

Neurologic Prognostication After Cardiac Arrest

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Disclosures:

None

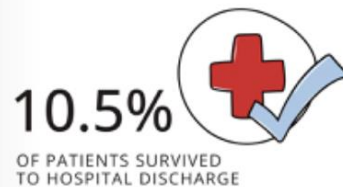
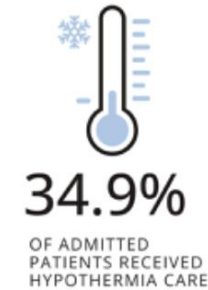
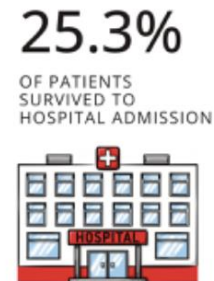
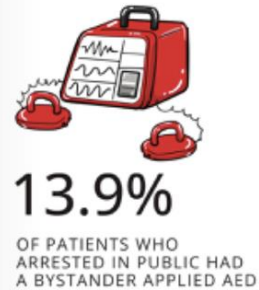
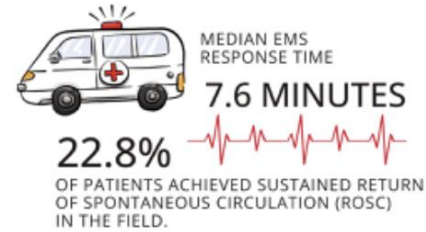
The Numbers



140,427

**NON-TRAUMATIC, WORKED OHCA'S
WERE REPORTED TO CARES IN 2025.**

The CARES 2025 dataset represents a population of 175.8 million, approximately 52% of the U.S. population. More than 2,600 EMS agencies and over 2,200 hospitals were included in 2025 reporting.



The Numbers

- In-hospital arrests had a 27% survival rate with 80% having a good neurologic outcome

The Numbers

- >80% of patients will remain comatose at 1 hour
- ~50% remain comatose at 72 hours after return of spontaneous circulation (ROSC) or rewarming
- The most common cause of death in cardiac arrest survivors is withdrawal of life-sustaining therapy (WLST)
 - 40-80%
 - A large portion are done based on poor neurologic prognosis

Key Points

- Don't rush it
 - No guidelines recommend prognostication before 72 hours from ROSC/rewarming
 - Remember that ~30% of patients who present with nonreactive pupils may end up with good outcome
- Prognostication needs to be multimodal
- If in doubt... give more time (up to 10-12 days) and reevaluate

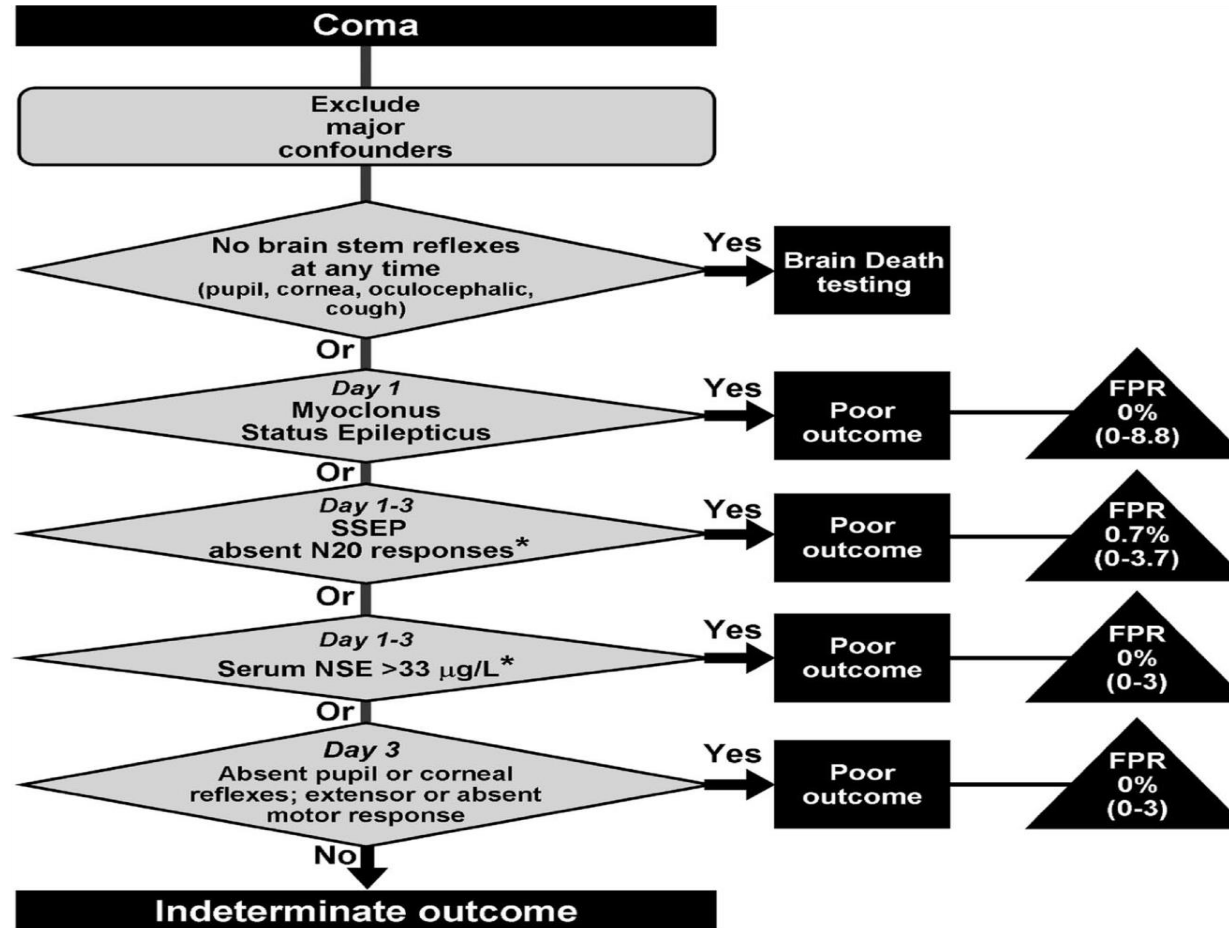
Communication

- Never tell the family you are 100% certain they will do poorly within the first 24 hours.
 - Unless CTH already shows diffuse sulcal effacement and tonsillar herniation
- Explain targeted temperature management
 - “Only intervention shown to improve outcomes from the brain standpoint”
- Explain the process of Neuroprognostication
 - Detail the different test modalities used
 - Inform them re seizure activity being representative of brain injury

Steps

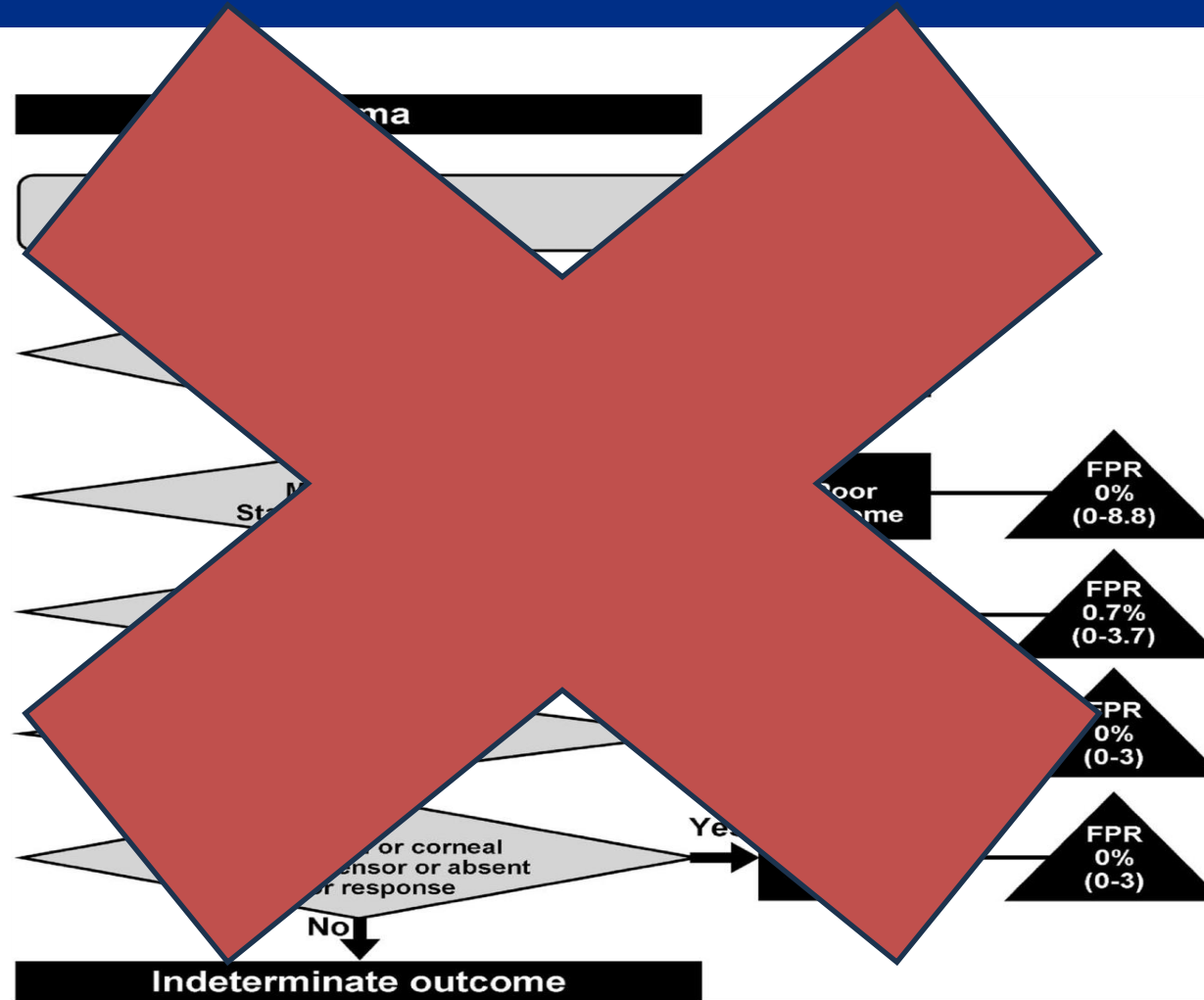
1. Maintain normothermia (days 1-2)
 - Treat any seizure-like activity (even if just shivering)
 - Sedation including propofol encouraged during this time
2. Warm up / wake up (day 3)
 - Wean sedation slowly
 - Ok to resume for seizure-like activity or vent dyssynchrony
 - Use antiseizure drugs for myoclonus (including prn Ativan)
 - Treat sympathetic response appropriately with antihypertensives
3. Get tests (days 3-5)
 - EEG*
 - MRI (vs CT in select cases)
 - SSEP

2006 AAN Practice Parameter



* Wijdicks EFM, Hijdra A, Young GB, et al.: Practice parameter: prediction of outcome in comatose survivors after cardiopulmonary resuscitation (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology* 2006; 67:203–10

2006 AAN Practice Parameter

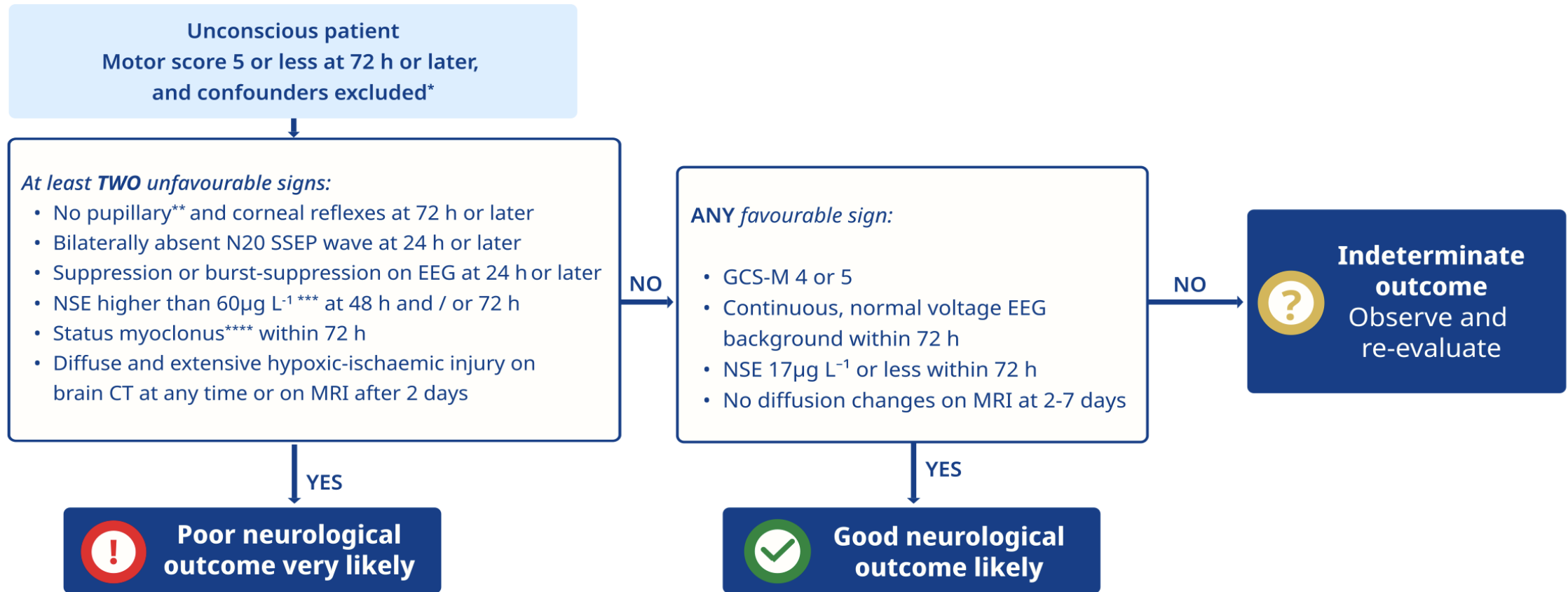


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How Do We Prognosticate

- Updated Guidelines:
 - Post-resuscitation Care Guidelines (European Resuscitation Council and European Society of Intensive Care Medicine 2025)
 - Guidelines for Neuroprognostication in Comatose Adult Survivors of Cardiac Arrest (Neurocritical Care Society 2023)
 - Prognostication After Cardiac Arrest (Critical Care Medicine 2018)

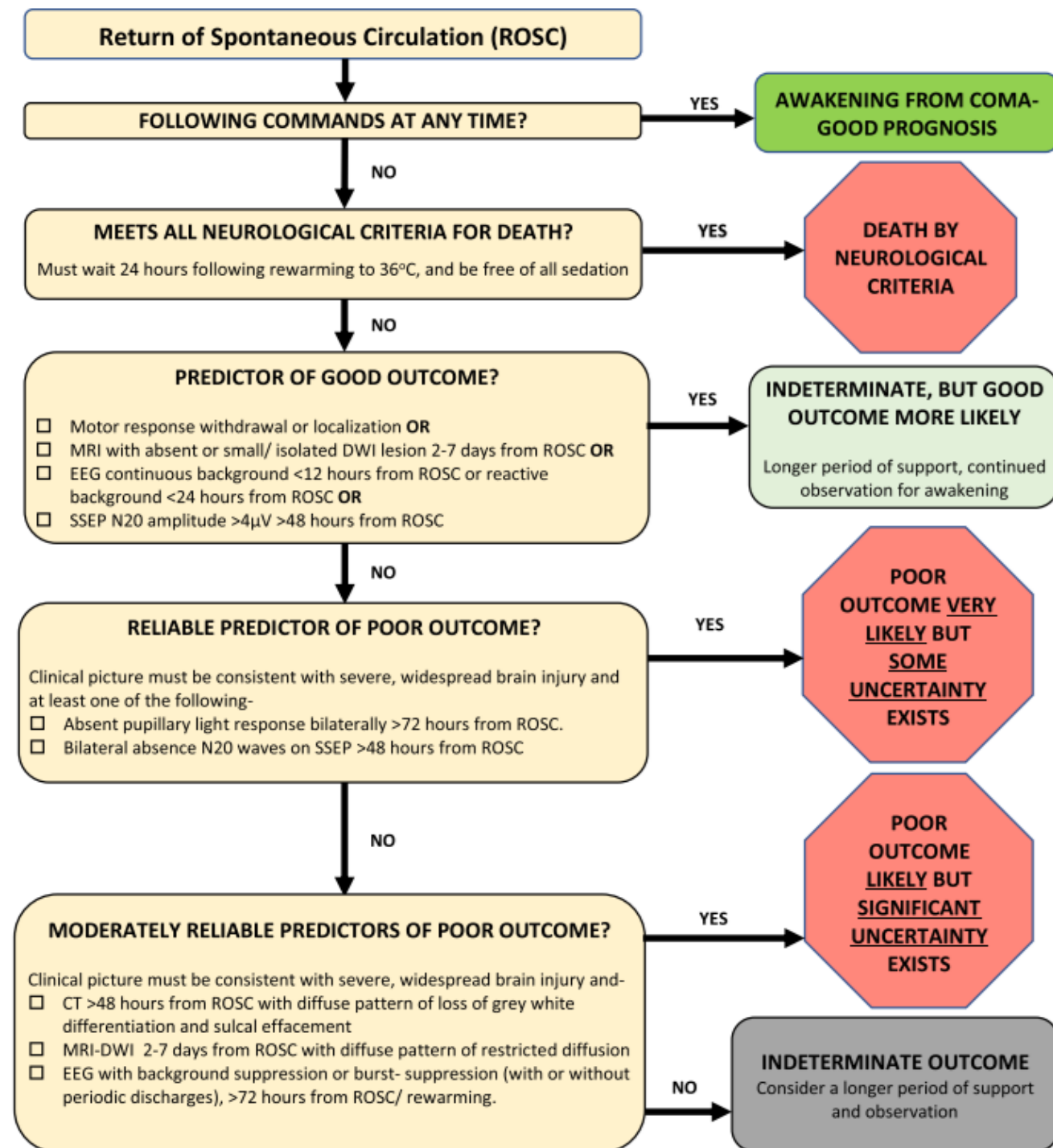
•European Resuscitation Council Guidelines (2025)



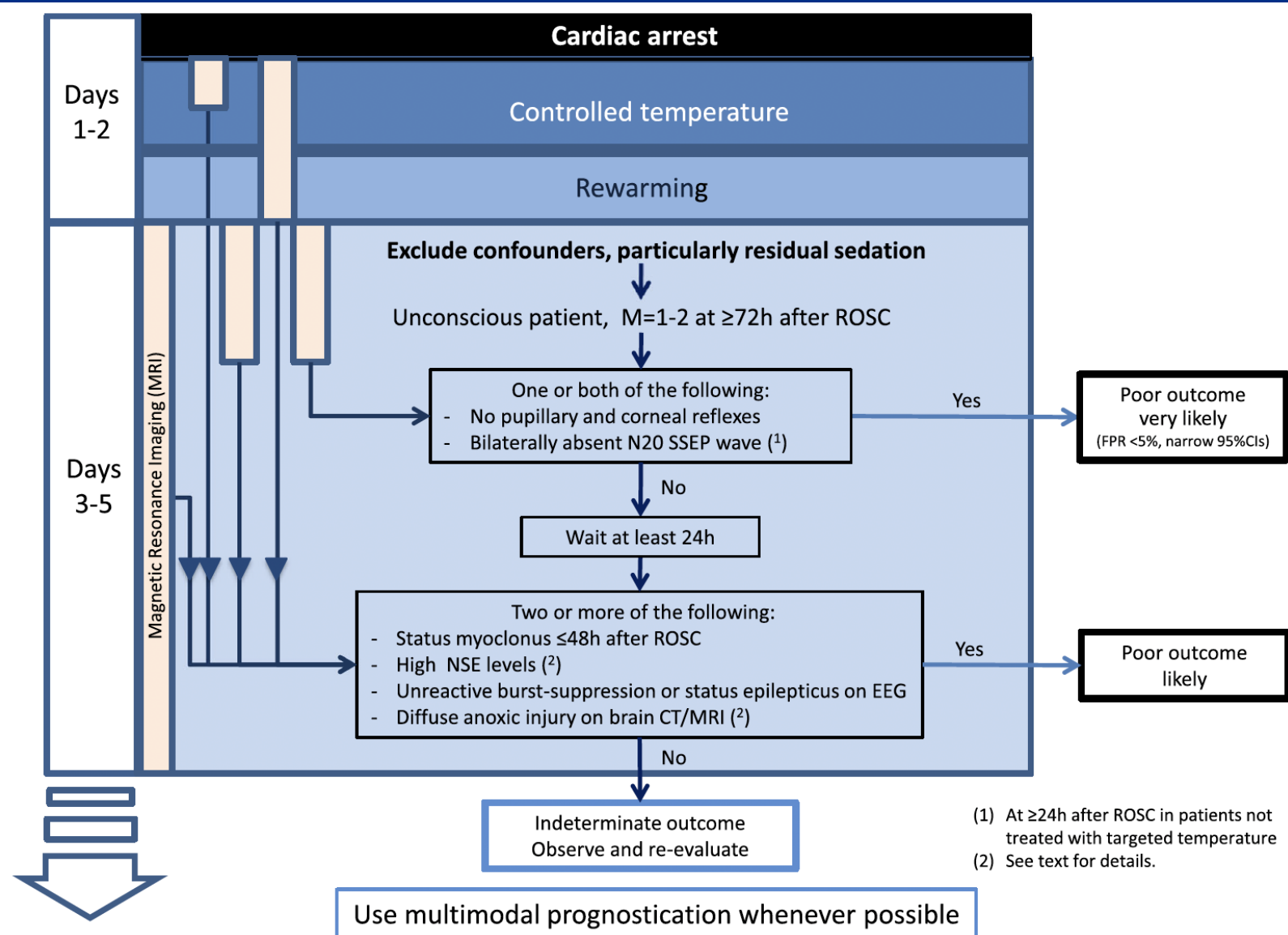
•European Resuscitation Council Guidelines (2025)

- Confounders:
 - sedation/NMB
 - Hypothermia
 - Hypotension
 - Hypoglycemia
 - Metabolic derangements

NCS Guidelines (2023)



Critical Care Medicine(2018)



Primary References

- Cardiac Arrest Registry to Enhance Survival. *CARES 2025 Annual Report*. Emory University School of Medicine; 2026
- Nolan JP, Sandroni C, Cariou A, et al. European Resuscitation Council and European Society of Intensive Care Medicine Guidelines 2025: Post-Resuscitation Care. *Resuscitation*. 2025;215(Suppl 1):110809
- Rajajee V, Muehlschlegel S, Wartenberg KE, et al. Guidelines for Neuroprognostication in Comatose Adult Survivors of Cardiac Arrest. *Neurocrit Care*. 2023;38(3):533-563
- Sandroni C, D'Arrigo S, Nolan JP. Prognostication after cardiac arrest. *Crit Care*. 2018;22:150