

1 **APPENDIX K**2 **Pharmacological Management**3 **1.1 Drug options by seizure type and syndrome**4 **Table 1 Drug options by seizure type**

Seizure type	First-line drugs	Adjunctive drugs	Other drugs that may be considered	Drugs to be avoided (may worsen seizures)
Generalised tonic-clonic	Carbamazepine lamotrigine oxcarbazepine sodium valproate	Clobazam Lamotrigine Levetiracetam topiramate		tiagabine vigabatrin
Absence	Ethosuximide sodium valproate	lamotrigine		Carbamazepine Oxcarbazepine Phenytoin tiagabine vigabatrin
Myoclonic	sodium valproate	levetiracetam	Clobazam Clonazepam Piracetam zonisamide (after discussion with, or referral to a tertiary epilepsy specialist)	
Focal with/without secondary generalisation	Carbamazepine Lamotrigine oxcarbazepine sodium valproate	Clobazam gabapentin lamotrigine oxcarbazepine topiramate	Levetiracetam (as first line drug) Eslicarbazepine Lacosamide Levetiracetam Pregabalin Phenytoin Phenobarbital Tiagabine Zonisamide (as adjunctive drug)	

			Vigabatrin (only in tertiary epilepsy specialist care)	
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3 **Table 2 Drug options by epilepsy syndrome**

Epilepsy syndrome	First-line drugs	Adjunctive drugs	Other drugs	Drugs to be avoided (may worsen seizures)
Childhood absence epilepsy	Ethosuximide sodium valproate	lamotrigine		Carbamazepine oxcarbazepine Phenytoin tiagabine or vigabatrin
Juvenile absence epilepsy	Ethosuximide sodium valproate	lamotrigine		Carbamazepine Oxcarbazepine Phenytoin tiagabine vigabatrin
Juvenile myoclonic epilepsy	sodium valproate lamotrigine topiramate	levetiracetam		
Generalised tonic-clonic seizures only	sodium valproate lamotrigine topiramate	Levetiracetam		
Idiopathic Generalised Epilepsies	sodium valproate lamotrigine topiramate	Levetiracetam		
Infantile spasms	- steroid (tetracosatide or prednisolone) (when infantile spasms are			

	not due to tuberous sclerosis) - vigabatrin (when infantile spasms due to tuberous sclerosis)			
Benign epilepsy with centrotemporal spikes	Carbamazepine lamotrigine oxcarbazepine sodium valproate	planned by a specialist	planned by a specialist	
Benign epilepsy with occipital paroxysms	Carbamazepine Lamotrigine Oxcarbazepine sodium valproate	planned by a specialist	planned by a specialist	
Severe myoclonic epilepsy of infancy	sodium valproate topiramate	Stiripentol (after referral to a tertiary epilepsy specialist)		carbamazepine, lamotrigine, oxcarbazepine, phenytoin or vigabatrin
Continuous spike wave of slow sleep	Referral to a tertiary epilepsy specialist			
Lennox–Gastaut syndrome	sodium valproate	lamotrigine	rufinamide or topiramate, felbamate* (after discussion with a tertiary epilepsy specialist)	carbamazepine or oxcarbazepine
Landau–Kleffner syndrome	Referral to a tertiary epilepsy specialist			
Myoclonic astatic epilepsy	Referral to a tertiary epilepsy specialist			

	specialist			
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3 **1.2 Licensing indications**

4 Detailed below are drugs that have been recommended but which do not currently have
5 licensed indications for these seizure types or syndromes or particular populations.

Seizure type/syndrome	Drug	Details of licensing
Refractory treatment of focal seizures	Clobazam	At the time of publication, clobazam did not have UK marketing authorisation for use in children under 3 years (BNF). This was because of insufficient experience of the use in children under 3 years of age to enable any dosage recommendation to be made (SPC).
Refractory treatment of focal seizures	Gabapentin	At the time of publication, gabapentin did not have UK marketing authorisation for use in under 6 years and at doses over 50mg/kg daily in children under 12 years (BNF). The use of gabapentin was not recommended in this age group owing to the lack of sufficient supporting data (SPC).
Refractory treatment of focal seizures	Eslicarbazepine	At the time of publication, eslicarbazepine did not have UK marketing authorisation for use in children below 18 years. It was not recommended due to a lack of data on safety and efficacy (SPC).
Refractory treatment of focal seizures	Pregabalin	At the time of publication, pregabalin did not have UK marketing authorisation for use in children (BNF). Pregabalin is not recommended for use in children below the age of 12 years and adolescents (12 - 17 years of age) due to insufficient data on safety and efficacy (SPC).

Refractory treatment of focal seizures	Zonisamide	At the time of publication, zonisamide did not have UK marketing authorisation for use in children below 18 due to insufficient data on safety and efficacy (SPC).
Absence seizures	Lamotrigine	At the time of publication lamotrigine had UK marketing authorisation for monotherapy of typical absence seizures for those aged 2-12 years only. There was not authorisation outside of this age range (BNF).
Juvenile myoclonic epilepsy	Lamotrigine	At the time of publication, lamotrigine did not have UK marketing authorisation for use in juvenile myoclonic epilepsy. It had authorisation for partial seizures, PGTC and seizures associated with Lennox Gastaut.
Juvenile myoclonic epilepsy	Topiramate	At the time of publication, topiramate did not have UK marketing authorisation for use in juvenile myoclonic epilepsy. It had authorisation for partial seizures, PGTC and seizures associated with Lennox Gastaut.
Myoclonic seizures	Zonisamide	At the time of publication, zonisamide did not have UK marketing authorisation for use in children below 18 years old due to insufficient data on safety and efficacy (SPC).
PGTC	Oxcarbazepine	At the time of publication, oxcarbazepine did not have UK marketing authorisation for PGTC. It had authorisation for partial with or without secondarily generalised tonic-clonic seizure.
PGTC	Clobazam	At the time of publication, clobazam did not have UK marketing authorisation for use in children under 3 years (BNF). Insufficient experience of the use in children under 3 years of age to enable any dosage recommendation to be made (SPC).
Infantile spasms	ACTH (tetracosactide)	At the time of publication, ACTH (tetracosactide) did not have UK marketing authorisation for infantile spasms. Depot

		ampoules are not recommended in infants and children under 3 years due to the presence of benzyl alcohol in the formulation (SPC).
Lennox Gastaut Syndrome	Felbamate	At the time of publication, felbamate did not have UK marketing authorisation. There was no SPC available.
SMEI	Topiramate	At the time of publication, topiramate did not have UK marketing authorisation for use in SMEI but did have authorisation for generalised tonic-clonic seizures, partial seizures and seizures associated with Lennox Gastaut syndrome.
BECTS/BEOPS	Carbamazepine	At the time of publication, carbamazepine did not have UK marketing authorisation for BECTS/BEOPS but had authorisation for partial and generalised tonic-clonic seizures.
BECTS/BEOPS	Lamotrigine	At the time of publication, clobazam did not have UK marketing authorisation for BECTS/BEOPS but had authorisation for partial and primary and generalised tonic-clonic seizures, seizures associated with Lennox Gastaut and typical absence seizures.
BECTS/BEOPS	Oxcarbazepine	At the time of publication, oxcarbazepine did not have UK marketing authorisation for BECTS/BEOPS but had authorisation for partial seizures with or without generalised tonic-clonic seizures.
BECTS/BEOPS	Levetiracetam	At the time of publication, levetiracetam did not have UK marketing authorisation for BECTS/BEOPS but had authorisation for partial seizures with or without secondary generalisation and adjunctive therapy for myoclonic and PGTC.
Status epilepticus	Propofol	At the time of publication, Propofol did not have UK marketing authorisation for status epilepticus but had authorisation for other

		conditions. Diprivan® 2%, Propofol-Lipuro® 2%, and Propoven® 2% not licensed for use in children under 3 years; Diprofusor® TCI ('target controlled infusion') system not licensed for use in children (BNF).
Status epilepticus	Thiopental	At the time of publication, thiopental did not have UK marketing authorisation for status epilepticus or by intravenous infusion (BNF). It is authorised for convulsive states (75mg to 125mg or 3mls to 5mls of a 2.5% intravenous infusion) (SPC).
Status epilepticus	Midazolam	At the time of publication, buccal liquid and injection did not have UK marketing authorisation for children with status epilepticus (Childrens BNF).
Status epilepticus	Diazepam	At the time of publication, diazepam did not have UK marketing authorisation for Rectubes® and Stesolid Rectal Tubes® or for use in children under 1 year.

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