



INCLUSION

- Patients with one continuous seizure lasting ≥5 min
- Patients with multiple, intermittent seizures lasting ≥ 5 min **between** which the patient does not regain consciousness

EXCLUSION

- For patients with readily accessible individualized seizure plans, please defer to patient-specific plan

NEONATES ≤28 DAYS

- Treat with benzodiazepine and administer Phenobarbital 20mg/kg as 2nd medication (see Table 3).

KEY POINT

The care team's ability to stop a patient's seizure/seizures depends on timely administration of medications.

The longer the seizure, the more treatment-resistant it becomes.

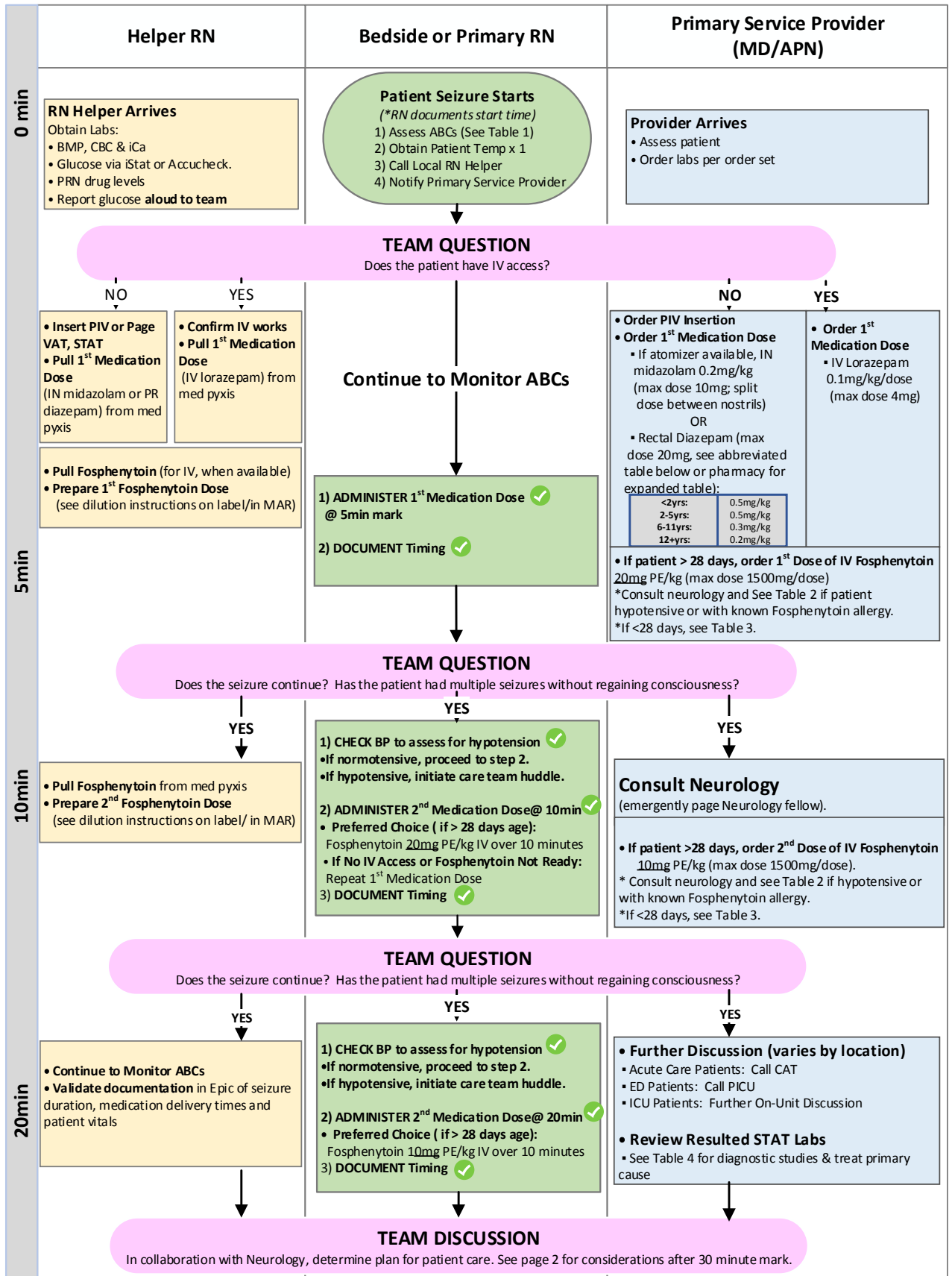




TABLE 1: ABC Assessment

- Provide oxygen to maintain $SO_2 >92\%$
- Cycle blood pressure cuff every 3 minutes, administer NS bolus if hypotensive
- Monitor heart rate

TABLE 2: Alternatives to Fosphenytoin

If Fosphenytoin is contraindicated, can administer:

- Levitracetam 60mg/kg (max 4500mg/dose)
OR
- Phenobarbital 20mg/kg

TABLE 3: Neonates <28 days

- Consult Neurology
- Preferred 2nd medication at 10 minutes is Phenobarbital 20mg/kg
- Discuss 3rd medication choice/dose with Neurology
- In partnership with Neurology, expedite order of MR Ventricle DWI/ADC/GRE

TABLE 4: Studies for SE without Identified Etiology

Initial Studies:

- Serum electrolytes & glucose
- Complete blood count
- Antiepileptic drug levels (if applicable)
- Lumbar puncture:
 - Consider if febrile or concern for CNS infection
 - Obtain cell count, glucose, protein and culture
- Imaging Studies:
 - MR Ventricle with DWI and GRE *or* CT Head

Additional/Expanded Studies to Consider (for unusual presentation, refractory seizures):

- CSF: meningoencephalitis panel, viral studies, lactate, autoimmune encephalitis panel
- Metabolic studies: lactate, pyruvate, acylcarnitine profile, serum amino acids, urine organic acids
- Blood and urine cultures
- Expanded CNS imaging (once seizures controlled):
 - Full MRI Brain
 - Vascular imaging (MRA/CTA, MR venogram)
 - MR Spectroscopy



Considerations for after 30 min: Overview of Treatment of Refractory Status Epilepticus

If seizures continue despite appropriate doses of a benzodiazepine and a loading dose of another anticonvulsant, the patient is in refractory SE.

Key management principles include:

- Advance drug dosing quickly
- Use bolus doses to initiate therapy
- Use physiologic management (BP, oxygenation, CO₂, temperature) and attention to metabolic stressors to attenuate secondary injury
- If possible identify and treat the underlying cause

Initial Steps:

- If not already done, call CAT for patients outside of the ER or ICU
- Patients are likely to require intubation. Anticipate the need for pressors as therapy is escalated (consider a-line, central line).
- Video-EEG monitoring should be initiated for all patients in refractory SE
- Emergently consult neurology if not already done

First Line Therapy	<p>Midazolam</p> <ul style="list-style-type: none"> ▪ Load with 100-200mcg/kg ▪ Continuous infusion starting at 100mcg/kg/h ▪ Increase dose every 15 minutes by 50mcg/kg/h until electrographic seizure control achieved ▪ Max dose 600-800mcg/kg/h
Second Line Therapy	<p>Pentobarbital</p> <ul style="list-style-type: none"> ▪ Load with 6-8mg/kg IV ▪ DO NOT use if hypotension cannot be controlled ▪ Start maintenance 1-4mg/kg/h ▪ Titrate to burst suppression on EEG
Further steps for super-refractory SE, or if pentobarbital contraindicated	<p>Possible medication choices include:</p> <ul style="list-style-type: none"> ▪ Topiramate (enteral loading dose) ▪ Ketamine ▪ Ketogenic diet



Evidence

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