University Hospitals Sussex NHS Foundation Trust

Please note, IF DOCUMENT IS PRINTED, IT MAY BECOME OUT OF DATE.

TRUST CLINICAL GUIDELINE

Epilepsy in Pregnancy Management Guideline

Overview
By providing information to ensure optimal outcomes for the pregnant woman or birthing person and baby in pregnancies complicated by epilepsy, and to act as a resource for staff caring for women and birthing people whose needs fall within the scope of this guideline.

Owner	Seb Adamson
Author/further information	Sophia Stone, Consultant Obstetrician
Guideline version	v4.0
Related policies	None
Related protocols/procedures	**UH Sussex (SRH&WH) Maternity Guidelines:** Maternal Transfer and On-Site Handover of Care, Antenatal Care and Patient Information, Labour Risk Assessment
Standards	SIGN 143 MBRRACE-UK 2023 NICE 2021 RCOG 2016 Valproate Pregnancy Prevention Programme (2020)
Superseded documents	N/A
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Joint Obstetric Guideline Group	**Date approved:**	24th June 2023
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Consultation as relevant		
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Ratification		
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Contents

Epilepsy in Pregnancy Management Guideline

1.0 Aim

To ensure optimal outcomes for pregnant woman or birthing person and baby in pregnancies complicated by epilepsy and to act as a resource for staff caring for women and birthing people whose needs fall within the scope of this guideline. These guidelines are intended to provide high quality, evidence based care to women and birthing people and babies under the care of the maternity units in University Hospitals Sussex NHS Trust (SRH & WH).

2.0 Scope

This guideline applies to all medical, obstetric and midwifery staff caring for pregnant women and birthing people with known epilepsy. A separate section describes the investigations and management of a first seizure or fit in a pregnant woman or birthing person not known to have epilepsy.

3.0 Responsibilities

It is the responsibility of all midwifery and medical staff to:

- Access, read, understand and apply this guidance.
- Attend any mandatory training pertaining to this guidance.

It is the responsibility of the division to:

- Ensure the guideline is reviewed as required in line with Trust and National recommendations.
- Ensure the guideline is accessible to all relevant staff.

4.0 Abbreviations used within this guideline

EEG - Electroencephalographic	**AEDs -** Antiepileptic drugs
MBRRACE(UK) – Mother and Babies: Reducing Risk through Audit and Confidential Enquires	**SUDEP -** Sudden unexpected death in epilepsy
Cu-IUDs - Copper-bearing intrauterine devices	**LNG-IUS -** Levonorgestrel-containing intrauterine system
SPC - Summaries of product characteristics	**BNF -** British National Formulary
POP - Progestogen -only pill	

5.0 Introduction

Epilepsy is the most common chronic neurological disorder to complicate pregnancy. It is defined as a neurological condition characterized by recurrent epileptic seizures unprovoked by any immediately identifiable cause. Epilepsy is classified according to the clinical type of seizure or specific electroencephalographic (EEG) features.

The mainstay of treatment for epilepsy is antiepileptic drugs (AEDs) taken daily to prevent the recurrence of epileptic seizures.

Epilepsy affects approximately 0.5% of women or birthing people of child-bearing age. Approximately one third of people receiving AEDs are of reproductive age. The risk of the child to develop epilepsy is 4%-5% if one parent has epilepsy, 10% if previously affected sibling(s) and15%-20% if both parents have epilepsy.

6.0 Risks associated with epilepsy and pregnancy

6.1 Maternal or birthing person

There is a 10-fold increase in mortality among pregnant women and birthing people with epilepsy which greatly exceeds the two to three-fold mortality rate observed in all people with epilepsy. MBRACE UK reported 14 maternal and birthing people deaths in 2009-2012 and 12 were due to SUDEP.

6.2 Fetal

There are one in 250 pregnancies exposed to AEDs. AED exposure in-utero is associated with congenital malformation (see below). Risk of major congenital malformations is related to the type, number and dose of AED. Furthermore, there are concerns about the long-term neurological development of children exposed to AEDs in-utero with significant increased risk in those exposed to high dose of Sodium Valproate or polytherapy. In-utero exposure to Carbamazepine and Lamotrigine does not appear to affect the neurodevelopment of the newborn (MBRRACE 2014).

There is a general consensus that the risk of uncontrolled convulsive seizures in the pregnant woman or birthing person outweighs the potential teratogenic risk of the medication, therefore most women and birthing people with active epilepsy are advised to continue with medication during pregnancy. If stopped, the impact of seizures extends into daily living and can result in loss of driving license, negative impact on employment, relationships and reduced quality of life.

A variety of adverse effects have been reported on infants born to women and birthing people with epilepsy either treated or untreated, including intrauterine growth restriction, major and minor malformations and postnatal developmental delay. The overall risk of congenital malformation for any AED exposure is about 5% (two to three-fold the background level of risk). The average frequency of major congenital malformations in cohorts of women and birthing people using AED

monotherapy only ranges between 1.03% and 4.5% (less if not on treatment at all but higher than background malformation rate). The risk is highest in the first trimester during organogenesis and for Sodium Valproate.

Fetal anticonvulsant syndrome	
Major	**Minor**
• Microcephaly • Cleft lip & palate • Neural tube defects • Congenital heart disease • Fetal growth restriction • Developmental delay	• Hypertelorism • Distal digital & nail hypoplasia • Flat nasal bridge • Low set ears • Epicanthic folds • Long philtrum

6.3 Types of AEDs and different seizures

Serum AED concentrations often fall during pregnancy, especially in the second and third trimesters. Physiological changes in pregnancy alter AED pharmacokinetics of absorption, AED concentrations, and excretion. There is decreased gastric tone and motility, increased plasma volume, increased renal clearance and albumin levels and protein binding. There is a reduction in Lamotrigine levels in up to 70% in pregnancy. The total concentration of Carbamazepine decreases. Total and free Phenytoin concentration decreases in all three trimesters but the concentrations of Levetiracetam decreases mostly during the third trimester. These falls in levels can result in aggravation of seizures.

A baseline serum drug level can be considered to establish the compliance with the treatment. There is no clear evidence to suggest that regular monitoring of serum AED levels in pregnancy improves seizure control or affects maternal or fetal outcomes. NICE (National Institute for Health and Clinical Excellence) and SIGN (Scottish Intercollegiate Guidelines Network) guidelines do not currently recommend regular AED monitoring in pregnancy, although individual circumstances may be taken in consideration (E.g. change in drug dose, poor control of seizures). The EMPiRE trial (Anti-epileptic drug monitoring in pregnancy: an evaluation of effectiveness, cost-effectiveness and acceptability of monitoring strategies) supports the NICE recommendation.

Clinicians should be aware that some of the AEDs have the potential to affect maternal cognition, particularly in those with past/present history of psychiatric problems or those taking high doses of AEDs or polytherapy. Appropriate and early referral to the perinatal mental health team should be made if there are any new or worsening symptoms.

7.0 Pre-pregnancy

Ideally women and birthing people should be counselled pre-pregnancy and given accurate information regarding the risks of epilepsy and drug therapy on pregnancy. This should be either by

a neurologist with an interest in pregnancy or a maternal medicine specialist. Consider sending baseline drug levels for those on Lamotrigine, Levetiracetam and/or Oxcarbazepine.

Women and birthing people should be advised to take Folic Acid 5mg daily for at least 3 months prior to conception and continue throughout pregnancy. There is evidence to suggest that peri-conceptional Folic Acid is associated with significant higher IQ and reducing major congenital malformations in children of women and birthing people taking AEDs.

Women and birthing people should be informed that the risk of congenital malformations is linked to the type, number and dose of AEDs. Aim is for seizure-free before conception and during pregnancy (particularly for women and birthing people or girls with generalised tonic-clonic seizures) but consider the risks of adverse effects of AEDs and use the lowest effective dose of each AED, avoiding polytherapy if possible. Valproate must no longer be used in any woman or birthing person or girl/child able to have children unless they have been informed of the risks and the need to avoid becoming pregnant. It is important women and birthing people do not stop taking valproate without first discussing it with their doctor Valproate use by Women/people & Girls/children.

Woman or birthing person on Sodium Valproate should be especially counselled regarding changing or reducing therapy in pregnancy because of the significantly higher fetal malformation rate associated with this drug. If they decide to continue on Sodium Valproate into pregnancy, the discussion regarding risks should be clearly documented and written consent obtained (see Appendix 1).

Women and birthing people and girls/children with epilepsy need accurate information during pregnancy. The possibility of status epilepticus and SUDEP (sudden unexpected death in epilepsy) should be discussed with all women and birthing people and girls/children who plan to stop AED therapy.

In the case of an unplanned pregnancy, it is never recommended to stop or change the dose of AEDs without informed counselling Urgent epilepsy specialist referral should be made to discuss the treatment and effect on the pregnancy.

Genetic counselling should be considered if one partner has epilepsy, particularly if the partner has idiopathic epilepsy and a positive family history of epilepsy. Although there is an increased risk of seizures in children of parents with epilepsy, young people and adults with epilepsy should be given information that the probability that a child will be affected is generally low. However, this will depend on the family or personal history.

8.0 Antenatal monitoring of pregnant women and birthing people with known epilepsy

All pregnant women and birthing people with epilepsy should be referred to the maternal medicine (obstetric medicine) clinic as early as possible.

Women and birthing people who are seizure-free for at least 10 years (with the last 5 years off AED) and those with childhood epilepsy syndrome who have reached adulthood seizure and treatment-free are considered to no longer have epilepsy. If there are no other risk factors, they can be managed as a low-risk pregnancy.

All women and birthing people with epilepsy should be encouraged to declare their pregnancy and be informed about the potential risks of epilepsy in pregnancy. At booking the clinician should provide information about the UK Epilepsy in Pregnancy Register and invite the woman or birthing person to register at www.epilepsyandpregnancy.co.uk.

The clinician should discuss with the woman or birthing person the relative benefits and risks of adjusting medication to enable them to make an informed decision. They should be ideally managed under the joint care of their neurologist and maternal medicine specialist.

Women and birthing people with epilepsy should be regularly assessed for sleep deprivation and stress, adherence to AEDs, seizure type and frequency to rule out risk factors of seizures. If significant risks factors of seizures or deterioration in seizure control are identified, consider antenatal admission and continuous observation under neurology or maternity unit.

Pregnant women and birthing people who are taking AEDs should be offered a high-resolution ultrasound scan to screen for structural anomalies. This scan should be performed at 18–20+6 weeks gestation by an appropriately trained ultrasonographer.

Women and birthing people on polytherapy, single high doses of AEDs, or very poorly controlled epilepsy should be offered a fetal medicine clinic ultrasound at 16-18 weeks gestation. Consider fetal echocardiography at 22 weeks in patients on polytherapy or on Sodium Valproate. Because of an association with fetal growth restriction, serial fetal growth scans should be offered from 28 weeks for the remainder of the pregnancy.

There is no evidence for routine antepartum CTG in women and birthing people taking AEDs.

It is important that there should be a regular follow-up, planning of delivery, and liaison between the specialist or epilepsy team and the obstetrician or midwife.

AED levels can be useful in women and birthing people taking Lamotrigine, Levetiracetam or Oxcarbazepine during pregnancy. If seizures increase or are likely to increase, monitoring AED levels 6-8 weekly may be useful when making dose adjustments.

Women and birthing people taking Carbamezepine, Levetiracetam should have their sodium level checked with their 28 weeks blood, as these medications potentially can cause hyponatremia.

Women and birthing people taking enzyme inducing AEDs (Phenytoin, Primidone, Carbamazepine, Phenobarbitone and Topiramate at doses ≥200mg daily) should be prescribed PO Vitamin K 10mg daily from 36 weeks gestation until delivery.

It is no longer recommended to consider double dose of Dexamethasone or Betamethasone for fetal lung maturity in patients on Hepatic Enzyme inducer AED (Phenytoin, Phenobarbitone, Carbamazepine or Topiramate) (RCOG Green-top Guideline 68 2016).

8.1 Discussion and information for pregnant women and birthing people with epilepsy

Women and birthing people with generalised tonic–clonic seizures should be informed that the fetus may be at relatively higher risk of harm during a seizure, although the absolute risk remains very low, and the level of risk may depend on seizure frequency.

Women and birthing people should be reassured that there is no evidence that focal, absence and myoclonic seizures affect the pregnancy or developing fetus adversely unless they fall and sustain an injury.

Women and birthing people should be reassured that an increase in seizure frequency is generally unlikely in pregnancy or in the first few months after birth.

Women and birthing people should be advised to bathe in shallow water or to shower.

Women and birthing people with epilepsy should be informed that although they are likely to have healthy pregnancies, their risk of complications during pregnancy and labour is higher than for women and birthing people and girls/children without epilepsy.

All Women and birthing people with epilepsy should be informed about RCOG PIL (see appendix 1).

9.0 Other causes of seizures in pregnancy

- Eclampsia (please refer to Management of Severe Pre-Eclampsia and Eclampsia Guideline)
- Cerebral vein thrombosis
- Thrombotic thrombocytopenic purpura
- Stroke
- Subarachnoid haemorrhage
- Drug and alcohol withdrawal
- Hypoglycaemia
- Hyponatraemia
- Sepsis
- Postdural puncture (rare)
- Gestational epilepsy
- Pseudoepilepsy
- Vasovagal syncope
- Addisonian crisis

10.0 Appropriate investigations following a first seizure in pregnancy

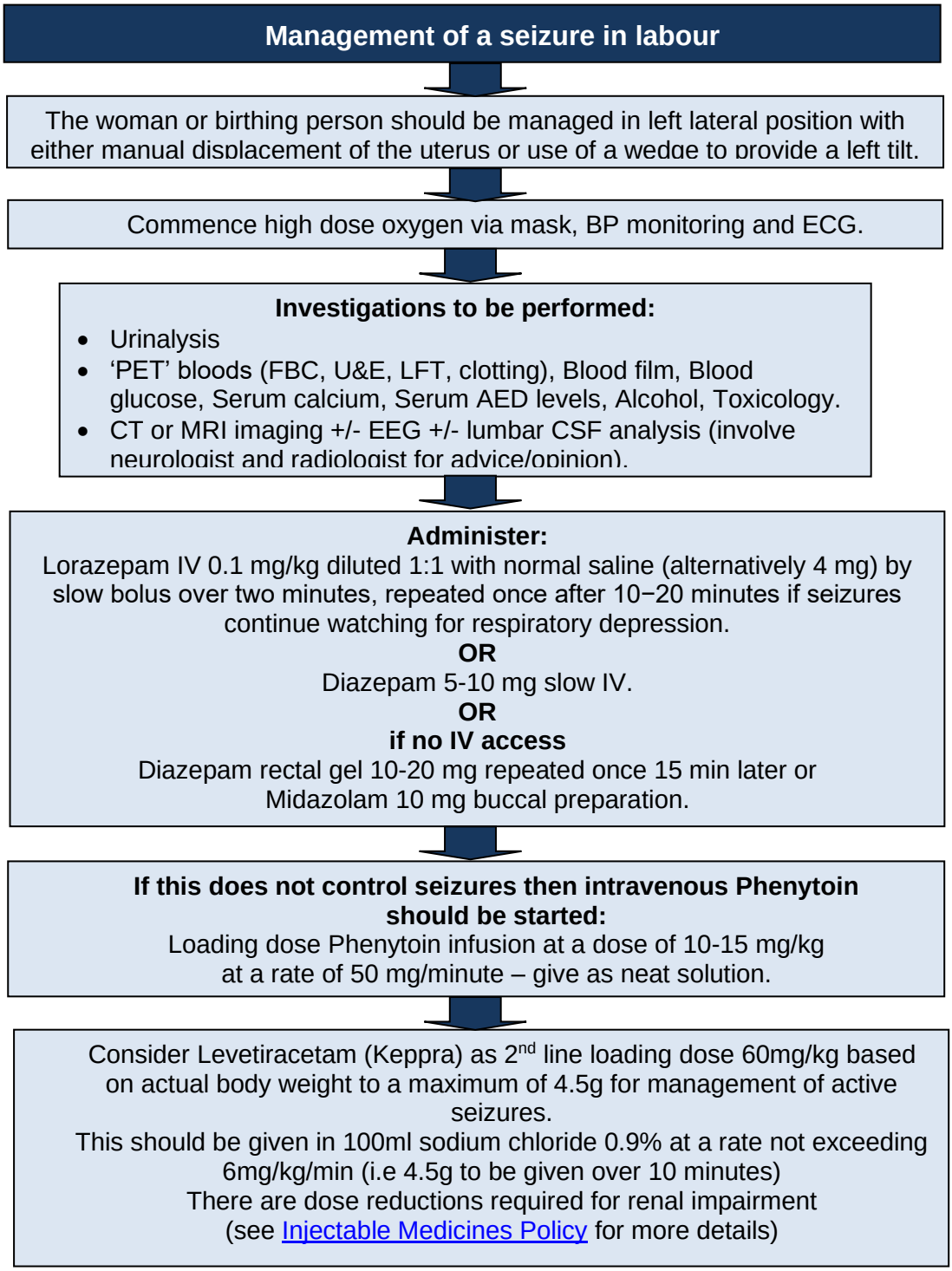
- Blood pressure
- Urinalysis
- 'PET' bloods (FBC, U&E, LFT, clotting)
- Blood film
- Blood glucose
- Serum calcium
- Serum AED levels
- Alcohol
- Toxicology
- CT or MRI imaging +/- EEG +/- lumbar CSF analysis (involve neurologist and radiologist for advice/opinion)

11.0 Management in labour of women and birthing people with known epilepsy

Women and birthing people may be reassured that the risk of a tonic–clonic seizure during the labour and the 24 hours after birth is low (1–4%).

- The risk of seizures during labour is low, but it is sufficient to warrant the recommendation that delivery should take place in an obstetric unit with facilities for maternal and neonatal resuscitation and treating maternal and birthing people seizures.
- The woman or birthing person should be admitted early in labour and the obstetric and anaesthetic teams should be informed of their admission.
- One-to-one midwifery care is recommended to allow close monitoring of WWE in labour and to prevent known precipitants of seizure in labour such as over breathing, poor control of pain, dehydration and omission of AED intake.
- The decision to use water for analgesia and birth must be made based on the seizure risk status of the pregnant woman or birthing person after discussion between them and team caring for the woman or birthing person, with attention given to how the risk of drowning can be minimised in the unlikely event of seizure. Appropriate safety measures such as a hoist should be available. Women and birthing people should not be left alone in the pool and have support of their partner and/or the midwife at all times. Healthcare professionals, pregnant women and birthing people will need to be aware of the difficulties in managing a seizure in labour in this situation and the small potential risk of drowning.
- Ensure the woman or birthing person continues to take their AED during labour.
- Women and birthing people should not be left unattended in labour or for the first 24 hours postpartum.
- Intravenous access should be obtained in early labour.
- To limit the risk of precipitating a seizure because of pain and anxiety, early epidural analgesia should be considered. Try to avoid other triggers such as dehydration, pyrexia and exhaustion.
- Continuous fetal monitoring in women and birthing people at high risk of seizure in labour is recommended.

11.1 Management of a seizure in labour



The anaesthetic registrar or consultant should be in attendance. Consider transfer to ITU and involve neurologists. Consider non-epilepsy causes of seizures including eclampsia (if indicated - see CG1112 Management of Severe Pre-eclampsia and Eclampsia Guideline)

Caesarean section is indicated for obstetric reasons only or if in status or recurrent seizures in labour or if the fetal heart rate is not recovered within 5 minutes.

12.0 Post birth

All children born to women and birthing people taking enzyme-inducing AEDs should be given 1 mg of Vitamin K parenterally at birth. Be aware of the risk of neonatal withdrawal syndrome in women and birthing people with AED and benzodiazepines.

If the woman or birthing person's dose of AED was increased in pregnancy it may be gradually reduced to pre- pregnancy levels in the first few weeks postpartum. Lamotrigine and Phenytoin blood levels increase rapidly following delivery and therefore their doses should be decreased relatively rapidly (during the first week postpartum).

12.1 Breastfeeding

All women and birthing people and girls/children with epilepsy should be encouraged to breastfeed, except in very rare circumstances. For patients on combination therapy or if there are other risk factors e.g. premature baby, seek further advice from Woman & Childrens Pharmacist (Mon-Fri). Bleep numbers are available on Maternity Wards.

Breastfeeding for most women and birthing people and girls/children taking AEDs is generally safe and should be encouraged. However, each woman or birthing person needs to be supported in the choice of feeding method that bests suits them and their family. If a baby of a woman or birthing person taking AEDs is unusually sleepy or has to be woken for feeds, the woman or birthing person should be encouraged to feed before rather than after taking their AEDs.

Lamotrigine should not be initiated in breastfeeding women and birthing people.

Lamotrigine doses increased during pregnancy should be reduced to pre-pregnancy dose within 1-2 weeks following birth.

12.2 Safety measures

Parents of new babies should be informed that introducing a few simple safety precautions may significantly reduce the risk of accidents and minimise anxiety. An approaching birth can be an ideal opportunity to review and consider the best and most helpful measures to start to ensure maximum safety for both woman or birthing person and baby for example advise nursing & changing nappies on the floor, laying the baby down in a place of safety if they have a warning aura, and bathing the baby in very shallow water or with supervision.

12.3 Contraception

Women and birthing people taking hepatic enzyme-inducing drugs (Phenytoin, Primidone, Carbamazepine, Phenobarbitone, and Topiramate at doses ≥ 200mg daily) should be advised to use a reliable contraceptive method unaffected by enzyme inducers [e.g. progestogen-only injectable, copper-bearing intrauterine devices (Cu-IUDs) or the levonorgestrel-containing intrauterine system (LNG-IUS)].

Women and birthing people on combined oral contraceptive pill taking hepatic enzyme inducers require higher doses of oestrogen to achieve adequate contraception. They should receive a combined pill containing 50 microgram ethinyl oestradiol or two pills containing 30 micrograms but full guidance about dosage should be sought from the SPC and current edition of the BNF (available at http://bnf.org). Alternative contraception should be advised.

The progestogen-only pill (POP) is not recommended as reliable contraception in women and birthing people and girls/children taking enzyme-inducing AEDs. If they are taking POP, women and birthing eople should be advised to take 2 progesterone-only pills per day.

The progestogen implant is not recommended in women and birthing people and girls taking enzyme-inducing AEDs.

Double dose of 'morning after pill' is advised but guidance about dose and type of emergency contraception should be sought from BNF. Cu-IUD is a better alternative.

Valproate, Clonazepam, Vigabatrin, Lamotrigine, Levetiracetam, Gabapentin, and Tiagabine do not induce hepatic enzymes and all methods of contraception are acceptable.

- However women and birthing people taking **Lamotrigine** alongside an oestrogen-based contraceptive can result in a significant reduction of Lamotrigine levels and lead to loss of seizure control. When a woman or birthing person starts or stops taking these contraceptives, the dose of Lamotrigine may need to be adjusted.

13.0 Audit/monitoring

Auditable standards - RCOG Green-top Guideline 68 (2016) pg. 28

Standards for audit of practice should include the following:

- Provision of written information on the effects of epilepsy and AEDs on pregnancy outcomes and seizures (100%).
- Multidisciplinary input into pre-pregnancy, antenatal, intrapartum and postnatal care of WWE (100%).

Standards for audit of documentation should include the following:

- Written protocols for management of status epilepticus in all obstetric units (100%).
- Documented discussion on risks to the woman or birthing person and baby from epilepsy and AEDs in the short and long term (100%).
- Proportion of women and birthing people enrolled in the UK Epilepsy and Pregnancy Register (100%).

Appendix 1: Patient information

Leaflet and information for women and birthing people can be found at Epilepsy in pregnancy RCOG PIL

Appendix 2: Useful links and support groups

- Epilepsy Action. Epilepsy and having a baby https://www.epilepsy.org.uk/living/sex-and-contraception/sex-and-epilepsy
- Epilepsy Society. Pregnancy and parenting https://epilepsysociety.org.uk/living-epilepsy/pregnancy-and-epilepsy/pregnancy-and-parenting
- UK Epilepsy and Pregnancy Register [http://www.epilepsyandpregnancy.co.uk/].

Appendix 3: Monitoring the effectiveness of this guideline

Auditable standards - RCOG Green-top Guideline 68 (2016) pg. 28

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- Documented discussion on risks to the mother or birthing parent and baby from epilepsy and AEDs in the short and long term (100%).
- Proportion of women and birthing people enrolled in the UK Epilepsy and Pregnancy Register (100%).

Appendix 4: Guideline Version Control Log

This should be included for all updated guidelines, summarising the changes between the current and previous version. (Earlier changes should be deleted from the list when the guideline is updated.)
Do not list minor and stylistic changes or changes which do not alter the processes described.
If the update includes a significant reorganisation of the material, indicate this and list the main areas where the process itself has changed.

Change Log – Epilepsy in Pregnancy Management

Version	Date	Author	Status	Comment
1.0	October 2013	Maternal Medicine Obstetric Consultant	Archived	New Trust Maternity guideline
2.0	June 2016	Maternal Medicine Obstetric Consultant (Miss S Stone)	Archived	Amended and Updated
3.0	June 2020	Maternal Medicine Obstetric Consultant S. Stone/ M. Placintescu (Specialist trainee)	Archived	Amended and updated in line with NICE, RCOG guidance Link to patient info for Valproate use and Valproate Pregnancy Prevention Programme added.
4.0	June 2023	Maternal Medicine Obstetric Consultant R.Mason / H.Alabdali (Registrar)	LIVE	• 3 year update. • Women and birthing people taking Carbamezepine or Levetiracetam should have their sodium level checked with their 28 weeks blood. • Levetiracetam dose for active seizures changed to 60mg/kg based on actual body weight to a maximum of 4.5g.

Appendix 5: Due Regard Assessment Tool

To be completed and attached to any guideline when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the document/guidance affect one group less or more favourably than another on the basis of:**		
	Age	*No*	
	· Disability	*No*	
	· Gender (Sex)	*No*	
	· Gender Identity	*No*	
	· Marriage and civil partnership	*No*	
	· Pregnancy and maternity	*No*	
	· Race (ethnicity, nationality, colour)	*No*	
	· Religion or Belief	*No*	
	· Sexual orientation, including lesbian, gay and bisexual people	*No*	
2.	**Is there any evidence that some groups are affected differently and what is/are the evidence source(s)?**	*No*	
3.	**If you have identified potential discrimination, are there any exceptions valid, legal and/or justifiable?**	*NA*	
4.	**Is the impact of the document likely to be negative?**	*No*	
5.	**If so, can the impact be avoided?**	*NA*	
6.	**What alternative is there to achieving the intent of the document without the impact?**	*NA*	
7.	**Can we reduce the impact by taking different action and, if not, what, if any, are the reasons why the guideline should continue in its current form?**	*NA*	
8.	**Has the document been assessed to ensure service users, staff and other stakeholders are treated in line with Human Rights FREDA principles (fairness, respect, equality, dignity and autonomy)?**	*Yes*	

If you have identified a potential discriminatory impact of this guideline, please refer it to [Insert Name], together with any suggestions as to the action required to avoid/reduce this impact. For advice in respect of answering the above questions, please contact uhsussex.equality@nhs.net 01273 664685).

Appendix 6: Template Dissemination, Implementation and Access Plan

To be completed and attached to any guideline when submitted to Corporate Governance for consideration and TMB approval.

	Dissemination Plan	Comments
1.	Identify:	
	Which members of staff or staff groups will be affected by this guideline?	Midwives and obstetricians
	How will you confirm that they have received the guideline and understood its implications?	Dissemination through the usual Communication channels and highlighted at Safety Huddles.
	How have you linked the dissemination of the guideline with induction training, continuous professional development, and clinical supervision as appropriate?	All new members of staff are shown where to access Clinical documents that are relevant to their area of practice.
2.	How and where will staff access the document (at operational level)?	Accessed by staff via Sharepoint

		Yes/No	Comments
3.	Have you made any plans to remove old versions of the guideline or related documents from circulation?	Yes	Previous versions will be archived as part of the uploading onto sharepoint process.
4.	Have you ensured staff are aware the document is logged on the organisation's register?	Yes	Dissemination plan includes notifying staff via email, safety noticeboards, departmental newsletter and social media.

Appendix 7: Additional guidance and information

RCOG (2016) Green-top Guideline No 68 Epilepsy in Pregnancy.

NICE (2021) CG137 Epilepsy.

Nelson-Piercy, C. (Ed). 2015. Handbook of Obstetric Medicine – Fifth Edition.

Clinical Effectiveness Unit and Faculty of Sexual & Reproductive Healthcare Clinical Guidance. 2012. Drug Interactions with Hormonal Contraception.

MBRRACE-UK 2023

Feb 2021 https://www.gov.uk/guidance/valproate-use-by-women-and-girls

Healthcare Improvement Scotland (2018) SIGN 143: Diagnosis and management of epilepsy in adults.

Valproate Pregnancy Prevention Programme: information for young girls taking Valproate (2019)

Valproate Pregnancy Prevention Programme (2020)