Core Guidance to support oral antiepileptic prescribing in adults in Croydon CCG (Primary Care) in collaboration with Croydon Health Services (CHS)

Adapted from Core Guidance to support oral antipsychotic prescribing in adults in Croydon CCG (Primary Care) in collaboration with South London & Maudsley (SLaM), written by Manjeet Lundh

This document outlines the key responsibilities for CHS clinicians and local GPs to support appropriate and safe transfer of prescribing of oral antiepileptics from CHS to GPs in Croydon CCG.
Treatment with the first antiepileptic should be **initiated and at least 1 month prescribing in secondary care**. Prescribing for patients in primary care, including dosage titration of new agents is suitable provided the patients do not have the exclusions listed on page 1.

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1. PRESCRIBING EXCLUSIONS for oral antiepileptics

GPs should NOT accept responsibility for prescribing if the patient has any these exclusions:
Primary care prescribing of antiepileptics is **not suitable** for the following patients/situations:

1	Medicine is unlicensed or used for an indication outside of the license • Use of a licensed medicine for an unlicensed indication (with the exception of Buccolam used in those >18years) • Where dose exceeds the maximum licensed dose • Unlicensed medicine/indication not agreed by Croydon University Hospital CUH / Croydon Prescribing Committee CPC
2	Not stabilised on antiepileptic therapy (exception where individualised antiepileptic drug dosing schedule is provided)
3	No recent epilepsy review within the last 12 months in line with CG137 (if appropriate) – yearly review can be carried out by GP/Specialist Nurse Neurology Specialist
4	Children (below 18 years of age)
5	Pregnancy and no advice given or documented
6	Medicine contravenes NICE guidelines CG137
7	Medicine not approved for use in Croydon: • Not recommended by CPC • Not yet considered by CPC • Hospital only recommendation by CPC or South West London Medicines Commissioning Group

2. MINIMUM DATASET OF INFORMATION

Information will be provided to the GP based on a minimum dataset agreed between CHS and Croydon CCG. **GPs should only accept responsibility for prescribing if there are no exclusions and on receipt of information contained within the minimum dataset** which may be presented using the

1	No exclusions for transfer of prescribing responsibility to primary care (see prescribing exclusions above)
2	Individualised anti-epileptic treatment strategy. The antiepileptic treatment strategy should be individualised according to seizure type, epilepsy syndrome, co-medication and co-morbidity: • Titration – initiation of first antiepileptic and first month of prescribing will be carried out by the specialist, subsequent dosage changes or the addition of other anti-epileptics can be done by GPs on the advice of the specialist on receipt of an individualised drug treatment strategy. • Maintenance - Stable disease • Relapse Plan – what to do if a stable patient has a seizure • Prolonged or repeated seizures
3	Monitoring - baseline tests and on-going monitoring
4	Side Effects - recognition and management
5	Review Plan – NICE CG137 advises that a review should be carried out at least yearly by either a generalist (GP) or a specialist (Specialist Nurse or Neurology Specialist), depending on how well the epilepsy is controlled and/or the presence of lifestyle issues
6	Special considerations for women and girls of childbearing potential – compliance with MHRA safety recommendations on valproate and pregnancy. https://www.gov.uk/guidance/valproate-use-by-women-and-girls
7	Patient Information (where appropriate an advice sheet will be given / sent to the patient): epilepsy in general, diagnosis and treatment options, medication and side effects, seizure type(s), triggers and seizure control, management and self-care, risk management, first aid, safety and injury prevention, psychological issues, social security benefits and social services, insurance issues, employment and independent living, importance of disclosing epilepsy at work (if relevant), road safety and driving, prognosis, sudden death in epilepsy, status epilepticus, lifestyle leisure and social issues, family planning and pregnancy, voluntary organisations and support groups
8	Care Plan – agreed between the person, family and/or carers where appropriate and primary care and secondary care providers. Should include lifestyle issues as well as medical issues.
9	Contact Information – *To be completed*
10	Meets work plan criteria - Prescribing in line with QIPP initiatives – See Appendix 6 : Generic Prescribing of Lamotrigine, Topiramate and Levetiracetam

a) Transfer of care information template

Transfer of care information template for patients

under CHS to General Practice

COMMUNICATION BETWEEN CHS and GP

The following is an agreed minimum dataset of information that will be provided by the CHS Neurology to the GP specific to each individual patient. It is designed to be shared routinely throughout the course of treatment and upon discharge from CHS when care transfers to the GP. Complete and share with the GP at least annually following review.

This communication is about: (tick relevant box)

For GP information (patient and prescribing under CHS, no action by GP) ☐

Transfer of prescribing (GP to prescribe antiepileptic medication, (whilst patient remains under CHS Neurology Team) ☐

Discharge of patient from CHS Neurology Team ☐
(transfer of care to GP, GP to prescribe antiepileptic medication, GP to review yearly)

Attention to receiving GP
– if you would like to discuss any aspects of the plan/information, please contact:

Epilepsy Specialist Nurse ……..or Consultant……

Date: ***Completed by: (sign/print/position)***

Contact Information:…….

Requests to GP
Please list here any requests for the receiving GP to complete:

Demographic details	
Patient	
Name	
DOB	
Address	
Phone number	
NHS Number (if known)	
Epilepsy Diagnosis (ICD-10 code): Presenting Epilepsy Syndrome (or other recognised codes)	G40 Epilepsy and recurrent seizures G41.Status epilepticus

Individualised antiepileptic medication prescribing and monitoring arrangements (changes to be made in BOLD). *Note: GP to be aware of exclusion criteria for transfer of prescribing or discharge of patient from CHS. Also on intranet via:*	
Current Medication	*Specify if any unlicensed indications*
Individualised antiepileptic treatment strategy Titration Plan – *initiation of first anti-epileptic and first month of prescribing will be carried out by the specialist, subsequent dosage changes or the addition of other anti-epileptics can be done by GPs on the advice of the specialist on receipt of an individualized drug treatment strategy.* Maintenance Plan – *ongoing dosage recommendations for stable disease* Relapse Plan – what to do if a stable patient has a seizure Prolonged or Recurrent Seizures – *only prescribe buccal midazolam or rectal diazepam for use in the community in adults who have had a previous episode of prolonged (5mins) or significant serial convulsive seizures. Administer buccal midazolam as first line treatment, administer rectal diazepam if preferred or if buccal midazolam is not available* *Potential withdrawal of pharmacological treatment (where appropriate) – the decision to continue or withdraw medication should be taken by the patient, family and/or carers as appropriate, and the specialist after a full discussion of the risks and benefits of withdrawal. Withdrawal will be managed by, or be under the guidance of the specialist*	*Outline any dosage titrations using table appendix 1. Buccal midazolam protocol appendix 2 Buccolam*
Medication monitoring arrangements	*Include any monitoring e.g. physical health monitoring requirements; blood monitoring, drug plasma levels; When not to do drug monitoring*
Side effect management *Note: only transfer prescribing to GP if side effects are controlled*	*Include side effects that have/are occurring; any medication prescribed to manage side effects; medication prescribed previously which have caused side effects; medication to be avoided. Maintain a high level of vigilance for treatment emergent adverse effects (for example bone health issues and neuropsychiatric issues). Consider the possibility of adverse cognitive and behavioural effects of antiepileptics in adults with learning disabilities*
Recommendations for Patient Review - *NICE CG137 advises that a review should be carried out at least yearly by either a generalist or a specialist, depending on how well the epilepsy is controlled and/or the presence of lifestyle issues*	*Include recommendation for yearly review by GP/Specialist Nurse Neurology Specialist*

A succinct comprehensive CLINICAL history that includes:	
Support and interventions given to patient that is inclusive of	
Investigations; *Electroencephalogram (EEG if done), neuroimaging, neurological assessment*	
Previous antiepileptic treatments; *Response achieved,*	
Physical Health Information (not all tests will be clinically indicated, specialist to complete where relevant. Core Information will be the responsibility of the GP - include results/dates and if tests not undertaken)	
Physical Health diagnosis (e.g. diabetes, epilepsy) (with ICD code)	
Weight	
Waist circumference	
Pulse	
BP	
Smoking	*Indicate if stop smoking service has been discussed with patient and plans to stop smoking*
Alcohol consumption	
Non-prescription medication	
Ongoing physical health management and treatment needs	*Include evidence of signposting to combined healthy eating and physical activity programme*
Results of investigations	*Give details where clinically indicated and dates if known. N.B. regular blood test monitoring in adults is not recommended as routine, and should be done only if clinically indicated or recommended by the specialist (blood monitoring FBC, U&Es, liver enzymes, Vitamin D levels, and other tests of bone metabolism every 2-5 years for adults is suggested for those on enzyme inducing medicines- DEXA if medically indicated at 5 years, those on enzyme inducing drugs only*
FBC	
U&Es	
LFT	
Lipid profile	
Fasting glucose	
HbA1c	
Vitamin D + / - serum folate	
Drug Levels (+ if medically indicated): Phenytoin trough (at 1 year) Lamotrigine (may be indicated in women with epilepsy)	
Additional bloods taken (specify) eg. TSH	
Additional investigations undertaken (eg. EEG, ECG,MRI or DEXA scan	

Patient Goals and Attitude	
Appropriate Information has been discussed with the patient	*Includes (where appropriate) Prescription charge indemnity form, Freedom Pass (if the patient cannot legally drive), disabled person's railcard, epilepsy app from Epilepsy Action or National Society for Epilepsy*
Special considerations for women and girls of childbearing potential	*Includes; contraception and fertility considerations may need to be adjusted, MHRA safety recommendations on sodium valproate and pregnancy https://www.gov.uk/guidance/valproate-use-by-women-and-girls*
Date of next appointment with specialist (if known/if appropriate)	*NICE CG137 advises that a review should be carried out at least yearly by either a generalist (GP) or a specialist (Specialist Nurse or Neurology Specialist), depending on how well the epilepsy is controlled and/or the presence of lifestyle issues*
Patient given relevant CHS Neurology contact details	
Additional Contact Information	
Next of kin/carer (name) – *update in general practice*	
Relationship	
Contact details (address; phone number; email)	
CHS NEUROLOGY CONTACT DETAILS Name of Consultant & phone number	
Named Specialist Nurse	
Name of Team/Service	
Phone number	
Email	
Who and how to contact for clinical and medication advice (add additional details)	
Who to contact in an emergency – In hours	
Who to contact in an emergency – Out of hours	
CHS Medicines Information Support Line:	

b) Transfer of care information letter format

If the minimum dataset is presented in the form of a clinic letter, the information should be presented under the highlighted headings: (including dates/test results where relevant):

Reason for the communication (as part of transfer document heading)

- **For GP information only** (where patient management and prescribing remains under CHS and no action is required by the GP)
- or **transfer of prescribing of antiepileptic** (whilst patient remains under the CHS Neurology Team)
- or **patient is discharged from the CHS Neurology team and future management and prescribing will be undertaken by the GP**

Patient demographic details (including epilepsy diagnosis, presenting epilepsy syndrome)
G40 Epilepsy and recurrent seizures (or other recognised codes)
G41 Status epilepticus

Individualised antiepileptic medication prescribing and monitoring arrangements

- **Current medication**
- **Individualised antiepileptic treatment strategy**:*Outline any dosage titrations using table appendix 1. Buccal midazolam protocol appendix 2 Buccolam*
  Titration Plan – *initiation of first anti-epileptic and first month of prescribing will be carried out by the specialist, subsequent dosage changes or the addition of other anti-epileptics can be done by GPs on the advice of the specialist on receipt of an individualized drug treatment strategy.*
  Maintenance Plan – *ongoing dosage recommendations for stable disease*
  Relapse Plan – *what to do if a stable patient has a seizure*
  Prolonged or Recurrent Seizures – *only prescribe buccal midazolam or rectal diazepam for use in the community in adults who have had a previous episode of prolonged or significant serial convulsive seizures. Administer buccal midazolam as first line treatment, administer rectal diazepam if preferred or if buccal midazolam is not available*
  Potential withdrawal of pharmacological treatment (where appropriate) – *the decision to continue or withdraw medication should be taken by the patient, family and/or carers as appropriate, and the specialist after a full discussion of the risks and benefits of withdrawal. Withdrawal will be managed by, or be under the guidance of the specialist*
- **Medication monitoring arrangements** *Include any monitoring e.g. physical health monitoring requirements; blood monitoring, drug plasma levels; When not to do drug monitoring*
- **Side effect management** (only transfer prescribing where side effects are controlled) *Include side effects that have/are occurring; any medication prescribed to manage side effects; medication prescribed previously which have caused side effects; medication to be avoided. Maintain a high level of vigilance for treatment emergent adverse effects (for example bone health issues and neuropsychiatric issues). Consider the possibility of adverse cognitive and behavioural effects of antiepileptics in adults with learning disabilities*
- **Recommendations for Patient Review** *CG137 advises that a review should be carried out at least yearly by either a generalist or a specialist, depending on how well the epilepsy is controlled and/or the presence of lifestyle issues: Include recommendation for yearly review by GP/Specialist Nurse/Neurology Specialist*

Clinical History

Support and interventions given to patient

- Investigations; Electroencephalogram (EEG), neuroimaging, neurological assessment
- Previous antiepileptic treatments; Response achieved,

Physical Health Information

Not all tests will be clinically indicated, specialist to complete where relevant. Core Information will be the responsibility of the GP - include results/dates and if tests not undertaken)

include details where relevant including if specific parameters not performed/undertaken

- Physical health diagnosis
- Weight and waist circumference
- Pulse/BP

- Smoking status and advice offered regarding stop smoking/restarting smoking and impact on current medication
- Alcohol consumption/non-prescription medicines
- Nutritional status – evidence of signposting to physical activity/diet advice

Results of investigations

include if test taken, where relevant, with date and result

(note: not all tests will be clinically necessary and will be individualised for each patient - *blood monitoring FBC, U&Es, liver enzymes, Vitamin D levels, and other tests of bone metabolism every 2-5 years for adults is suggested for those on enzyme inducing medicines - DEXA if medically indicated at 5 years, those on enzyme inducing drugs only).*

- FBC
- U&Es
- LFTs
- Lipid profile
- Fasting glucose
- HbA1c
- Vitamin D + / - serum folate
- Drug Levels (if medically indicated)
  - Phenytoin trough (at 1 year)
  - Lamotrigine (may be indicated in women with epilepsy)
- Additional investigations e.g. EEG, ECG, MRI or DEXA scan
- Additional bloods taken – specify e.g. TSH

Patient Goals and Attitude

- Appropriate Information has been discussed with the patient
- Special considerations for women and girls of childbearing potential (See appendix 3) *and fertility considerations*
- Date of next appointment with specialist (if known/appropriate) *NICE CG137 advises that a review should be carried out at least yearly by either a generalist (GP) or a specialist (Specialist Nurse or Neurology Specialist), depending on how well the epilepsy is controlled and/or the presence of lifestyle issues*
- Patient given relevant CHS Neurology contact details

Additional contact information

- Next of kin/carer, relationship, contact details

CHS Neurology contact details

- consultant & phone number
- specialist nurse & phone number
- email addresses
- emergency contact during and out of hours
- CHS Medicines Information Support Line
- Additional GP Information to support the GP to prescribe oral antiepileptic via link to intranet

3. PRESCRIBING RESPONSIBILITIES GP responsibility generic AEDs

Neurology Specialist/Secondary Care	Primary Care/GP
Initiate and 1 month prescribing for patient on oral antiepileptic	Confirm letter/transfer of care information template received and contains the minimum dataset prior to prescribing oral antiepileptic
Ensure patient does not have any exclusions prior to requesting GP to prescribe antiepileptic	Confirm patient does not have any exclusions prior to prescribing antiepileptic, otherwise discuss with specialist
Use standard letter format or transfer of care information template to ask GP to take over prescribing of oral antiepileptic – ensuring minimum information included	Confirm all necessary information included in transfer of information prior to prescribing oral antiepileptic, otherwise discuss with specialist
Ensure contact details given to GP for any further discussion around patient management and prescribing of antiepileptic	GP to contact the CHS Neurology Team if not willing to take over prescribing of oral antiepileptic
Ensure baseline monitoring tests (where clinically appropriate) completed and communicated to GP in standard letter or transfer of care information template	Tracked monitoring: • Scan letter onto patient medical record and ensure patient is on the practice epilepsy register • Titration, maintenance and monitoring requirements as advised by specialist following the Individualised antiepileptic treatment strategy • Annual review if patient is discharged from CHS Neurology Service
Discuss continuing or withdrawal of antiepileptic treatment with adults who have been seizure free for at least 2 years. Oversee withdrawal / discontinuation of therapy NB. Not for primary generalised epilepsy syndromes or for those patients wishing to continue	Withdrawal of antiepileptic medication under the guidance of the Neurology specialist. Contact specialist if concerns around seizure recurrence for advice on reversing last dose reduction.
Write to GP following every appointment using standard letter format or transfer of care information template	GP to contact and discuss with specialist if information in Neurology correspondence is incomplete and to consider reporting as an Amber Alert if issues are still unresolved

NICE Refs:

- The epilepsies: the diagnosis and management of the epilepsies in adults and children in primary and secondary care, NICE Clinical Guideline 137, December 2013

Appendix 1 Individualised antiepileptic treatment strategy - Titration Plan

CHS Neurology contact details	
Name of Consultant & phone number	
Named Specialist Nurse & phone number	
Clinic date:	Next clinic appointment:

Patient details			
Name		DOB	
Address		Phone number	
NHS Number (if known)		Epilepsy Diagnosis (ICD-10 code): Presenting Epilepsy Syndrome	

Initial Dosing Information

Drug:	**Week 1**	**Week 2**	**Week 3**	**Week 4**
Date:				
AM dose				
Teatime dose				
PM dose				

Further dosing increases (if the patient has warning of a seizure or a seizure) Tablets can be increased but no quicker than **ONCE every TWO weeks**

	Increase 1	**Increase 2**	**Increase 3**	**Increase 4**	**Increase 5**	**Increase 6**	**Increase 7**	**Increase 8**
Date:								
Morning AM dose								
Evening PM dose								

Appendix 2

Buccal Midazolam Information Sheet (Adults and Children)

Working in Partnership with Croydon Healthcare Services (CHS)

Croydon Prescribing Committee: RECOMMENDATION
Buccal midazolam (Buccolam® brand only) is recommended for prescribing in primary and secondary care for children, young people and adults who have had a previous episode of prolonged or serial convulsive seizures. Buccolam® pre-filled oral syringes are the recommended product of choice for use in primary and secondary care.

CPC has agreed that it is appropriate for GPs to prescribe Buccolam® following initiation by a Consultant Paediatrician or Neurologist. A minimum of 1 month supply of medication will be provided by the initiating consultant

A decision to switch existing patients from other brands of buccal midazolam to Buccolam® should only be taken after a discussion with the patient / carer. **Other unlicensed buccal midazolam products remain "Hospital only"**

The following conditions apply:

- **Hospital specialist clinicians will be responsible for initiating Buccolam® and transferring patients from the Epistatus® or other unlicensed buccal midazolam preparations to the Buccolam® brand. By agreement, the GPs will then continue prescribing. A standard letter template should be used for this request.**
- At initiation, hospital specialist clinicians will ensure that patients/carers/parents understand their treatment, know how to administer the pre-filled syringe and who to call in the event of an acute prolonged seizure.
- Buccolam® for use in the community will only be prescribed for patients who have had a previous episode of prolonged (>5 minutes) or serial convulsive seizures (3 or more in one hour).
- For infants between 3-6 months of age treatment should be in a hospital setting where monitoring is possible and resuscitation equipment is available. Prescribing Buccolam® for this group is "Hospital only".
- Administration of Buccolam® will be in line with a patient specific individual agreed treatment plan and care plan. Carers should only administer a single dose of Buccolam® unless instructed to do so under medical advice or a repeat dose is stated on the patient specific care plan.
- Annual Reviews: Paediatric patients prescribed Buccolam® should have a regular structured review with the hospital specialist. The interval between reviews should be agreed between the patient, their family and/or carers as appropriate, and the specialist, but is likely to be between 3 and 12 months depending on seizure control. In adults this review should be carried out at least yearly by either a GP or specialist, depending on how well the epilepsy is controlled and/or the presence of specific lifestyle issues (NICE CG137).
- Following review, the hospital specialist will send a letter to the GP ensuring current Buccolam® dose, most recent blood results and frequency of monitoring are stated, including an updated treatment plan if necessary.

Special Instructions for Prescribing

- **Prescribing MUST be by brand to prevent errors** and hospital specialists should use the Buccolam® dosing schedule when transferring patients from unlicensed buccal midazolam products.

- **Buccolam® (5mg/ml) is half the strength of Epistatus® oral liquid (10mg/ml) and other unlicensed preparations.** Due to the different strengths between the products, Buccolam® will deliver an equivalent dose in a larger volume of solution. If this presents a problem with spitting or dribbling, half the volume can be given slowly into one side of the mouth and then the other half given slowly into the other side of the mouth.

- Prescribe dose in mg and also amount of ml(s) to be administered. The full contents of prefilled oral syringes should be administered. Buccolam® prefilled syringe barrel are covered with a label and part doses cannot be given only full syringes can be administered.

- Midazolam is a controlled drug (CD) therefore it is important for the prescriber to specify the correct strength, dose and the **total quantity to be written in words and figures**.

Please note that Buccolam® oromucosal solution is only supplied as pre-filled syringes, no bottle preparation is available. Each box of Buccolam® contains 4 pre-filled syringes. The pre-filled syringes are available in different doses of midazolam.

Please see the summary table below:

Age range	**Dose**	**Label colour**
3 to 6 months (hospital setting)	2.5mg in 0.5ml	Yellow
> 6 months to < 1 year	2.5mg in 0.5ml	Yellow
1 year to < 5 years	5 mg in 1ml	Blue
5 years to < 10 years	7.5 mg in 1.5ml	Purple
10 years to < 18 years	10 mg in 2ml	Orange
Adults > 18 years	10mg unlicensed indication	Orange

NB//: for more details please refer to the Buccolam® Summary of Product Characteristics (SPC) via www.medicines.org.uk

Specialist Contacts

Name	Contact Details
CHS Consultant Neurologists: Dr Bridget Macdonald	bridget.macdonald@nhs.net Tel: Direct line (020) 8401 3098 Tel: Direct line (020) 8401 4003 Direct Fax (020) 8401 3570
Dr Fred Schon	frederick.schon@nhs.net
Dr Arani Nitkunan Dr Franchesca Mastrolilli	anitkunan@nhs.net f.mastrolilli@nhs.net
Community Epilepsy Nurses: Caitlin Smyth Medina Southam Neurology Nurse: Ajay Boodhoo	 csmyth1@nhs.net medina.pillay@nhs.net ajayboodhoo@nhs.net
CHS Paediatric Consultants: Dr Theo Fenton Dr John Chang	 theo.fenton@nhs.net jylchang@nhs.net
CHS Paediatricians Dr Joy Okpala Dr Jill Brock	020 8274 6374 gillian.brock@nhs.net
Children's Hospital at Home Team	Tel: (020) 8274 6428 Fax: (020) 8274 6420
School Nursing Team	Loretta McGurry (Health Visiting / School Nursing Operational Manager) – (020) 8274 6443 Charlotte Jones (Lead Nurse) – (020) 8680 4810

Appendix 3 Anti-epileptic drug (AED) options by seizure type NICE CG137

Seizure type	First-line AEDs	Adjunctive AEDs	Other AEDs may be considered on referral to tertiary care	Do not offer AEDs (may worsen seizures)
Generalised tonic–clonic	Carbamazepine Lamotrigine Oxcarbazepine[a] Sodium valproate	Clobazam[a] Lamotrigine Levetiracetam Sodium valproate Topiramate		(If there are absence or myoclonic seizures, or if juvenile myoclonic epilepsy suspected) Carbamazepine Gabapentin Oxcarbazepine Phenytoin Pregabalin Tiagabine Vigabatrin
Tonic or atonic	Sodium valproate	Lamotrigine[a]	Rufinamide[a] Topiramate[a]	Carbamazepine Gabapentin Oxcarbazepine Pregabalin Tiagabine Vigabatrin
Absence	Ethosuximide Lamotrigine[a] Sodium valproate	Ethosuximide Lamotrigine[a] Sodium valproate	Clobazam[a] Clonazepam Levetiracetam[a] Topiramate[a] Zonisamide[a]	Carbamazepine Gabapentin Oxcarbazepine Phenytoin Pregabalin Tiagabine Vigabatrin
Myoclonic	Levetiracetam[a] Sodium valproate Topiramate[a]	Levetiracetam Sodium valproate Topiramate[a]	Clobazam[a] Clonazepam Piracetam Zonisamide[a]	Carbamazepine Gabapentin Oxcarbazepine Phenytoin Pregabalin Tiagabine Vigabatrin
Focal	Carbamazepine Lamotrigine Levetiracetam Oxcarbazepine Sodium valproate	Carbamazepine Clobazam[a] Gabapentin[a] Lamotrigine Levetiracetam Oxcarbazepine Sodium valproate Topiramate	Eslicarbazepine acetate[a] Lacosamide Phenobarbital Phenytoin Pregabalin[a] Tiagabine Vigabatrin Zonisamide[a] Brivaracetam	
Prolonged or repeated seizures and convulsive status epilepticus in the community	Buccal midazolam Rectal diazepam[b] Intravenous lorazepam			

[a] At the time of publication (January 2012) this drug did not have UK marketing authorisation for this indication and/or population Informed consent should be obtained and documented. [b] At the time of publication (January 2012), this drug did not have UK marketing authorisation for this indication and/or population. Informed consent should be obtained and documented in line with normal standards in emergency care.

Appendix 4 Anti-epileptic drug (AED) options by epilepsy syndrome NICE CG137

Epilepsy syndrome	First-line AEDs	Adjunctive AEDs	Other AEDs that may be considered on referral to tertiary care	Do not offer AEDs (may worsen seizures)
Childhood absence epilepsy or other absence syndromes	Ethosuximide Lamotrigine[a] Sodium valproate	Ethosuximide Lamotrigine[a] Sodium valproate	Clobazam[a] Clonazepam Levetiracetam[a] Topiramate[a] Zonisamide[a]	Carbamazepine Gabapentin Oxcarbazepine Phenytoin Pregabalin Tiagabine Vigabatrin
Juvenile absence epilepsy or other absence syndromes	Ethosuximide Lamotrigine[a] Sodium valproate	Ethosuximide Lamotrigine[a] Sodium valproate	Clobazam[a] Clonazepam Levetiracetam[a] Topiramate[a] Zonisamide[a]	Carbamazepine Gabapentin Oxcarbazepine Phenytoin Pregabalin Tiagabine Vigabatrin
Juvenile myoclonic epilepsy	Lamotrigine[a] Levetiracetam[a] Sodium valproate Topiramate[a]	Lamotrigine[a] Levetiracetam Sodium valproate Topiramate[a]	Clobazam[a] Clonazepam Zonisamide[a]	Carbamazepine Gabapentin Oxcarbazepine Phenytoin Pregabalin Tiagabine Vigabatrin
Epilepsy with generalised tonic–clonic seizures only	Carbamazepine Lamotrigine Oxcarbazepine[a] Sodium valproate	Clobazam[a] Lamotrigine Levetiracetam Sodium valproate Topiramate		
Idiopathic generalised epilepsy	Lamotrigine[a] Sodium valproate Topiramate[a]	Lamotrigine[a] Levetiracetam[a] Sodium valproate Topiramate[a]	Clobazam[a] Clonazepam Zonisamide[a]	Carbamazepine Gabapentin Oxcarbazepine Phenytoin Pregabalin Tiagabine Vigabatrin
Infantile spasms not due to tuberous sclerosis	Discuss with, or refer to, a tertiary paediatric epilepsy specialist Steroid (prednisolone or tetracosactide[a]) or vigabatrin			
Infantile spasms due to tuberous sclerosis	Discuss with, or refer to, a tertiary paediatric epilepsy specialist Vigabatrin or steroid (prednisolone or tetracosactide[a])			
Benign epilepsy with centrotemporal spikes	Carbamazepine[a] Lamotrigine[a] Levetiracetam[a] Oxcarbazepine[a] Sodium valproate	Carbamazepine[a] Clobazam[a] Gabapentin[a] Lamotrigine[a] Levetiracetam[a] Oxcarbazepine[a] Sodium valproate Topiramate[a]	Eslicarbazepine acetate[a] Lacosamide[a] Phenobarbital Phenytoin Pregabalin[a] Tiagabine[a] Vigabatrin[a] Zonisamide[a]	

Epilepsy syndrome	First-line AEDs	Adjunctive AEDs	Other AEDs that may be considered on referral to tertiary care	Do not offer AEDs (may worsen seizures)
Panayiotopoulos syndrome	Carbamazepine[a] Lamotrigine[a] Levetiracetam[a] Oxcarbazepine[a] Sodium valproate	Carbamazepine[a] Clobazam[a] Gabapentin[a] Lamotrigine[a] Levetiracetam[a] Oxcarbazepine[a] Sodium valproate Topiramate[a]	Eslicarbazepine acetate[a] Lacosamide[a] Phenobarbital Phenytoin Pregabalin[a] Tiagabine[a] Vigabatrin[a] Zonisamide[a]	
Late-onset childhood occipital epilepsy (Gastaut type)	Carbamazepine[a] Lamotrigine[a] Levetiracetam[a] Oxcarbazepine[a] Sodium valproate	Carbamazepine[a] Clobazam[a] Gabapentin[a] Lamotrigine[a] Levetiracetam[a] Oxcarbazepine[a] Sodium valproate Topiramate[a]	Eslicarbazepine acetate[a] Lacosamide[a] Phenobarbital Phenytoin Pregabalin[a] Tiagabine[a] Vigabatrin[a] Zonisamide[a]	
Dravet syndrome	Discuss with, or refer to, a tertiary paediatric epilepsy specialist Sodium valproate Topiramate[a]	Clobazam[a] Stiripentol – mainly used in children		Carbamazepine Gabapentin Lamotrigine Oxcarbazepine Phenytoin Pregabalin Tiagabine Vigabatrin
Continuous spike and wave during slow sleep	Refer to a tertiary paediatric epilepsy specialist			
Lennox–Gastaut syndrome	Discuss with, or refer to, a tertiary paediatric epilepsy specialist Sodium valproate	Lamotrigine	Felbamate[a] Rufinamide Topiramate	Carbamazepine Gabapentin Oxcarbazepine Pregabalin Tiagabine Vigabatrin
Landau–Kleffner syndrome	Refer to a tertiary paediatric epilepsy specialist			
Myoclonic-astatic epilepsy	Refer to a tertiary paediatric epilepsy specialist			

[a] At the time of publication (January 2012), this drug did not have UK marketing authorisation for this indication and/or population Informed consent should be obtained and documented.

Appendix 5 Generic Prescribing of Lamotrigine, Topiramate and Levetiracetam

The antiepileptic drugs lamotrigine, topiramate and levetiracetam are now available as generics which are significantly cheaper than the branded products.

For patients taking lamotrigine, topiramate and levetiracetam, current evidence[1] supports switching from branded to generic products. Other antiepileptic drugs should continue to be prescribed by brand.
The change to a generic product should be discussed with the patient and the change made with the patient's agreement.

Contraindications to switching from branded to generic prescribing are:

- previous sensitivity to small dose changes
- experience of previous unsuccessful attempts to switch
- currently taking a sustained or modified release preparation of the drug
- current seizure control is good and serious consequences from a change in seizures (e.g. loss of driving licence)
- on a ketogenic diet
- allergic to excipients in the generic version.

A recent loss of seizure control, or the prescribing of additional or alternative antiepileptic drugs, is an opportunity to move to a generic version. Similarly, patients who plan to stop driving for 6 months may also be appropriate for switching to generic.

References

1: Consensus document "The Use of Generic Anti-Epileptics Drugs in Patients with Epilepsy" published in November 2012 by United Kingdom Clinical Pharmacists Association (UKCPA): Neurosciences Group and Pharmaceutical Market Support Group (PMSG): Generics Sub-Group.

Agreed by CPC May 2013, reviewed May 2019 Review date May 2021

INFORMATION SHEET
Perampanel (Fycompa®)

As adjunctive treatment of partial-onset seizures with or without secondarily generalised seizures in adult and adolescent patients from 12 years of age with epilepsy.
As adjunctive treatment of primary generalised tonic-clonic seizures in adult and adolescent patients from 12 years of age with idiopathic generalised epilepsy

Croydon Prescribing Committee Draft Recommendation: Perampanel is recommended for restricted use for refractory patients who have not tolerated other options, initiation and 1 month prescribing by Consultant Neurologist followed by continuation in primary care. Following: Core Guidance to support oral antiepileptic prescribing in adults in Croydon CCG (Primary Care) in collaboration with Croydon Health Services (CHS)

Dose and Administration:
The maximum licensed dose is 12mg
Perampanel should be taken as a single dose at bedtime. It may be taken with or without food. The tablet should be swallowed whole with a glass of water (the tablets cannot be split accurately as there is no break line).
Partial Onset Seizures
Initiate at 2 mg/day, increase based on clinical response and tolerability by increments of 2 mg (either weekly or every 2 weeks as per half-life considerations – ***on advice of Consultant Neurologist***) to a maintenance dose of 4 mg/day to 8 mg/day. Depending upon individual clinical response and tolerability at a dose of 8 mg/day, the dose may be increased by increments of 2 mg/day to 12 mg/day.

Primary Generalised Tonic-Clonic Seizures
Initiate at a dose of 2 mg/day, increase based on clinical response and tolerability by increments of 2 mg (either weekly or every 2 weeks, as per half-life considerations – ***on advice of Consultant Neurologist***) to a maintenance dose of up to 8 mg/day. Depending upon individual clinical response and tolerability at a dose of 8 mg/day, the dose may be increased up to 12 mg/day, which may be effective in some patients.

When withdrawing perampanel, gradually reduce dose. However, due to its long half-life and subsequent slow decline in plasma concentrations, perampanel can be discontinued abruptly if absolutely needed.

Single missed dose: As perampanel has a long half-life, the patient should wait and take their next dose as scheduled.
If more than 1 dose has been missed – ***seek advice from Consultant Neurologist***
For a continuous period of 1-3 weeks depending on concomitant medicines, consideration should be given to re-starting treatment from the last dose level. If a patient has discontinued perampanel for a continuous period of more than 1-3 weeks, it is recommended that initial dosing recommendations given above should be followed.

Renal impairment
Dose adjustment is not required in patients with mild renal impairment. Use in patients with moderate or severe renal impairment or patients undergoing haemodialysis is not recommended.

Hepatic impairment
Perampanel dosing for patients with mild and moderate impairment should not exceed 8 mg. Use in patients with severe hepatic impairment is not recommended.

Adverse Effects
Very common (>/=10%): Dizziness and somnolence. Common CNS effects (1-10%) fatigue, headache, ataxia, aggression, anxiety, vertigo, irritability and falls – see SPC for full list of adverse effects. The nature and frequency of adverse events was dose related, occurred mainly in the titration period and appeared to be comparable to those of other antiepileptic drugs. The prevalence of adverse effects decreased with treatment duration.

INFORMATION SHEET
Perampanel (Fycompa®)

Special warnings and precautions for use
Suicidal ideation: Suicidal ideation and behaviour have been reported in patients treated with anti-epileptic medicinal products in several indications. A meta-analysis of randomised placebo-controlled trials of anti-epileptic medicinal products has also shown a small increased risk of suicidal ideation and behaviour. The mechanism of this risk is not known and the available data do not exclude the possibility of an increased risk for perampanel. Therefore, patients should be monitored for signs of suicidal ideation and behaviours and appropriate treatment should be considered. Patients (and caregivers of patients) should be advised to seek medical advice should signs of suicidal ideation or behaviour emerge.
Effects on ability to drive and operate machinery: Perampanel may cause dizziness and somnolence and therefore may influence the ability to drive or use machines
Falls: There appears to be an increased risk of falls, particularly in the elderly; the underlying reason is unclear
Aggression: Aggressive and hostile behaviour has been reported in patients receiving perampanel therapy. In perampanel-treated patients in clinical trials, aggression, anger and irritability were reported more frequently at higher doses. Most of the reported events were either mild or moderate and patients recovered either spontaneously or with dose adjustment. However, thoughts of harming others, physical assault or threatening behaviour were observed in some patients (< 1% in perampanel clinical studies). Patients and caregivers should be counselled to alert a healthcare professional immediately if significant changes in mood or patterns of behaviour are noted. The dosage of perampanel should be reduced if such symptoms occur and should be discontinued immediately if symptoms are severe.
Abuse potential: Caution should be exercised in patients with a history of substance abuse and the patient should be monitored for symptoms of perampanel abuse.
Pregnancy and Breastfeeding: Perampanel is not recommended during pregnancy. It is not known whether perampanel is excreted in human milk, a risk to the newborns/infants cannot be excluded. A decision must be made whether to discontinue breastfeeding or to discontinue/abstain from perampanel therapy taking into account the benefit of breastfeeding for the child and the benefit of therapy for the woman.
Oral contraceptives: At doses of 12 mg/day perampanel may decrease the effectiveness of progestative-containing hormonal contraceptives; in this circumstance additional non-hormonal forms of contraception are recommended when using perampanel).

Drug Interactions: Enzyme inducers (carbamazepine, phenytoin, oxcarbazine) may increase perampanel clearance and consequently to decrease plasma perampanel concentrations. Patient's response should be monitored and this effect should be taken into account and managed when adding or withdrawing these anti-epiletic drugs from a patient's treatment regimen - ***seek advice from Consultant Neurologist***

Monitoring: No specific monitoring is required other than seizure control.

Contact Information:

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