CLINICAL PRACTICE GUIDELINE
Guideline coverage includes NICU KEMH, NICU PCH and NETS WA

Arrhythmias and Cardiac Arrest on NICU: Treatment Algorithms

This document should be read in conjunction with the Disclaimer

The following algorithms are to be used for neonates on the NICU, not for resuscitation at birth when the NRP guidelines are appropriate.
See Resuscitation Algorithm for the Newborn

In the event of an arrhythmia or cardiac arrest on NICU consider:

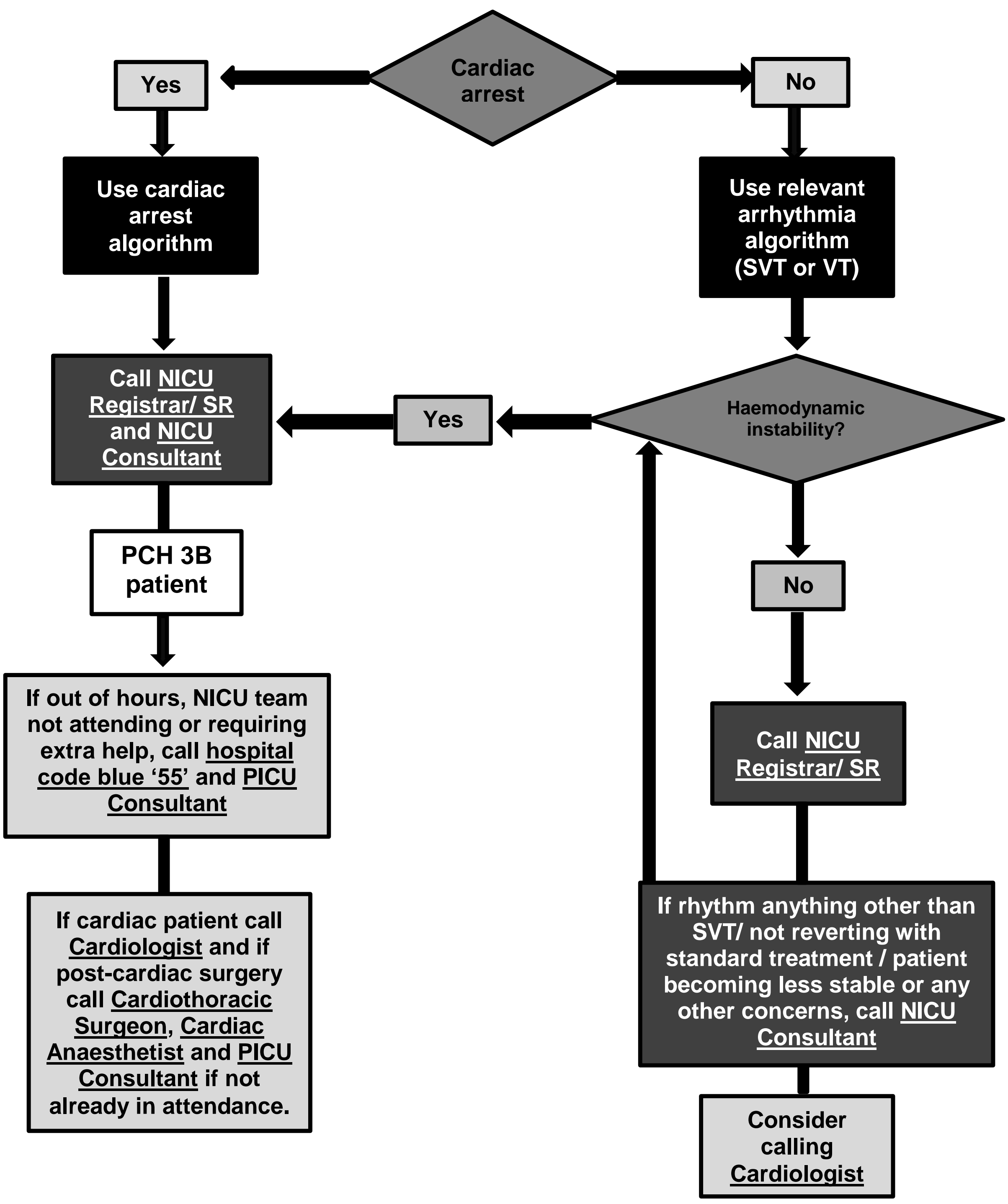
- **ABC**
  - Ensure adequate FiO_2.
  - Consider intubation and ventilation.
  - Vascular access – antecubital cannula preferred (if difficult consider intraosseous).
  - Adequate technique of cardiac compressions/ mask ventilation.
  - If no intra-arterial BP monitoring, then cycle BP cuff every 2 minutes.
- **Underlying causes – identify and correct:**
  - Respiratory
    - Pneumothorax/ accidental extubation/ ETT blockage/ pulmonary haemorrhage.
  - Cardiovascular collapse
    - Blood loss/ sepsis/ cardiac tamponade (PICC/ UVC tip in heart and extravasated – stop infusion).
    - Underlying congenital cardiac abnormality.
  - Metabolic
    - Hypo/ hyperkalaemia, hypocalcaemia, hypoglycaemia.
  - Neurological
    - Intracranial haemorrhage, seizures.
- **Who to call** – see algorithm below.
- Other equipment required eg. Defibrillator. If required for use, see 'Cardioversion and Defibrillation Guideline'.

Who to call algorithm
Cardiac arrest algorithm for NICU
SVT algorithm for NICU
VT algorithm for NICU

Post-resuscitation care:

- Re-evaluate ABCDE.
- Re-evaluate oxygenation and ventilation.
- Identify and treat precipitating causes.
- Consider 12-lead ECG.
- Temperature management – if full cardiac arrest, discussion re: cooling.
- Make sure all relevant personnel and teams aware.
- Are the parents aware?

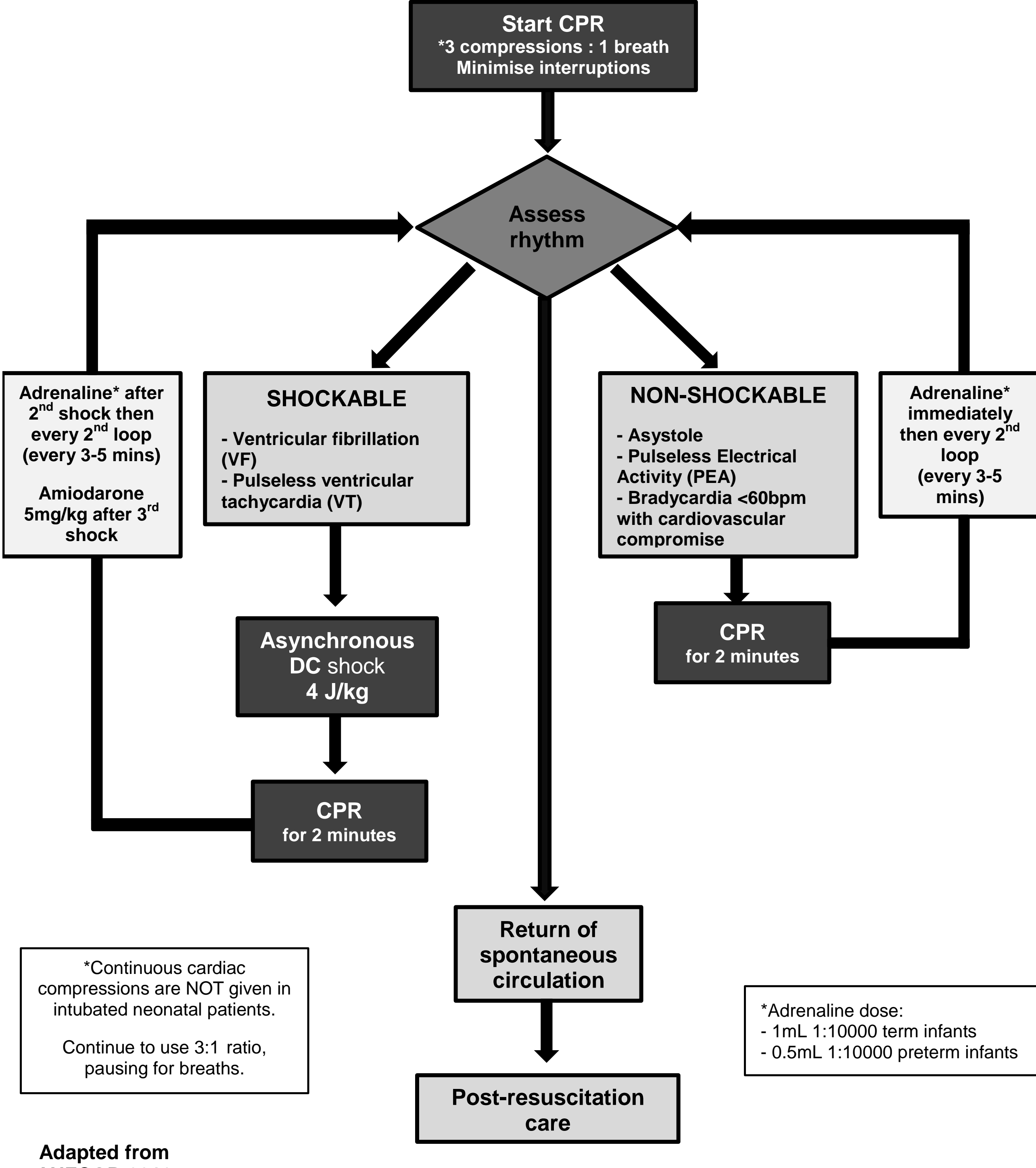
Who to call in the event of an arrhythmia or cardiac arrest:



Guideline as to who should lead an arrest on NICU 3B PCH:

- In general, the most experienced person in attendance.
- The resuscitation lead should be made clear to all staff at the resus.
- If the lead is handed over at any time during the resus, this should be made clear to all staff at the resus.
- Before a consultant arrives, the NICU registrar/ SR should be the lead.
- If a PICU registrar arrives, the resus should continue to be led by the NICU registrar/ SR unless the NICU registrar/ SR is required to be hands on eg. Intubate/ get vascular access.
- Once the NICU consultant arrives, they should usually take over leadership, unless discussed that the trainee will continue to lead with supervision.
- If the PICU consultant has arrived before the NICU consultant and has taken over as leader, when the NICU consultant arrives there will be a discussion between both consultants as to whether the PICU consultant continues or whether the NICU consultant takes over.

Cardiac arrest algorithm for NICU:



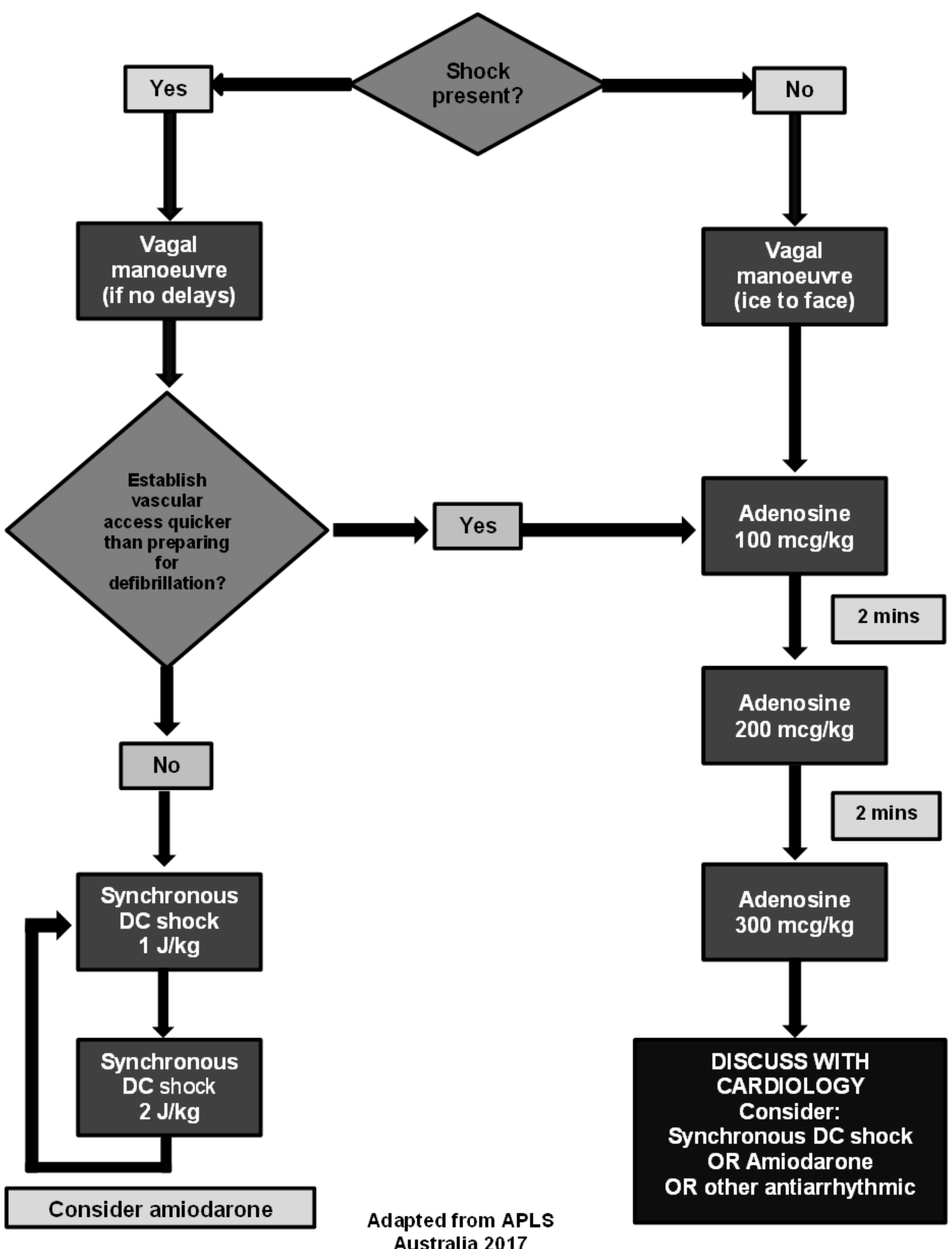
*Continuous cardiac compressions are NOT given in intubated neonatal patients.

Continue to use 3:1 ratio, pausing for breaths.

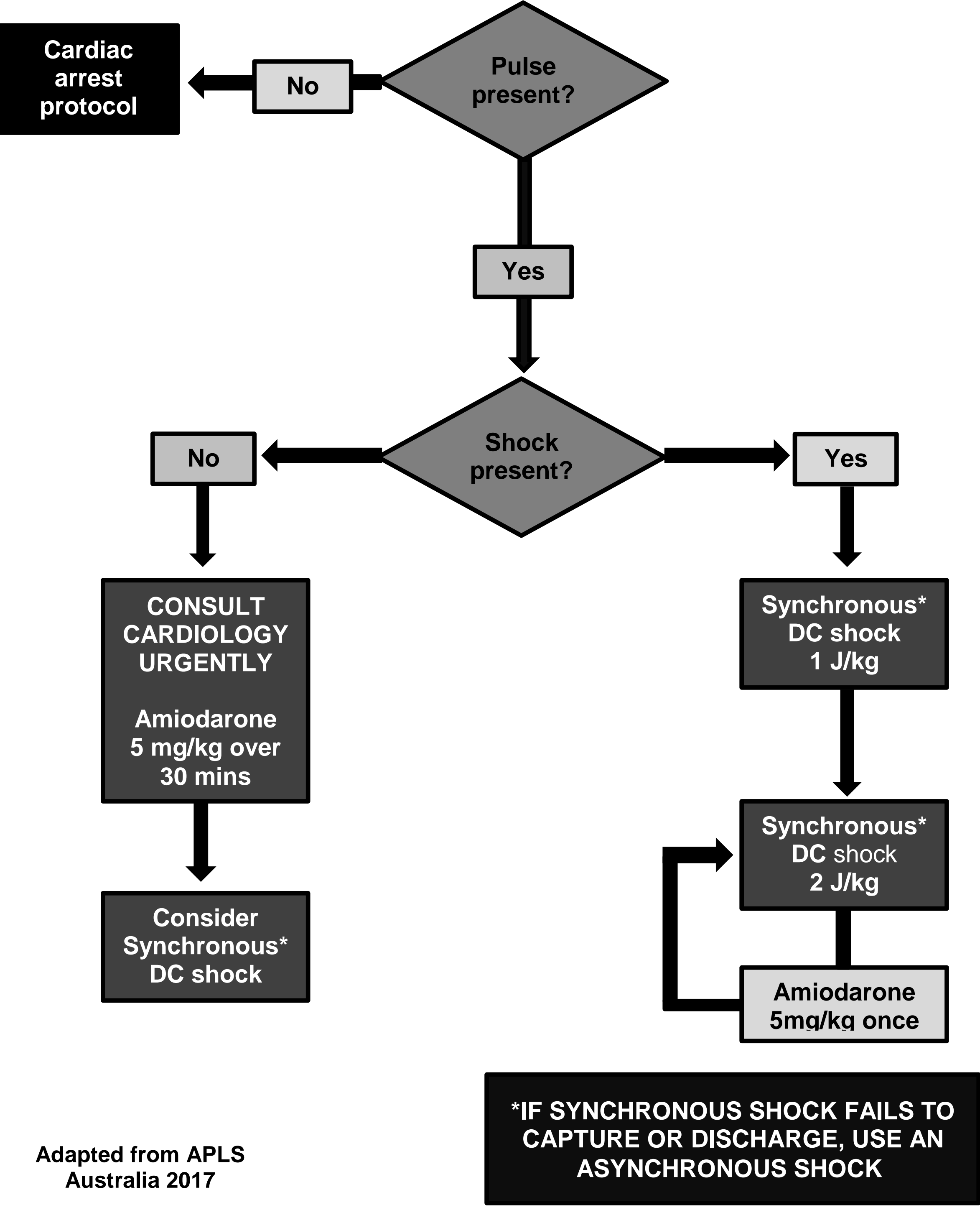
*Adrenaline dose:
- 1mL 1:10000 term infants
- 0.5mL 1:10000 preterm infants

Adapted from ANZCOR 2016

SVT algorithm for NICU:



VT algorithm for NICU:



Related WNHS policies, procedures and guidelines

Neonatal Clinical Guideline – Cardioversion and Defibrillation
Recognising and Responding to Clinical Deterioration

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