Assessment and management of neonatal seizures

Baby with suspected seizure activity:
- Resuscitate and treat cardiorespiratory compromise
- Consider advice from neonatologist via RSQ as required

Observe and monitor:
- Seizure activity
- Temperature, heart rate, respiratory rate & effort, BP, SpO₂, BGL

Treat cardiorespiratory compromise

Assessment:
- Review history (maternal, perinatal, family)
- Physical examination
- Neurological examination (prior to ASM)
- Investigate for underlying cause as required
  - Refer to flowchart: Investigations
- Consider video recording of seizure events

Management:
- Treat underlying cause
  - Refer to other QCG guidelines
- Commence ASM if seizures:
  - Duration > 5 minutes
  - More than 2 brief episodes
  - Detected on EEG (if available)
- Initiate ongoing communication with parent(s)
- Involve parents in telehealth communications if relevant

Treat underlying cause(s) as indicated:
- Hypoglycaemia—Refer to QCG Newborn hypoglycaemia
- Infection—Refer to QCG EOGBSD
- HIE—Refer to QCG HIE
- Other

Loading dose of phenobarbital
- Refer to QCG NeoMedQ

Seizure activity ceased?

Seizure activity:
- Consider video recording of seizure events

Treatment:
- Consider additional doses of phenobarbital
- Contact RSQ to consult with neonatologist/paediatric neurologist
- Second line medications (as advised):
  - Levetiracetam
  - Midazolam
  - Topiramate
  - Clonazepam
  - Lidocaine
  - Phenytoin
- If seizures intractable within hours of birth & resistant to ASMs, pyridoxine may be indicated as advised by specialist
- Refer to QCG NeoMedQ for regimens

Maintenance therapy:
- For difficult to control or prolonged seizures or abnormal EEG
- Consider ceasing ASMs if:
  - Only one ASM required
  - Seizures have ceased for 72 hours and
  - Normal neurological examination or
  - Normal EEG

ASM: anti-seizure medication(s); BGL: blood glucose level; BP: blood pressure; EEG: electroencephalogram; EOGBSD: early onset Group B Streptococcal disease; HIE: hypoxic ischaemic encephalopathy; IV: intravenous; QCG: Queensland Clinical Guidelines; RSQ: Retrieval Services Queensland, SpO₂ peripheral oxygen saturation; >: greater than