

LRI Emergency Department

Convulsive status epilepticus in adults

Version 55

Use if five or more minutes of continuous seizure activity or recurrent fits without regaining consciousness between episodes

DO NOT use in eclampsia (use separate guideline, C3/2001)

NB: Drug preparation and administration instructions may differ from those on Medusa

Disclaimer: This is a clinical template; clinicians should always use judgment when managing individual patients

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Patient details

Full name

DoB

Unit number

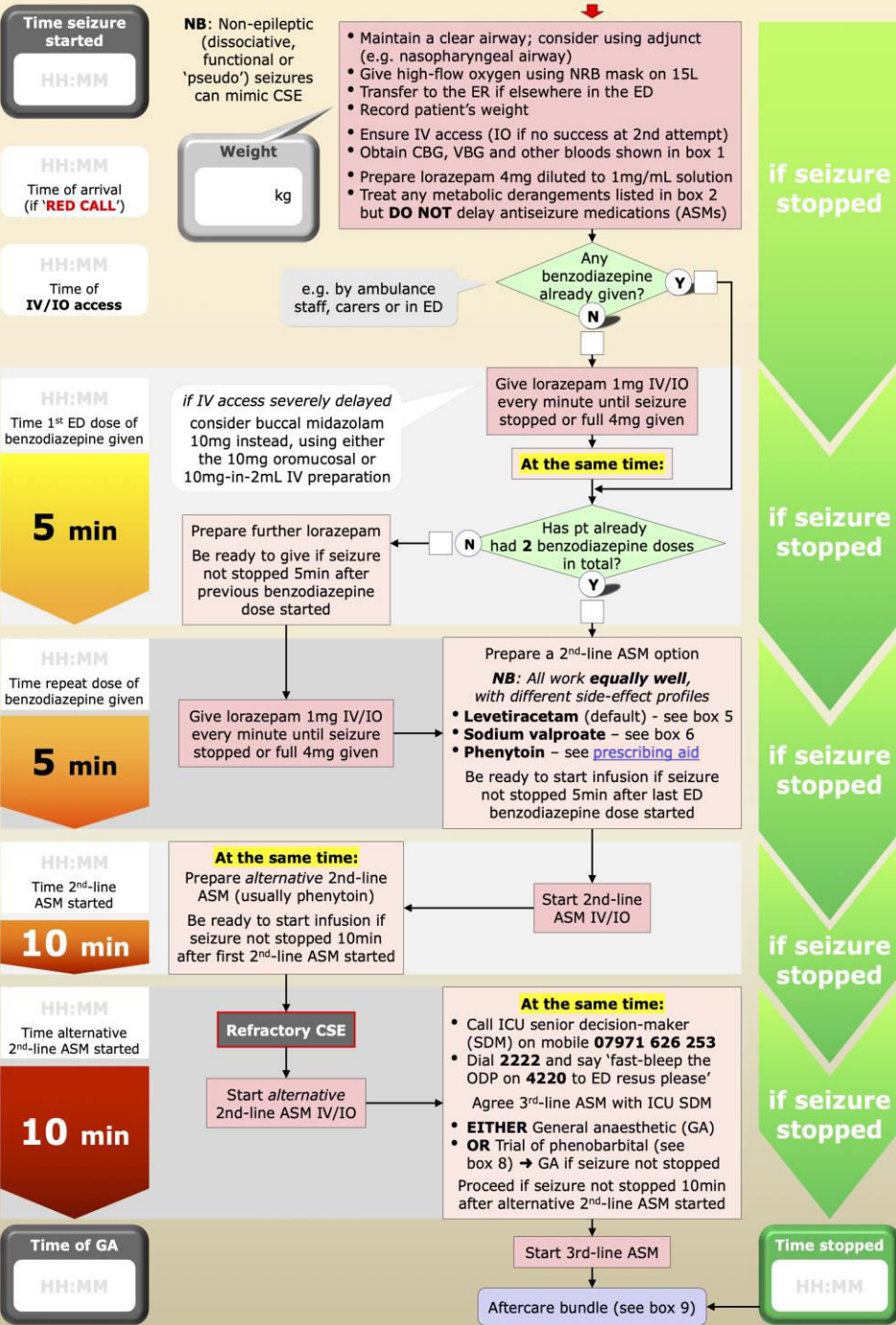
(use sticker if available)

① Blood results

Values shown in yellow can be obtained on a VBG

WBC	Glucose
Hb	Ionised Calcium
Platelets	Adjusted Calcium
INR	Phos
PT	Mg
APTT	Na
APTR	K
Albumin	Urea
Bilirubin	Crea
Alk Phos	CRP
ALT	

For antiseizure medications in NC Meds, go to > Emergency Medicine > Common scenarios > Seizures



② Any metabolic derangement?

suggested immediate replacements IV/IO

Hypoglycaemia (CBG <4)
 ➔ Give Glucose 20% 100mL over 10min, then follow [UHL guideline for hypoglycaemia in adults](#)

Vitamin B6 deficiency (alcohol misuse, low body weight or large weight loss)
 ➔ Give Pabrinex® 2 pairs of ampoules

Hyponaatraemia (Na <130)
 ➔ Give 2.7% NaCl 150mL over 20min, then re-check Na on a VBG. Give one further 150mL bolus unless seizures have stopped or Na has increased by 5mmol/L or more. Go to UpToDate for more details on emergency treatment.

Hypocalcaemia (ionized Ca <1 or adjusted Ca <1.9)
 ➔ Give neat Ca gluconate 10% 30mL or neat Ca chloride 10% 10mL over 5-10min, then follow [UHL guideline for hypocalcaemia in adults](#)

Hypomagnesaemia (Magnesium <0.7)
 ➔ Give 2G = 8mmol (Mg sulfate 50% 4mL in 0.9% NaCl 100mL over 20min, then follow [UHL guideline for hypomagnesaemia in adults](#)

Hypophosphataemia (Phosphate <0.3)
 ➔ Give 90mL (9mmol) of a 50mmol-in-500mL polyfusor over 12h

③ Causes and precipitants

- Metabolic derangements as listed in box 2
- Non-adherence to antiseizure medication (in all pts with epilepsy, complete box 10)
- Acute intracerebral process (see box 4 for CT-head indications)
 - Stroke
 - Drugs and toxins, e.g. cocaine, local anaesthetics and isoniazid (INH) OD
 - CNS infection, including malaria and HIV
 - Sepsis-associated encephalopathy
 - Recent head injury
 - Hypoxic-ischemic brain injury
- Remote brain injury (post-traumatic, post-encephalitic, post-stroke etc.)
- Intracranial tumour
- Uncommon causes
 - Autoimmune
 - Genetic - e.g. fragile X syndrome
 - Mitochondrial disorders
 - Hyperammonaemia (e.g. in liver failure)
- Unknown; includes 'cryptogenic new-onset refractory status epilepticus' (C-NORSE)

④ Is CT-head indicated?

YES - as at least one of the below

- No previous epilepsy history
- New focal neurological signs
- Head injury
- Known intracranial tumours
- Refractory CSE (see algorithm)

NO - as none of the above

⑤ Levetiracetam loading dose

- Safe to use in patients already taking levetiracetam regularly
- Tick applicable weight range
- If NC offline, prescribe infusion on a paper drug chart as per box 7

Ideally avoid (but NOT contraindicated) if

- eGFR known to be <30 from previous U&E (NB: CAN still be given if no results available)
- History of intentional OD / suicidal ideation

Patient weight (kg)	Add required amount of levetiracetam to a 100 mL bag of sodium chloride 0.9%		
	Levetiracetam 60mg/kg ampoules contain 500mg in 5mL (100mg/mL)		Rate
	Dose	Volume	
	mg	mL	mL/h
40 – 44	2500	25	750
45 – 49	2800	28	768
50 – 54	3100	31	786
55 – 59	3400	34	804
60 – 64	3700	37	822
65 – 69	4000	40	840
70 – 74	4300	43	858
> 74	4500	45	870

All infusions will complete in 10min

⑥ Sodium valproate loading dose

- Tick applicable weight range
- If NC offline, prescribe infusion on a paper drug chart as per box 7

Avoid if

- Already taking sodium valproate regularly
- Woman of childbearing potential
- Acute liver failure, known clotting disorder, active bleeding or recent neurosurgical procedure
- Mitochondrial disorders and aminoacidopathies

Patient weight (kg)	Add required amount of sodium valproate to a 100 mL bag of sodium chloride 0.9%		
	Sodium valproate 40mg/kg ampoules contain 400mg in 4mL (100mg/mL)		Rate
	Dose	Volume	
	mg	mL	mL/h
40 – 44	1700	17	1000
45 – 49	1900	19	1000
50 – 54	2100	21	1000
55 – 59	2300	23	1000
60 – 64	2500	25	1000
65 – 69	2700	27	1000
70 – 74	2900	29	1000
> 74	3000	30	1000

All infusions will complete in a little under 8min

⑦ ASM example prescriptions for use if Nervecentre is offline

For a 64kg patient as per boxes 5, 6 and 8

Date	Infusion fluid		Additions to infusion		IV or SC	Line	Start Time	Time to run or ml/hr	Fluid Batch No.	Prescriber
	Type/strength	Volume	Drug	Dose						
DD/MM/YY	Sodium chloride 0.9%	100mL	Levetiracetam	3700mg = 37mL	IV		HH:MM	822 mL/h (i.e. runs over 10min)		Dr.'s Name
DD/MM/YY	Sodium chloride 0.9%	100mL	Sodium valproate	2500mg = 25mL	IV		HH:MM	1000 mL/h		Dr.'s Name
DD/MM/YY	Sodium chloride 0.9%	100mL	Phenobarbital	660mg = 11mL	IV		HH:MM	951 mL/h		Dr.'s Name

⑧ Phenobarbital loading dose

- Use only if agreed with ICU SDM
- Tick applicable weight range
- If NC offline, prescribe infusion on a paper drug chart as per box 7

Avoid if

- Porphyria
- Older people / high risk of respiratory depression

Patient weight (kg)	Add required amount of phenobarbital to a 100 mL bag of sodium chloride 0.9%		
	Phenobarbital 10mg/kg ampoules contain 60mg in 1mL		Rate
	Dose	Volume	
	mg	mL	mL/h
40 - 42	420	7	1000
43 - 48	480	8	1000
49 - 54	540	9	1000
55 - 60	600	10	1000
61 - 66	660	11	951
67 - 72	720	12	840
73 - 78	780	13	847
79 - 84	840	14	760
85 - 90	900	15	766
91 - 96	960	16	696
> 96	1020	17	638

Infusions will complete within 6 – 11min (infusion rate = 100mg/min)

⑨ Aftercare bundle

- Place in recovery position if possible while postictal
- Monitor for respiratory depression during postictal period
- If CSE had stopped after benzodiazepine only, now load with one appropriate 2nd-line ASM (levetiracetam, sodium valproate or phenytoin) to prevent seizure recurrence
- Look for potential causes and precipitants (see box 3)
- Identify any injuries, e.g. shoulder dislocations
- Wean off oxygen once target SpO₂ maintained
- CT-head if indicated (see box 4)
- CXR to exclude aspiration
- Appropriate disposition (i.e. AMU, ACB or ICU)
- Document the need to create an agreed emergency management plan during this admission for all pts with epilepsy who do not already have one in place

⑩ Antiseizure medication (ASM) levels

Status epilepticus can be due to non-adherence: check levels if patient is prescribed regular ASMs

ASM name	Plasma level	Within therapeutic range?
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> Yes <input type="checkbox"/> No