Shared care guideline for the use of Methylphenidate, Dexamfetamine, Lisdexamfetamine dimesylate & Atomoxetine for the management of Attention-deficit hyperactivity disorder (ADHD) in adult patients (age 18- 64 years)

This shared care guideline is for use <u>in BCCG patients only.</u>

<u>DOCUMENT TO BE SCANNED INTO ELECTRONIC RECORDS AND FILED IN NOTES</u>

Patient Name:	**DOB:**
NHS No:	**ELFT Rio No:**
Name of Referring Consultant:	**Contact number:**

Introduction

ADHD is a neurodevelopmental condition which manifests as cognitive and behavioural deficits. It is characterised by the core symptoms of persistent hyperactivity, impulsiveness and inattention. As well as presence of core symptoms identified, there must be clear evidence of psychological, social and/or educational or occupational impairment plus some impairment in two or more settings (home, at work, social, occupational).

As their brains mature, a significant proportion of adolescents will acquire the necessary skills to be able to manage without medication. However, some adolescents will still endure significant impairment due to ADHD, and will continue to need medication during the transition into adulthood, and during adult life.

ADHD is thought to be a persistent condition and a diagnosis, using the criteria described in both DSM-IV and ICD-10 should only be made by a Specialist Psychiatrist or appropriately qualified healthcare professional with training and expertise in the diagnosis of ADHD.

Approved by Bedfordshire and Luton Joint Prescribing Committee and the East London Foundation Trust Medicine Management Committee. November 2016

NICE clinical guidelines on the treatment of ADHD recommend that drug treatment of ADHD should form part of a comprehensive treatment programme that focuses on psychological, behavioural and educational or occupational needs.

Guidance Overview

The remit of this guideline is to provide guidance on the shared care of adults who may be prescribed Atomoxetine, Dexamfetamine, Lisdexamfetamine and Methylphenidate in the following scenarios:

1) Continuation of therapy via a shared care guideline for adult patients who have been newly diagnosed with ADHD and who have been initiated on treatment by the Secondary care Specialist either directly or after referral to a Tertiary centre.
2) Continuation of therapy via a shared care guideline for "existing" adult patients who have been under the care of a Tertiary centre (e.g. Maudsley) and who have now been transferred back to the care of a local Secondary care Specialist.
3) Continuation of therapy via a shared care guideline for patients who have been prescribed ADHD medication under the Children and Adolescent Mental Health service (CAHMS) and who have now been transferred to the adult service**.**

This shared care guideline **excludes**:

1. Treatment of children and young people (6-17 years)
2. Treatment of children under 6 years
3. Treatment of adults ≥ 65 yrs - Refer to the Adults and Older Persons service

Treatment of ADHD in Adults

As well as adult ADHD being recognised by both ICD-10 and DSM-IV, NICE advocates drug treatment for adults with either moderate or severe ADHD. Methylphenidate is the first-line drug of choice in this cohort when exclusions do not apply. Psychological interventions without medication may be effective for some adults with moderate impairment, but there are insufficient data to support this recommendation. If Methylphenidate is ineffective or unacceptable, Atomoxetine, Lisdexamfetamine or Dexamfetamine may be tried.

It is recognised that up to 25% of children with ADHD will continue to have symptoms into adulthood and it is appropriate to continue treatment started in childhood in adults whose symptoms remain disabling. Treatment options mentioned in this shared care guideline are licensed mainly for initiation and continued use in children as ADHD has historically been considered a childhood disorder.

The British Association for Psychopharmacology (BAP) recognise that *"far more evidence is now available that is specific to adults with ADHD and new research has corroborated the view that deficits found in adults are similar to those already identified in children and that response to treatment is comparable."*

To assess efficacy, the following rating scales could be used: Conners' Adult ADHD Rating Scales (CAARS), the Strengths and Weaknesses of ADHD and Normal Behaviour Scale (SWAN), the SNAP-IV Rating Scale revision of Swanson, Nolan and Pelham (SNAP), ADHD Rating Scale – IV DuPaul et al, Adult Rating Scale (ARS), Current Symptom Scales (CSS), Adult ADHD Self- Report Scales (ASRS).

Referral and Assessment Process

New Adult patients identified by GP as having possible ADHD

- GP to refer to local Adult Psychiatric Specialist (ELFT) for initial assessment. If drug therapy is indicated, the ELFT specialist will initiate therapy.
  (NB: In more complex cases, the ELFT specialist may refer to a tertiary centre e.g. The Maudsley for advice prior to initiating therapy).*
- The local Adult Pyschiatric Specialist (ELFT) who is initiating therapy should discuss with the patient and their family or carers (if applicable) about treatment options, including medication, treatment aims, available options, medication and alternative/additional interventions, side effects and the monitoring protocol.
- The possibility of stopping medication and reasons should also be discussed.
- Care can be transferred from local Adult Psychiatric Specialist to the patient's GP via a shared care agreement once the patient has been established on a stable dose.

Under this treatment pathway, there should be no direct transfer of care between the tertiary centre and the GP.

Existing adult patients who have been under the care of a Tertiary centre and who have now been transferred back to the care of a local Secondary care Specialist

- Tertiary centre Specialist to discuss with the patient and their family or carers (if applicable) about continuation of treatment and arrange for the transfer of care to the local Secondary care Adult Psychiatric service. (ELFT).
- ELFT Specialist to accept the transfer of care from the Tertiary Centre and to initiate a shared care agreement for ongoing prescribing and monitoring with the patients GP.

CAMHS patients who transition into adult services

- CAMHS to inform Secondary care Adult Psychiatric services of the details and history of the patient who is approaching his/her 18th birthday and who has been identified as someone who may require on-going support with ADHD.
- CAMHS to inform the GP any decision to stop or alter the treatment plan prior to transition to adult services.
- ELFT Specialist to initiate a shared care agreement for ongoing prescribing and monitoring with the patients GP once patient has been transitioned into adult services.
- Should on-going prescription of psychostimulants be considered necessary, the patient should be advised of the need for safe storage to prevent diversion and potential abuse. Patients should be reminded that although medication is not licensed in adult ADHD, it may continue to be effective.

Only adolescents who show clear improvement with ADHD medication should be considered for on-going treatment as adults.

Shared Care Responsibilities

The aim of this document is to provide information to allow patients to be managed safely via transfer of prescribing across the Primary and Secondary care interface. It assumes a partnership and an agreement between a hospital specialist, GP and the patient/carer and also sets out responsibilities for each party.

The intention to share care should be explained to the patient by the Specialist and accepted by the patient. Once, agreement has been reached with the patient, the Specialist should contact the GP and invite them to participate in a shared care

arrangement. Agreement to share care will be assumed unless the GP advises otherwise. (NB: If a GP is not able to participate fully with the shared care agreement, they are under no obligation to do so. In such an event, the total clinical responsibility for the patient for the diagnosed condition of ADHD will remain with the Specialist team.) The CCG may be contacted to facilitate shared care with a primary care GP. Under this shared care agreement, patients will be under regular follow up and this provides an opportunity to discuss drug therapy. Intrinsic to the shared care agreement is that the prescribing doctor should be appropriately supported by a system of communication and co-operation in the management of patients.

The doctor who prescribes the medicine has clinical responsibility for the drug and the consequences of its use

SUMMARY OF ADULT PSYCHIATRIC SPECIALIST RESPONSIBILITIES

- For newly diagnosed adult patients, initiate treatment and prescribe until patient is stable. Where more than one agent is considered suitable, the product with the lowest acquisition cost should be considered. This will usually be methylphenidate which is considered 1st line by NICE CG.
- The Adult Psychiatric Outpatient clinic will accept the transfer of patients from CAMHS who are approaching their 18th birthday and require on-going support and medication to manage their ADHD.
- The Adult Psychiatric Outpatient clinic will accept the transfer of patients who are being transferred from Tertiary care back to Secondary care.
- Request shared care with GP once patient is stable
- Send written correspondence to GP, ensuring that the dose and frequency of medication is clearly documented. If prescribing long acting Methylphenidate, prescribe by brand name (as different brands are not interchangeable).
- The Adult Psychiatric outpatient clinic will review the patient regularly and liaise with the GP should treatment be varied or discontinued.
- Should medication no longer be considered necessary, the Adult Psychiatric outpatient clinic will advise the GP of an appropriate withdrawal regimen as ADHD medication should be withdrawn slowly**.** The patient's on-going needs should be assessed by the CAS team of the adult CMHT.
- Report adverse events to the CSM/MHRA via Yellow card located in BNF or online www.yellowcard.gov.uk

SUMMARY OF GP RESPONSIBILITIES

- Reply to the request for shared care as soon as practicable
- To check that the patient is continuing to attend the outpatient clinics prior to re-authorisation of repeat prescriptions.
- Prescribe ADHD treatment at the dose recommended. If prescribing long acting Methylphenidate, prescribe by brand name (as different brands are not interchangeable).
- Adjust dose as advised by the specialist.
- If ADHD medication needs to be discontinued, contact the Specialist for advice on a withdrawal regimen (as ADHD medication needs to be withdrawn slowly) if not provided already.
- Monitor the patients overall health and well-being.
- Contact the Specialist to discuss any significant changes in the patient's condition.
- Inform Specialist of any emerging side effects.
- Inform the Specialist if there is suspicion of abuse of stimulant ADHD medication. Medication requests for longer than a month (e.g. covering holidays) should be discussed with the Specialist if necessary and can be issued at the prescriber's discretion.
- Report adverse events to the Specialist and the MHRA/CSM via Yellow card located in the current BNF or online www.yellowcard.gov.uk
- Refer any patient who becomes pregnant or who wishes to plan a pregnancy to the Specialist team.

SUMMARY OF PATIENTS RESPONSIBILITIES

- Ensure patient have a clear understanding of treatment.
- Report to the specialist or GP if he or she does not have a clear understanding of the treatment.
- Share any concerns in relation to treatment with stimulants or Atomoxetine.
- Inform specialist or GP of any other medication being taken, including over-the-counter products
- Report any adverse effects to specialist or GP whilst taking ADHD medication.
- To contact the Specialist team as soon as possible if a patient becomes pregnant or who wishes to plan a pregnancy.

Physical Health Monitoring

Routine blood tests and ECGs are not currently recommended unless there is a clinical indication.

For newly diagnosed adult patients, prior to starting drug treatment, the patient with ADHD should have a full pre-treatment assessment. (To be done by ELFT Specialist).

See appendix 1 for physical health monitoring standards.

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ADHD medications

Methylphenidate is considered the stimulant of choice in the UK for adults with ADHD. Modified –release preparations are preferable to immediate release preparations as they pose less risk of abuse and improve adherence. If Methylphenidate is ineffective or unacceptable, Atomoxetine, Dexamfetamine or Lisdexamfetamine may be considered.

NB: Prescribers should note that ADHD drugs are not generally licensed for use in adult patients therefore, prescribing for adult patients is regarded as an “off label” use of a licensed product.

A summary of the licensed indications for each of the ADHD drugs is given below. For full up to date details and Licensing Information for ADHD drugs, clinicians should refer to individual Summary of Characteristics (SPCs) www.medicines.org.uk/emc or the most recent version of the electronic BNF www.bnf.org/products/bnf-online/

Summary of Licensing Indications

Methylphenidate

Methylphenidate is licensed for use in children aged 6 years of age and over. It is not licensed for initiation in adults per se however; it is acknowledged that it may be appropriate to continue treatment into adulthood. (Ref: Concerta XL® SPC).

Atomoxetine

Atomoxetine is licensed for for the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD) in children of 6 years and older, in adolescents and in adults as part of a comprehensive treatment programme. When used in adults, the presence of symptoms of ADHD that were pre-existing in childhood should be confirmed. Atomoxetine should not be initiated when the verification of childhood ADHD symptoms is uncertain. (Ref: Strattera® SPC).

Dexamfetamine

Dexamfetamine is indicated as part of a comprehensive treatment programme for attention-deficit/hyperactivity disorder (ADHD) in children and adolescents aged 6 to 17 years when response to previous Methylphenidate treatment is considered clinically inadequate.

Dexamfetamine is not licensed for use in adults. The safety and efficacy of Dexamfetamine in adults have not been established. (Ref: Amfexa® SPC)

Lisdexamfetamine

Lisdexamfetamine is indicated 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.

In adolescents whose symptoms persist into adulthood and who have shown clear benefit from treatment, it may be appropriate to continue treatment into adulthood. (Ref: Elvanse® SPC)

Prescribing Information:

General Points:

- For newly diagnosed adult patients commencing drug treatment, medication should be initiated by a Specialist Psychiatrist
- Existing patients (either adults being transferred from Tertiary care to Secondary care or patients being transferred from CAMHS to adult services, medication should be continued as specified by Tertiary care Specialist / CAMHS team (as applicable).
- Clinicians should refer to the current BNF/ SPC s and appendix 2 of this document for each drug for full information on dosage, contraindications / side effects / drug interactions etc.
- Drug treatment should be continued for as long as clinically effective and reviewed annually to assess need for continued treatment. Effects of missed doses, planned dose reductions, and periods of no treatment should be evaluated.
- Prescribers must follow the schedule 2 controlled drugs requirements when prescribing Methylphenidate, Dexamfetamine or Lisdexamfetamine as these

drugs are schedule 2 controlled drugs. Atomoxetine is not classed as a schedule 2 controlled drug and normal prescription requirements apply.

.A prescription for Methylphenidate, Dexamfetamine or Lisdexamfetamine requires:

- the total quantity to be prescribed to be written in words and figures
- a maximum supply of 28 days
- signature in the prescriber's own hand writing where computer generated prescriptions are issued
- use of indelible ink if prescription handwritten, signed and dated by prescriber, name and address of patient, form and strength of preparation, dose and frequency in the prescriber's own handwriting

Prescribing costs

(Costs based on April 2016 Drug Tariff)

Preparation	Cost / 30 days
Methylphenidate standard release tablets (generic)	£9.09 - £32.76 (5-20mg tds)
Concerta XL® (Methylphenidate modified release)	£31-£43 (18mg-36mg)
Equasym XL® (Methylphenidate modified release)	£25 - £70 (10- 60mg od)
Medikinet XL® (Methylphenidate modified release)	£57 (40mg od)
Matoride XL (Methylphenidate modified release)	£60 (54mg od)
Atomoxetine (Strattera®)	£62.46 - £83.28 (10mg – 100 mg od)
Dexamphetamine	£15.90 - £63.60 (5-20mg od)

CONTACT DETAILS:

In case of any issues or queries with respect to shared care, GPs should initially contact the individual Specialist who has initiated therapy (details as stated on the initial clinical letter). Other points of contact are:

- Natasha Patel, Lead Pharmacist Luton & Bedfordshire
  Email: Natasha.patel@elft.nhs.uk
  Tel 07940 466 861
- Dr Zelpha Kittler , Clinical Director, Bedfordshire (ELFT)
  Tel: 01234 299916
- Dr Farid Jabbor. Clinical Director, Luton (ELFT)
  Tel: 01582 707315

SUMMARY OF MAIN FEATURES OF TREATMENT OPTIONS FOR ADHD – **THIS LIST IS NOT EXHAUSTIVE** AND PRECRIBERS SHOULD REFER THE LASTEST BNF AND SPC FOR FULL CLINICAL DETAILS.

Treatment	Atomoxetine	Methylphenidate Modified Release (Concerta XL® and Equasym XL®)	Dexamphetamine (Dexadrine®)	Lisdexamfetamine mesilate
Duration of action	24 hours	**Concerta XL®** -12 hours **Equasym XL® -** 8 hours **Standard Release Methylphenidate (Ritalin®, Equasym®)** <12 hours	4- 24hours	Elvanse – 8 hours
Adverse Reactions	Transient abdominal pain and lost appetite. Cold/flu symptoms, anorexia, early morning awakening, irritability, mood swings, dizziness, somnolence, mydriasis, vomiting, constipation, dyspepsia, nausea, dermatitis, pruritus, rash, fatigue, weight decreased.	Transient decreased appetite, nervousness, Insomnia, headache, stomach ache. Drowsiness, dizziness, dyskinesia. Abdominal pain, nausea and vomiting. dry mouth. Tachycardia, palpitations, arrhythmias, changes in blood pressure and heart rate .Rash, pruritus, urticaria, fever, arthralgia, alopecia.	Insomnia, restlessness, irritability, euphoria, tremor, dizziness, headache and other symptoms of over-stimulation have been reported. Dry mouth, unwanted anorexia and other gastro-intestinal symptoms, sweating, convulsions and cardiovascular effects (tachycardia, palpitations, minor increases in blood pressure). Isolated reports of cardiomyopathy associated with chronic amphetamine use.	nausea, decreased appetite, vomiting, diarrhoea, dry mouth, abdominal cramps, dyspnoea, sleep disturbances, tics, aggression, headache, dizziness, drowsiness, mydriasis, labile mood, weight loss, pyrexia, malaise, growth restriction in; less commonly anorexia, tachycardia, palpitation, hypertension, logorrhoea, anxiety, paranoia, restlessness, depression, dysphoria, dermatillomania, mania, hallucination, sweating, tremor, visual disturbances, sexual dysfunction, rash; very rarely angle-closure glaucoma; also reported cardiomyopathy, euphoria, seizures, central stimulants have provoked choreoathetoid

	Post-marketing experience – suicide-related adverse events, abnormal liver function tests, jaundice, hepatitis, seizures.	Cerebral arteritis, angina, hyperactivity, convulsions, psychosis, tics including Tourette syndrome, neuroleptic malignant syndrome, tolerance and dependence, growth retardation, reduced weight gain, blood disorders including leucopenia and thrombocytopenia, muscle cramps, visual disturbances, exfoliative dermatitis, erythema multiforme.	Drug dependence. Intracranial haemorrhages and a toxic hypermetabolic state. Rhabdomyolysis and renal damage. Psychosis/psychotic reactions, night terrors, nervousness, abdominal cramps, decreased blood pressure, altered libido and impotence, growth retardation, hyperpyrexia, mydriasis, hyperflexia, chest pain, confusion, panic states, aggressive behaviour, delirium, visual disturbance, choreoathetoid movements, tics and Tourettes syndrome in pre-disposed individuals.	movements and dyskinesia, and Tourette syndrome in predisposed individuals
Special Precautions	Allergic reactions, hypertension, tachycardia, cardiovascular/cerebrovascular disease. Liver damage. Seizures. Suicidal thoughts/behaviour. Growth/development.	Monitor growth, blood pressure and full blood count; history of drug or alcohol dependence; psychosis; epilepsy; avoid abrupt withdrawal; pregnancy; GI narrowing (m/r preps).	Patients receiving guanethidine, mild hypertension or a family history of dystonias. Tics, epilepsy, monitor growth, impaired kidney function or unstable personality. Psychotic children. Avoid abrupt withdrawal.	anorexia; history of cardiovascular disease or abnormalities; psychosis or bipolar disorder; monitor for aggressive behaviour or hostility during initial treatment; history of drug or alcohol abuse; may lower seizure threshold (discontinue if seizures occur); tics and Tourette syndrome (use with caution)—discontinue if tics occur; monitor growth in children (see also below); susceptibility to angle-closure glaucoma; avoid abrupt withdrawal

Contraindications	Not to be used in combination with Monoamine Oxidase Inhibitors (MAOIs). Narrow angle glaucoma.	Anxiety or agitation; tics or a family history of Tourette's syndrome; hyperthyroidism, severe angina; cardiac arrhythmias; glaucoma; breast-feeding; in concomitant use, or use within the last two weeks, of monoamine oxidase inhibitors.	During, or for 14 days after treatment with a Monoamine Oxidase Inhibitor (MAOI). History of drug abuse, symptomatic cardiovascular disease and/or moderate or severe hypertensive disease. Hyperthyroidism, hyperexcitability or glaucoma. Tourette's syndrome or similar dystonias. Prophyria. History of alcohol abuse.	Hypersensitivity to sympathomimetic amines or any of the excipients listed in section 6.1. Concomitant use of monoamine oxidase inhibitors (MAOI) or within 14 days after MAOI treatment (hypertensive crisis may result; see section 4.5). Hyperthyroidism or thyrotoxicosis. Agitated states. Symptomatic cardiovascular disease. Advanced arteriosclerosis. Moderate to severe hypertension. Glaucoma.
Can be used in common ADHD comorbidities such as tics and Tourette's and marked anxiety	YES	NO	NO	Stimulants have been reported to exacerbate motor and phonic tics and Tourette's syndrome. Therefore, clinical evaluation for tics and Tourette's syndrome in children and their families should precede use of stimulant medications
Evidence of abuse potential	NO	YES	YES	YES
Controlled Drug	NO	YES	YES	YES
Ongoing monitoring	Cardiovascular status should be regularly monitored with BP and pulse recorded after each adjustment of			Growth, psychiatric, and cardiovascular status should be continually monitored (see also section 4.4). • Blood pressure and pulse should be recorded on a centile chart at each adjustment of dose and at least every six months.

	dose and then at least every 6 months. For paediatric patients the use of a centile chart is recommended. For adults, current reference guidelines for hypertension should be followed.			• Height, weight, and appetite should be recorded at least six-monthly with maintenance of a growth chart. • Development of *de novo* or worsening of pre-existing psychiatric disorders should be monitored at every adjustment of dose and then at least every six months and at every visit. Patients should be monitored for the risk of diversion, misuse, and abuse of Elvanse.

Appendix 1:Monitoring Standards (in line with current NICE guidance)

Parameter	Frequency of monitoring/medication	Action	By Whom
Efficacy	At each appointment and when doses are changed	Rating scales may be used	Specialist GP
Non- specific side effects	At each appointment	Review and monitor adverse effects, possible drug interactions, changes to medication regime, deteriorating behaviour. Communicate any relevant medical information to consultant/GP.	Specialist GP
Weight	Baseline, months 3 & 6, then 6 monthly thereafter	If evidence of weight loss, monitor refer back to specialist	Specialist – baseline and months 3& 6 GP – 6 monthly
Height	**No requirement for adults**		
Growth Development	**No requirement for adults**		
Pulse & Blood Pressure	Baseline, before and after dose change and then 6 monthly thereafter	Sustained resting tachycardia, arrhythmia or clinically significant high systolic blood pressure after two measurements, consider dose reduction and refer to specialist?	Specialist – baseline GP – around dose changes

Full Blood Count (FBC)	Baseline only if indicated(Methylphenidate)	Low threshold for repeat FBC rather than routine eg recurrent infections, purpuric rash or based on medical history	GP
Cardiovascular risk assessment	Baseline Duration of treatment?	To include: enquiry about a history of cardiac symptoms such as syncope (fainting), breathlessness ,palpitations, or congenital cardiac abnormalities,, family diagnosis of cardiovascular disease/sudden cardiac death before the age of 40 years	Specialist GP
ECG	Only if known or suspected history **(NB – it is a clinical decision whether or not an ECG is indicated)**	Referral to cardiologist	Specialist GP
Liver Function	Duration of treatment Atomoxetine)	Be vigilant for abdominal pain, unexplained nausea, malaise, darkening of urine or jaundice. Routine testing of LFTs not recommended	Specialist GP
Suicidal thinking and self- harming behaviour	During the initial months or after a change of dose (Atomoxetine)	Patients and carers should be warned about the potential for suicidal thinking and self-harming behaviour	Specialist GP Parents or carers
Risk assessment of substance misuse (diversion)	Baseline Duration of treatment	Enquire about known substance use in patient or that of close family member or carer Concerns about requests for frequent prescriptions deemed unnecessary should be communicated to consultant/specialist	Specialist GP

APPENDIX 2: DOSING TABLE

	Methylphenidate Immediate- release tablets	**Methylphenidate modified- release**			**Atomoxetine capsules**	**Lisdexamfetamine capsules**	**Dexamfetamine tablets**
Formulation	Ritalin® 10mg Medikinet®5mg 10mg ,20mg tablets	Equasym® XL 10,20,30mg capsules Immediate – release component (30% of dose), modified release component (70% of dose)	Concerta ® XL 18mg,,27mg, 36mg tablets Immediate – release component (22% of dose), modified release component (78% of dose)	Medikinet ® XL 5mg,10mg, 20mg, 30mg, 40mg capsules Immediate release component (50% of the dose) modified release component (50% of dose)	Strattera® 10mg,18mg, 25mg,40mg,60mg, 80mg, 100mg	Elvanse ® 30mg,50mg,70mg	Dexedrine®/ Dexamfetamine 5mg
Indication & Dose	**Unlicensed**: Initial: 5mg 2 or 3 times a day. Titrate against symptoms and side effects at weekly intervals. Max: 100mg daily in up to 4 divided doses	**Unlicensed:** Initial: As per immediate release tablets, Using an equivalent dose. If initiating with Equasym XL, 100mg daily(before breakfast) Max 100mg daily Usually given once daily, but not more than twice daily	**Unlicensed:** Initial: As per immediate release tablets, Using an equivalent dose. If initiating with Concerta XL, use 18mg daily, adjusted at weekly intervals. Max 108mg daily Usually given once daily, but not more than twice daily	**Unlicensed:** Initial: As per immediate release tablets, Using an equivalent dose. If initiating with Medikinet XL, use 10mg daily(with breakfast) Max: 100mg daily Usually given once daily, but	**Licensed only:** *As part of a comprehensive treatment programme for ADHD in adults who have shown clear benefit from treatment in childhood* 40mg/day minimum of 7 days, then titrate as required. Usual maintenance dose 80-100mg/day. Max dose 120mg (unlicensed)	**Licensed only:** *For ADHD in adults who have shown clear benefits from treatment in child hood.* Initial: 30mg once daily in the morning. Titrate according to response/tolerability. May be increased at weekly intervals by 20mg increments Max 70mg daily	**Unlicensed:** Initial: 5mg twice a day. Titrate against symptoms and side effects, increasing at weekly intervals as required. Max 60mg/day in 2-4 divided doses

				not more than twice daily	Once a day dose in the morning or 2 evenly divided doses (morning & late afternoon/early evening).If not tolerated/inadequate response		
Controlled Drug	Yes	Yes	Yes	Yes	No	Yes	Yes
Type of medication	Stimulant				Non stimulant	Stimulant	Stimulant
Physical monitoring	See Appendix 1 Agree monitoring schedule with GP and consultant/specialist for adults						
Interactions	For detailed information on interactions, cautions, contra-indications and side-effects, please refer to manufacturer's Summary of Product Characteristics (SPC) www.medicines.org.uk, and also current BNF www.bnf.org/bnf ,						
	Wafarin Anti- convulsants Selected tricyclic and serotonin reuptake inhibitors Alcohol				Monoamine oxidase inhibitors Anti- hypertensive drugs Salbutamol CYP2D6 inhibitors (SSRI's, quinidine,terbinafine)	Monoamine oxidase inhibitors Anti-hypertensive drugs Lithium carbonate Haloperidol	Monoamine oxidase inhibitors
Adverse effects	Gastro-intestinal symptoms (stomach ache, affected appetite, dry mouth ,nausea & vomiting) Psychiatric disorders (insomnia, abnormal behaviour, aggression, agitation,anxiety) Nervous system disorders (dizziness, drowsiness, headache, dyskinesia) Cardiac disorders (palpitations, tachycardia) Musculoskeletal and connective tissue disorders (arthralgia) Skin & subcutaneous tissue (rash, pruritus, urticarial, alopecia)				Gastro-intestinal Nervous system disorders Skin & subcutaneous tissue	Gastro-intestinal Skin & subcutaneous tissue	Gastro-intestinal Nervous system disorders Skin & subcutaneous tissue Cardiac disorders
Cautions	Psychiatric disorders, anxiety, agitation, tics, family history Tourette syndrome, drug or alcohol dependence, epilepsy, susceptibility to angle- closure glaucoma,				Cardiovascular (hypertension & Cerebrovascular disease Psychiatric disorders	Anorexia, history of cardiovascular disease or abnormalities, psychiatric disorders, aggressive behaviour,	Anorexia, mild hypertension, psychiatric disorders, aggressive behaviour, hostility during initiation, epilepsy, tics,

		Tics, history of seizures, aggressive behaviour, hostility or emotional lability, susceptible to angle-closure glaucoma	tics, Tourettes, susceptibility to angle closure glaucoma	Tourettes ,susceptibility to angle-closure glaucoma
Contra-indications	Severe depression, suicidal ideation, anorexia nervosa, psychosis, uncontrolled bipolar disorder ,hyperthyroidism, cardiovascular disease (including heart failure, cardiomyopathy ,severe hypertension and arrhythmias), structural cardiac abnormalities, phaeochromocytoma, vasculitis, cerebrovascular disorders	Phaeochromocytoma	Symptomatic cardiovascular disease (moderate to severe hypertension, advanced arteriosclerosis), hyperexcitability or agitation, hyperthyroidism	Cardiovascular disease (moderate to severe hypertension, structural cardiac abnormalities, advanced arteriosclerosis) hyperexcitability or agitation, hyperthyroidism, history of drug or alcohol abuse

References

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2. NICE pathway for treatment of Adults with ADHD; Sep 2013 http://pathways.nice.org.uk/pathways/attention-deficithyperactivity-disorder
3. BNF – May 2015
4. East London NHS Foundation Trust shared care guidelines for Methylphenidate, Atomoxetine, Dexamfetamine and LisDexamfetamine for ADHD in Children & Young People (6-17 years). 2014
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8. Barnet Enfield and Haringey Mental Health Trust shared care guidelines for Methylphenidate, Dexamfetamine and Atomoxetine in adults, 2010
9. Camden and Islington NHS Foundation Trust shared care guidelines for Methylphenidate ,Dexamfetamine, LisDexamfetamine and Atomoxetine in adults,2015
10. Electronic Medicines Compendium – access to Summaries of Product Characteristics of Atomoxetine, LisDexamfetamine, Methylphenidate http://www.medicines.org.uk/emc