertaken remains with the GP overseeing the care of the individual patient:

- Ensure a timely reply is sent to specialist in response to request for shared care agreement.

If GP has agreed to share care:

- Continue to prescribe and monitor methylphenidate in accordance with these guidelines. **Prescribe by brand.**
- If home monitoring is considered appropriate on an individual patient basis the requirements and expectations should be discussed and responsibilities agreed with the patient and / or patient's parent/guardian/carer. Advise the patient on suitable equipment to facilitate home monitoring.
- Review monitoring results including those reported by the patient and take any necessary action (see monitoring requirements below).
- A copy of measurements recorded by the GP since the previous review should be provided whenever the patient is seen by the specialist; this will enable a continuous assessment of developing height and weight.
- Be alert to the possibility of interactions when initiating new medicines or recommending over the counter (OTC) treatments, or interactions with recreational drugs.
- Be alert to the possibility of adverse effects at every contact. Ensure prompt action in the case of a severe adverse effect or signs or symptoms (see monitoring requirements below).
- Ensure advice sought promptly from the specialist if there is a change in the patient's physical or mental health status which is of concern to the GP and may affect treatment, including pregnancy.
- Respond promptly to advice from specialist regarding any changes in treatment or monitoring requirements.
- Ensure that the specialist is informed in writing of any changes to the patient's GP or their contact details.
- Where patient care is transferred from one GP practice to another a new shared care agreement must be completed.
- Report suspected side effects to specialist and the MHRA via yellow card scheme when appropriate.

Patient and/ or patient's parent/guardian/carer responsibilities

- Understand the importance of monitoring treatment and attend specialist appointments and GP appointments to ensure timely monitoring can be completed in accordance with the prescribing guideline.
- If home monitoring has been agreed, ensure recommended equipment is used. Report results to the GP in a timely manner.
- Understand that treatment will be stopped if they do not attend for monitoring and treatment review.
- Read the methylphenidate patient information leaflet. Request information in different format(s) if required to aid understanding. Understand treatment, expected benefits and potential side effects.
- Take (or support administration of) medication as directed by the prescriber.
- Consult a pharmacist before using over the counter (OTC) treatments.
- Seek guidance from a pharmacist, GP or specialist on medication safety and potential interaction with methylphenidate if engaging in recreational drug use.
- Report any adverse effects or newly presenting signs or symptoms to the GP or specialist.

- Women and girls of child-bearing potential should take a pregnancy test if they think there is a possibility they could be pregnant, and inform the GP or specialist immediately if they become pregnant or wish to become pregnant.
- Store medicines safely and securely and dispose of any unused medication appropriately.
- Tell DVLA if ADHD or ADHD medication affects their ability to drive safely.
- Report suspected side effects to the GP or specialist and the MHRA via yellow card scheme when appropriate.

Monitoring requirements

Baseline assessment to be completed by the specialist before initiating treatment in children and young people:

Full history and physical examination to include:

- Medical history and current medication
- Social circumstances including a risk assessment for substance misuse and drug diversion
- Pulse and blood pressure measured with an appropriately sized cuff and compare with the normal range for age.
    - If blood pressure is consistently above the 95th centile for age and height, refer patient to an appropriate specialist for further evaluation according to local guidelines. Ambulatory monitoring may be helpful. Possible treatment for hypertension may be required before ADHD medication can be initiated. Specialist to arrange follow-up.
- Height and weight measured and recorded against the normal range for age, height and sex.
    - If low body mass index (BMI), provide advice on weight gain before considering treatment.
- Cardiovascular assessment to include (but not limited to) the following considerations:
    - Presence of cardiac disease, history of exercise syncope, undue breathlessness, signs of heart failure, chest pain suggesting cardiac origin, palpitations and heart murmur
    - Family history of cardiovascular disease and consideration of major lifestyle risk factors such as smoking and obesity
    - Electrocardiogram (ECG) to be carried out if clinically indicated based on patient medical history, cardiovascular assessment or if the patient is being treated with a medicine that may pose an increased cardiac risk.
    - Specialist cardiac evaluation to be requested if the ECG shows abnormalities or if the cardiovascular assessment raises concerns.

Monitoring to be completed by the specialist service provider before initiation of shared care agreement:

- Continue to monitor the patient until shared care agreement is accepted, and ongoing prescribing and monitoring responsibilities are transferred to the GP.
- Respond promptly with advice on action required if adverse effects signs or symptoms are reported by the patient, either directly or through their GP.

Monitoring to be completed by the GP once shared care agreement in place:

The specialist should provide the GP with age specific prescribing guidance (including dose) and monitoring requirements.

Monitoring results should be compared against the normal range for age, height and sex. The patient's height and weight should be plotted on growth charts to enable a visual representation of continuous individualised growth over time. A continuous record enables any deviation from the patients expected growth pattern and centile to be detected. The Royal College of Paediatrics and Child Health (RCPCH) website provides UK-WHO growth charts which are accessible here. Apps may be available to download from online stores for use on electronic devices to aid calculation of growth centiles. Consideration should be given as to whether the App is endorsed by recognised professional bodies such as the RCPCH.

Children's blood pressure increases with size. Hypertension is defined as average systolic blood pressure (SBP) and/or diastolic blood pressure (DBP) that is greater than or equal to the 95th percentile for sex, age, and height. A child would be considered to be normotensive if their blood pressure is at the 90th percentile or less. Local specialists advocate use of the following resource for determination of blood pressure percentiles: The Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents. Pediatrics 2004 Aug;114(Suppl 2:)555-76.

Nationally agreed normal range values for children's heart rate (based on age) can be viewed in the table below replicated from the following resource: Advanced Paediatric Life Support: A Practical Approach to Emergencies, Sixth Edition. Edited by Martin Samuels and Susan Wieteska, 2016.

Age	**Pulse** (5^{th}-95^{th} centile)
6-7 years	80-130 bpm
8-11 years	70-120 bpm
12 years	65-115 bpm
14 years	60-110 bpm
Adult	60-100 bpm.

Monitoring parameters to be measured by the GP and recommended frequencies:

Monitoring Parameter	**Children aged 6 to 10 years**	**Children and young people aged 11 years and above**
Height	Every 6 months	
Weight	Every 3 months Specialist may advise a reduction to 6 monthly monitoring if child consistently gaining weight and prescribed stable dose	Every 6 months Specialist may advise an increase in frequency if concerns arise
Pulse and blood pressure *(use appropriately sized cuff for the size of the child's upper arm and repeat blood pressure manually if reading is raised)*	Every 6 months Specialist may advise measuring pulse and blood pressure one week after a dose change.	
Adverse events	Be alert to the possibility of adverse effects at every contact	

Where abnormal results are identified during routine monitoring consider the actions in the table below, seeking advice from ADHD specialist for further support and guidance when required. If monitoring results are forwarded to the specialist team, please include clear clinical information on the reason for sending, to inform action to be taken by secondary care.

As well as responding to absolute values, a rapid change or a consistent trend in any value should prompt caution and extra vigilance.

Monitoring Parameter	**Result prompting further action**	**Action to be taken by GP**
Height	Height expectation for age not met; deviation from patients expected growth pattern and centile	Continue treatment and contact initiating specialist for advice; specialist may consider planned break in treatment to allow catch-up growth
Weight	Unintentional weight loss >5% total body weight over 6-12 months and other possible causes have been excluded	Continue treatment and contact initiating specialist for advice
Pulse	Heart rate elevated above the normal limit for the patient's age (see above). See table below for patient reported cardiovascular signs and symptoms.	Recheck measurement after at least 24 hours apart. Stop methylphenidate if persistently elevated and seek advice from initiating specialist. Manage ongoing symptoms in accordance with local guidelines and specialist advice.
Blood pressure *Note: Methylphenidate may decrease the effectiveness of antihypertensives (see supporting information below).*	Systolic blood pressure ≥ 95th percentile to ≤ 99th percentile for sex, age, and height according to the charts here *Or* A clinically significant increase in blood pressure from baseline determined on an individual patient basis.	Recheck measurement after at least 24 hours apart. Reduce methylphenidate dose if persistently elevated and seek advice from initiating specialist. In context of recent dose increase, revert to previous dose; in absence of recent dose changes, reduce dose by half. Manage ongoing symptoms in accordance with local guidelines and specialist advice.
	Systolic blood pressure > 99th percentile for sex, age, and height according to the charts here	**Stop methylphenidate** and seek advice from initiating specialist.

Presentation of the following adverse effects, signs or symptoms and associated actions should be noted. Any serious adverse reactions should be reported to the MHRA via the Yellow Card scheme. See also adverse effects in supporting information below.

Adverse effects, signs and symptoms	Action to be taken by GP
Concerns about possible diversion, misuse or abuse of medication	Contact initiating specialist for advice
Worsening behaviour	Continue treatment and contact initiating specialist for review
Change in sleep pattern	Continue treatment; advise patient to record sleep diary which may aid identification of sleeping patterns and lifestyle factors that may be contributing. Offer practical sleep hygiene information. If problem persists beyond routine primary care management of sleep disorders, and other possible causes have been excluded, contact initiating specialist for review.
Onset or exacerbation of motor and verbal tics	Contact initiating specialist for advice. Decision to reduce/ stop methylphenidate should be specialist led.
Development of symptoms such as palpitations, exertional chest pain, unexplained syncope, dyspnoea or other symptoms suggestive of cardiac disease or arrythmia. See table above for tachycardia detected during routine monitoring	**Stop methylphenidate**. Contact initiating specialist who will determine whether methylphenidate can be re-started once patient stable. Manage ongoing symptoms in accordance with local guidelines. Refer for prompt cardiology review if indicated.
Development or worsening of psychiatric disorders e.g. suicidal tendency or ideation, anxiety, irritability, agitation, tension, aggression, hostility, emotional lability, depression, psychotic or manic symptoms	Contact initiating specialist for advice. Decision to reduce/ stop methylphenidate should be specialist led. Follow local guidelines for treatment and/or referral to mental health services if symptoms persist.
Onset or exacerbation of seizures.	**Stop methylphenidate.** Refer for urgent neurology review in accordance with local referral guidance. Notify initiating specialist
Cerebral vasculitis (symptoms may include: severe headache, numbness, weakness, paralysis, and impairment of coordination, vision, speech, language or memory)	**Stop methylphenidate and arrange urgent admission to paediatrics**

Supporting Information

This section provides additional information regarding methylphenidate. Refer to the online BNF for children and SPCs for full prescribing data.

During the service transition process there may be circumstances where paediatric or CAMHS providers continue to provide care for an individual beyond the age of 18 years, or where adult services provide care for an individual below the age of 18 years. In these situations the specialist should provide the GP with age specific prescribing guidance (including dose) and monitoring requirements.

Refer to NICE Guideline NG87 Attention deficit hyperactivity disorder: diagnosis and management (2018) for guidance on the management of ADHD.

Legal classification

Methylphenidate is a Schedule 2 controlled drug. Prescriptions must comply with Misuse of Drugs Regulations 2001. The Department of Health has issued a strong recommendation that the **maximum quantity of Schedule 2, 3 or 4 Controlled Drugs prescribed should not exceed 30 days**; exceptionally, to cover a justifiable clinical need and after consideration of any risk, a prescription can be issued for a longer period, but the reasons for the decision should be recorded on the patient's notes.

Dosage and administration (to be determined by specialist)

Specialists should be familiar with the pharmacokinetic profiles of all methylphenidate preparations to ensure that treatment is tailored effectively to the individual's needs. The choice of formulation will be decided by the treating specialist on an individual basis depending on the intended duration of effect and targeting specific periods of the day that are particularly relevant for an individual. If product switches are required this will be managed by the specialist.

Methylphenidate should be prescribed by brand to ensure continuity. Modified release preparations contain both immediate-release and modified-release methylphenidate. The proportion of immediate-release and modified-release methylphenidate differs between brands; different preparations may not have the same clinical effect.

Immediate-release methylphenidate is no longer recommended first line due to the risk of diversion and the rapidly fluctuating levels of symptom control observed. Risk of diversion for modified-release methylphenidate is much lower.

Refer to Devon formulary for list of preparations and associated release profiles approved for use locally. Usual doses of currently approved modified-release preparations are shown below:

Concerta® XL tablets: 18mg, 27mg, 36mg, 54mg	18 mg once daily, in the morning, increased at weekly intervals of 18 mg according to response. Licensed max. dose is 54 mg daily.
Equasym® XL capsules: 10mg, 20mg, 30mg	10 mg once daily, in the morning before breakfast; increased at weekly intervals according to response. Licensed max. dose is 60 mg daily.
Medikinet® XL capsules: 5mg, 10mg, 20mg, 30mg, 40mg, 50mg, 60mg	10 mg once daily, in the morning with breakfast; increased at weekly intervals according to response. Licensed max. dose is 60 mg daily.
Xenidate® XL tablets 18mg, 27mg, 36mg. 54mg	18mg once daily in the morning, adjusted at weekly intervals of 18mg as required. Licensed max. dose is 54mg daily.
Immediate release methylphenidate tablets 5mg, 10mg, 20mg	5 mg 1–2 times a day, increased in steps of 5–10 mg daily if required, at weekly intervals. Licensed max. dose is 60 mg daily in divided doses.

Treatment review and discontinuation

The lowest effective dose should be prescribed. Treatment must be stopped if the symptoms do not improve after appropriate dosage adjustment over 4-6 weeks, overseen by the specialist. Other circumstances surrounding treatment, such as adherence to medication schedule, side effects and motivation should be considered. If paradoxical aggravation of symptoms or other intolerable adverse effects occur, the dosage should be reduced or treatment discontinued. Avoid abrupt withdrawal.

In all individuals, careful supervision is required during drug withdrawal, since this may unmask depression as well as chronic over-activity. Some patients may require long-term follow up. Treatment discontinuation will be guided by the specialist.

Trial periods of stopping medication or reducing the dose may be considered when assessment of the overall balance of benefits and harms suggests this may be appropriate. This should be undertaken and supervised by the specialist who will advise the patient and primary care prescriber of the outcome.

Contraindications

- Hypersensitivity to methylphenidate or any product excipients
- Glaucoma, Phaeochromocytoma, Hyperthyroidism or Thyrotoxicosis
- During treatment with non-selective, irreversible monoamine oxidase (MAO) inhibitors, or within a minimum of 14 days of discontinuing, due to the risk of hypertensive crisis
- Diagnosis or history of severe depression, anorexia nervosa/anorexic disorders, suicidal tendencies, psychotic symptoms, severe mood disorders, mania, schizophrenia, psychopathic/borderline personality disorder, severe and episodic (Type I) Bipolar (affective) Disorder (that is not well-controlled)
- Pre-existing cardiovascular disorders including severe hypertension, heart failure, arterial occlusive disease, angina, haemodynamically significant congenital heart disease, cardiomyopathies, myocardial infarction, potentially life-threatening arrhythmias and channelopathies
- Pre-existing cerebrovascular disorders cerebral aneurysm, vascular abnormalities including vasculitis or stroke
- **Medikinet® XL**: a history of pronounced anacidity of the stomach with a pH value above 5.5, in therapy with H_2 receptor blockers, proton pump inhibitors or in antacid therapy

Precautions

In addition to the points listed below, refer to the monitoring section above for further cautions to be noted during treatment depending on patient medical history and actions to take in the case of a severe adverse effect or patient reported signs or symptoms.

- Caution is indicated in treating patients whose underlying medical conditions might be compromised by increases in blood pressure or heart rate.
- Co-morbidity of psychiatric disorders should be taken into account when prescribing.
- Sudden death has been reported in association with the use of stimulants. Refer to SPCs for further details.
- Methylphenidate should be used with caution in patients with epilepsy. Methylphenidate may lower the convulsive threshold in patients with prior history of seizures, in patients with prior EEG abnormalities in absence of seizures, and rarely in patients without a history of convulsions and no EEG abnormalities.
- Refer to SPCs for treatment in patients with pre-existing severe GI narrowing, dysphagia or significant swallowing difficulties – certain dose forms may not be appropriate due to the prolonged release design or because of rare reports of obstructive symptoms following ingestion of nondeformable prolonged-release formulations.
- Methylphenidate should be used with caution in patients with known drug or alcohol dependency because of a potential for abuse, misuse or diversion.

Adverse effects

This list is not exhaustive. Only very common (greater than 1 in 10), common (1 in 100 to 1 in 10) and uncommon (1 in 1000 to 1 in 100) adverse effects are listed below. Refer to the online BNF for children and SPCs for less frequent adverse effects. Seek specialist advice where necessary.

Common or very common: Aggression (or hostility); alopecia; anxiety; appetite decreased; arrhythmias; arthralgia; behaviour abnormal; cough; depression; diarrhoea; dizziness; drowsiness; dry mouth; fever; gastrointestinal discomfort; growth retardation; headaches; hypertension; laryngeal pain; mood altered; movement disorders; nasopharyngitis; nausea; palpitations; sleep disorders; vomiting; weight decreased

Uncommon: Chest discomfort; constipation; dyspnoea; fatigue; haematuria; hallucinations; muscle complaints; psychotic disorder; suicidal behaviours; tic; tremor; vision disorders

The SPCs also list several reactions of unknown frequency which are to be noted:

- Cerebral vasculitis appears to be a very rare idiosyncratic reaction to methylphenidate exposure. There is little evidence to suggest that patients at higher risk can be identified and the initial onset of symptoms may be the first indication of an underlying clinical problem. Early diagnosis, based on a high index of suspicion, may allow the prompt withdrawal of methylphenidate and early treatment.
- Priapism: Prolonged and painful erections have been reported in association with methylphenidate products, mainly in association with a change in the methylphenidate treatment regimen.

Interactions

This list is not exhaustive. Consider interaction with prescription and recreational drugs. Refer to the online BNF for children and SPCs for full prescribing data. Seek specialist advice where necessary and / or refer to specialist Medicines Information services for additional support (and reference to Stockley's Drug Interactions where paid subscription available) if concomitant administration of interacting medicines is clinically indicated.

The following interactions are classified in the online version of the BNF for children as **severe** (the result may be a life-threatening event or have a permanent detrimental effect):

- **Apraclonidine**: Methylphenidate is predicted to decrease the effects. Manufacturer advises avoid.
- **Desflurane, isoflurane, methoxyflurane,** and **sevoflurane:** Methylphenidate might increase the risk of hypertension and arrhythmias. Manufacturer advises avoid methylphenidate on day of surgery.
- **Disulfiram:** Methylphenidate has been reported to cause psychotic symptoms.
- **Isocarboxazid, phenelzine,** and **tranylcypromine**: Methylphenidate causes a hypertensive crisis. Manufacturer advises avoid and for 14 days after stopping the MAOI.
- **Linezolid**: Methylphenidate might increase the risk of elevated blood pressure. Manufacturer advises avoid.
- **Methylthioninium chloride** and **moclobemide**: Methylphenidate is predicted to cause a hypertensive crisis
- **Nirmatrelvir**: When boosted with ritonavir nirmatrelvir predicted to increase the concentration of methylphenidate. Manufacturer advises monitor.
- **Ozanimod**: Methylphenidate is predicted to increase the risk of a hypertensive crisis.
- **Paliperidone** and **Risperidone**: Increased risk of dyskinesias. Manufacturer advises caution.
- **Rasagiline** and **Selegiline:** Increased risk of hypertensive crisis. Manufacturer advises avoid.
- **Valproate**: Might enhance the effects of methylphenidate.

The following interactions in the BNF for children are noted as **moderate** (the result could cause considerable distress or partially incapacitate a patient; they are unlikely to be life-threatening or result in long-term effects):

- **Alcohol**: Might increase the concentration of methylphenidate. Manufacturer advises avoid.
- **Tricyclic antidepressants**: Methylphenidate might increase the concentration. Manufacturer advises use with caution and adjust dose. See information below.
- **Carbamazepine**: Might decrease the concentration of methylphenidate. Manufacturer makes no recommendation.

In addition, the SPCs note the following:

- Serious adverse events, including sudden death, have been reported in concomitant use with **clonidine**.
- Methylphenidate may decrease the effectiveness of **antihypertensives**.
- Caution is advised following co-administration of **drugs (in addition to those listed above) that can elevate blood pressure,** and with **dopaminergic drugs, including antipsychotics**.
- There have been reports of serotonin syndrome following coadministration with **serotonergic medicinal products**. If concomitant use is warranted, prompt recognition of the symptoms of serotonin syndrome is important. Methylphenidate must be discontinued as soon as possible if serotonin syndrome is suspected.
- Methylphenidate may inhibit the metabolism of **coumarin anticoagulants**, **anticonvulsants (e.g. phenobarbital, phenytoin, primidone)**, and **some antidepressants (tricyclics and selective serotonin reuptake inhibitors)**. The manufacturer recommends when starting or stopping treatment with methylphenidate, it may be necessary to adjust the dosage of these drugs already being taken and establish drug plasma concentrations (or for coumarin, coagulation times).
- **Medikinet® XL**: The SPC reports that methylphenidate must not be taken together with **H_2 receptor blockers, proton pump inhibitors** or **antacids**, as this could lead to a faster release of the total amount of active substance.

In addition to the interactions above the UK Medicines Information Service identifies that there are a number of potential drug interactions with **cannabis-based medicinal products**; tetrahydrocannabinol found in cannabis can cause a significant increase in heart rate and blood pressure, when used in combination with methylphenidate.

Pregnancy and lactation

Before prescribing in this area seek specialist advice and check up-to-date sources of information. Devon Partnership NHS Trust have produced a Prescribing Guideline for the Pharmacological Management of Perinatal Mental Health Conditions which can be accessed here. Contact details for perinatal mental health services can be found below.

Pregnancy: SPCs state that there is limited experience regarding the use of methylphenidate during pregnancy; methylphenidate is not recommended for use during pregnancy unless a clinical decision is made that postponing treatment may pose a greater risk to the pregnancy.

The UK Teratology Information Service (UKTIS) provides a national service on all aspects of the toxicity of drugs and chemicals in pregnancy (Tel: 0344 892 0909), and provides the 'best use of medicines in pregnancy' (bumps) website for supportive patient information relating to individual treatments. UKTIS information can be accessed here and bumps patient information leaflet here.

Lactation: SPCs state that methylphenidate is excreted in human milk. A decision must be made whether to discontinue breast-feeding or to discontinue/abstain from methylphenidate therapy taking into account the benefit of breast-feeding for the child and the benefit of therapy for the woman.

UK Drugs in Lactation Advisory Service (UKDILAS) provides evidence based information on the use of drugs during the breastfeeding period to all UK healthcare professionals. Information relating to methylphenidate can be accessed here.

Support

Local child and adolescent ADHD service providers	
Children and Family Health Devon https://childrenandfamilyhealthdevon.nhs.uk Email: CFHD.DevonSPA@nhs.net Telephone: 0330 0245 321	**University Hospitals Plymouth NHS Trust** Email: plh-tr.cdcplymouth@nhs.net Telephone 01752 439400
RD&E Foundation Trust Email: rde-tr.exeterchildhealth@nhs.net	**Livewell Southwest** https://www.livewellsouthwest.co.uk/childrens-services/camhs Telephone: 01752 434476
Torbay and South Devon NHS Foundation Trust www.torbayandsouthdevon.nhs.uk/services/camhs/ Telephone: 01803 655692	

Local adult ADHD service providers	
Devon Adult Autism & ADHD Service (DAANA); Devon Partnership NHS Trust Email: dpt.adhd@nhs.net Telephone: 01392 674250	**Livewell Southwest** Email: livewell.adultadhdassessment@nhs.net Telephone: 01752 434034

Additional ADHD service providers with an NHS Devon ICB Contract
Refer to the DRSS ADHD and Autism FAQ for a list of additional providers with an NHS Devon contract (and Devon shared care agreements): North & East Devon | South & West Devon

Perinatal mental health teams	
Exeter Email: dpn-tr.PerinatalTeamExeter@nhs.net Telephone: 01392 674964	**North Devon** Email: dpn-tr.perinatalNorth@nhs.net Telephone: 01271 322772
Plymouth Email: livewell.perinatalmht@nhs.net Telephone: 01752 431607	**South Hams and West Devon** Email: dpt.perinatalteamwestdevon@nhs.net Telephone: 01822 813 070
Torbay Email: dpn-tr.PerinatalTeamTorbay@nhs.net Telephone: 01803 396590	

For further support and information in relation to individual shared care agreements please contact your practice pharmacist or alternatively please contact the Medicines Optimisation Team.

Email: D-ICB.medicinesoptimisation@nhs.net

Date ratified: May 2023 (link to DRSS ADHD and Autism FAQ added Dec 25)

Shared Care Agreement Letter - Specialist Request to GP

To	**GP name**	
	Practice address	
Patient name		
Hospital number		
NHS number		
Date of birth		
Address		

GPs are invited to participate in shared care agreements, but if the GP is not confident to undertake these roles then they are under no obligation to do so. If so, the total clinical responsibility for the patient for the diagnosed condition remains with the specialist. If asked to prescribe this drug the GP should reply to this request as soon as practical. Continuing the care assumes communication between the specialist, GP and patient; the intention should be explained to the patient and accepted by them.

The prescriber has the clinical and legal responsibility for the drug and the consequences of its use. Responsibility for drug monitoring and acting on results remains with the prescriber.

NHS England 'Responsibility for prescribing between Primary & Secondary/Tertiary care' guidance (2018) states that "when decisions are made to transfer clinical and prescribing responsibility for a patient between care settings, it is of the utmost importance that the GP feels clinically competent to prescribe the necessary medicines. It is therefore essential that a transfer involving medicines with which GPs would not normally be familiar should not take place without full local agreement, and the dissemination of sufficient, up-to-date information to individual GPs."

I have discussed and agreed the following treatment with the patient:

Methylphenidate (state brand, formulation, dose, frequency)

……

For the treatment of Attention Deficit Hyperactivity Disorder (ADHD) in a child or young person aged:……..

Treatment was started on……..

The patient has been on the optimised dose stated for ……

This patient is now suitable for prescribing to move to primary care. The patient fulfils criteria for shared care therefore I am writing to request your agreement to continue the care of this patient according to the Specialised Medicines Service (SMS) Guideline for methylphenidate.

In accordance with the SMS Guideline the transfer of monitoring and prescribing to the GP is after at least 3 months, or once the patient's condition/dose is stabilised whichever is longer.

I have provided the patient with sufficient medication to last until ……

Please undertake prescribing and monitoring from ……. in line with the SMS Guideline.

The next monitoring is due on ……

I have arranged a follow up with this patient in ……..

I can confirm that the following has happened with regard to this treatment:

	Specialist to complete (YES/NO)
Baseline investigation and monitoring as set out in the SMS Guideline have been completed and were satisfactory	
The condition being treated has a predictable course of progression and the patient can be suitably maintained by primary care	
The risks and benefits of treatment have been explained to the patient	
The roles of the Specialist / GP / Patient have been explained and agreed	
The patient has agreed to this shared care arrangement, understands the need for ongoing monitoring, and has agreed to attend all necessary appointments	
I have enclosed a copy of the SMS Guideline which covers this treatment. The guideline can also be found here	
I have included with this letter copies of the information the patient has received	

The results of baseline tests, early monitoring and any additional supportive information are included below and/or attached:

GP please sign response letter and return promptly (where possible this should be within 14 days of the request being made).

Specialist signature		**Date**	
Specialist name, role, speciality			
Daytime telephone number			
Email address			
Alternative contact **e.g. clinic or specialist nurse**			
Out of hours contact details **e.g. duty doctor**			

Remember to keep a copy of this letter for the patient's records.

Shared Care Agreement Letter – GP Acceptance Letter to Specialist

To **Specialist name**	
Patient name	
Hospital number	
NHS number	
Date of birth	
Address	

GPs are invited to participate in shared care agreements, but if the GP is not confident to undertake these roles then they are under no obligation to do so. If so, the total clinical responsibility for the patient for the diagnosed condition remains with the specialist. If asked to prescribe this drug the GP should reply to this request as soon as practical. Continuing the care assumes communication between the specialist, GP and patient; the intention should be explained to the patient and accepted by them.

The prescriber has the clinical and legal responsibility for the drug and the consequences of its use. Responsibility for drug monitoring and acting on results remains with the prescriber.

NHS England 'Responsibility for prescribing between Primary & Secondary/Tertiary care' guidance (2018) states that "when decisions are made to transfer clinical and prescribing responsibility for a patient between care settings, it is of the utmost importance that the GP feels clinically competent to prescribe the necessary medicines. It is therefore essential that a transfer involving medicines with which GPs would not normally be familiar should not take place without full local agreement, and the dissemination of sufficient, up-to-date information to individual GPs."

Thank you for your request for me to accept prescribing responsibility for this patient under a shared care agreement and to provide the following treatment:

Medicine	**Brand and formulation**	**Route**	**Dose and frequency**
Methylphenidate		Oral	

I can confirm that **I am willing to take on this responsibility** from …… and will maintain the prescribing and monitoring responsibilities as set out in the Specialised Medicines Service (SMS) Guideline for methylphenidate for the treatment of Attention Deficit Hyperactivity Disorder (ADHD) in children and young people aged 6 years and above.

GP signature		**Date**	
GP name			
Practice address			
Telephone number			
Email address			

Remember to keep a copy of this letter for the patient's records. If this letter is not returned sharing of the care for this patient will not commence.

Shared Care Agreement Letter – GP Refusal Letter to Specialist

To **Specialist name**	
Patient name	
Hospital number	
NHS number	
Date of birth	
Address	

GPs are invited to participate in shared care agreements, but if the GP is not confident to undertake these roles then they are under no obligation to do so. If so, the total clinical responsibility for the patient for the diagnosed condition remains with the specialist. If asked to prescribe this drug the GP should reply to this request as soon as practical. Continuing the care assumes communication between the specialist, GP and patient; the intention should be explained to the patient and accepted by them.

The prescriber has the clinical and legal responsibility for the drug and the consequences of its use. Responsibility for drug monitoring and acting on results remains with the prescriber.

NHS England 'Responsibility for prescribing between Primary & Secondary/Tertiary care' guidance (2018) states that "when decisions are made to transfer clinical and prescribing responsibility for a patient between care settings, it is of the utmost importance that the GP feels clinically competent to prescribe the necessary medicines. It is therefore essential that a transfer involving medicines with which GPs would not normally be familiar should not take place without full local agreement, and the dissemination of sufficient, up-to-date information to individual GPs."

In the interest of patient safety NHS Devon, in conjunction with local acute trusts have classified methylphenidate as a "shared care" drug which requires a number of conditions to be met before transfer can be made to primary care.

Thank you for your request for me to accept prescribing responsibility for this patient. I regret to inform you that in this instance **I am unable to take on responsibility** due to the following:	**Tick applicable box**
The prescriber does not feel clinically confident in managing this individual patient's condition, and there is a sound clinical basis for refusing to accept shared care. As the patients GP I do not feel clinically confident to manage this patient's condition. I have consulted with other GPs in my practice who support my decision. This is not an issue which would be resolved through adequate and appropriate training of prescribers within my practice. **I have discussed my decision with the patient and request that prescribing for this individual remain with you as the specialist, due to the sound clinical basis given below.**	

The condition does not fall within the criteria defining suitability for inclusion in a shared care arrangement. As the condition requested to be treated is not included on the locally recognised list of indications for shared care for methylphenidate I am unable to accept clinical responsibility for prescribing this medication at this time. **Until this condition is identified locally as requiring shared care with methylphenidate the responsibility for providing this patient with their medication remains with you.**	
A minimum duration of supply by the initiating specialist. As the patient has not had the minimum supply of medication to be provided by the initiating specialist I am unable to take clinical responsibility for prescribing this medication at this time. Therefore can you please contact the patient as soon as possible in order to provide them with the medication that you have recommended. **Until the patient has had the appropriate length of supply the responsibility for providing the patient with their medication remains with you.**	
Initiation and optimisation by the initiating specialist. As the patient has not been optimised on this medication I am unable to take clinical responsibility for prescribing this medication at this time. Therefore can you please contact the patient as soon as possible in order to provide them with the medication that you have recommended. **Until the patient is optimised on this medication the responsibility for providing the patient with their medication remains with you.**	
Other (GP to complete if there are other reasons why shared care cannot be accepted):	

I would be willing to consider prescribing for this patient once the above criteria have been met for this treatment.

Please do not hesitate to contact me if you wish to discuss any aspect of my letter in more detail and I hope to receive more information regarding this shared care agreement as soon as possible.

GP signature		**Date**	
GP name			
Practice address			
Telephone number			
Email address			

Remember to keep a copy of this letter for the patient's records.