



**GUIDELINE**

# Cardiac Arrest and Arrhythmias in NICU: Treatment Algorithms

<b>Scope (Staff):</b>	Nursing and Medical Staff
<b>Scope (Area):</b>	NICU KEMH, NICU PCH, NETS WA

**Child Safe Organisation Statement of Commitment**

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [disclaimer](#)

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## Aim

This policy provides treatment algorithms for neonates in cardiac arrhythmia or cardiac arrest.

## Risk

Failure to identify and responds cardiac arrest and arrhythmias has the potential for poor patient outcomes. Arrhythmia treatment and cardioversion both carry high risk and should only be performed when deemed necessary.

## Key Points

- **The following algorithms are to be used for neonates in the NICU, not for resuscitation at birth when the NRP guidelines are appropriate. See [Resuscitation Algorithm for the Newborn](#)**

## Evaluation and Assessment

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

- **ABC**
  - Ensure adequate FiO<sub>2</sub>.
  - Consider intubation and ventilation.
  - Vascular access – antecubital cannula preferred (if difficult consider emergency UVC / 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.
- Other equipment required e.g. defibrillator. If required for use, see [Cardioversion and Defibrillation Guideline](#).

- For out of hours, consider initiating a CODE Blue to ensure adequate staff and clinical support.

### Allocation of roles during a cardiac arrest

Refer to [Recognising and Responding to Clinical Deterioration](#)

- The most experienced person in attendance should lead the resuscitation. This is generally the NICU registrar or senior registrar until the NICU or PCC consultant arrives
  - If a more experienced person arrives on scene, changes in roles must be clearly communicated
  - Roles may need to change to assist with intubation or to obtain vascular access
  - A registrar or senior registrar may continue to lead the resuscitation under direct supervision of the NICU or PCC consultant

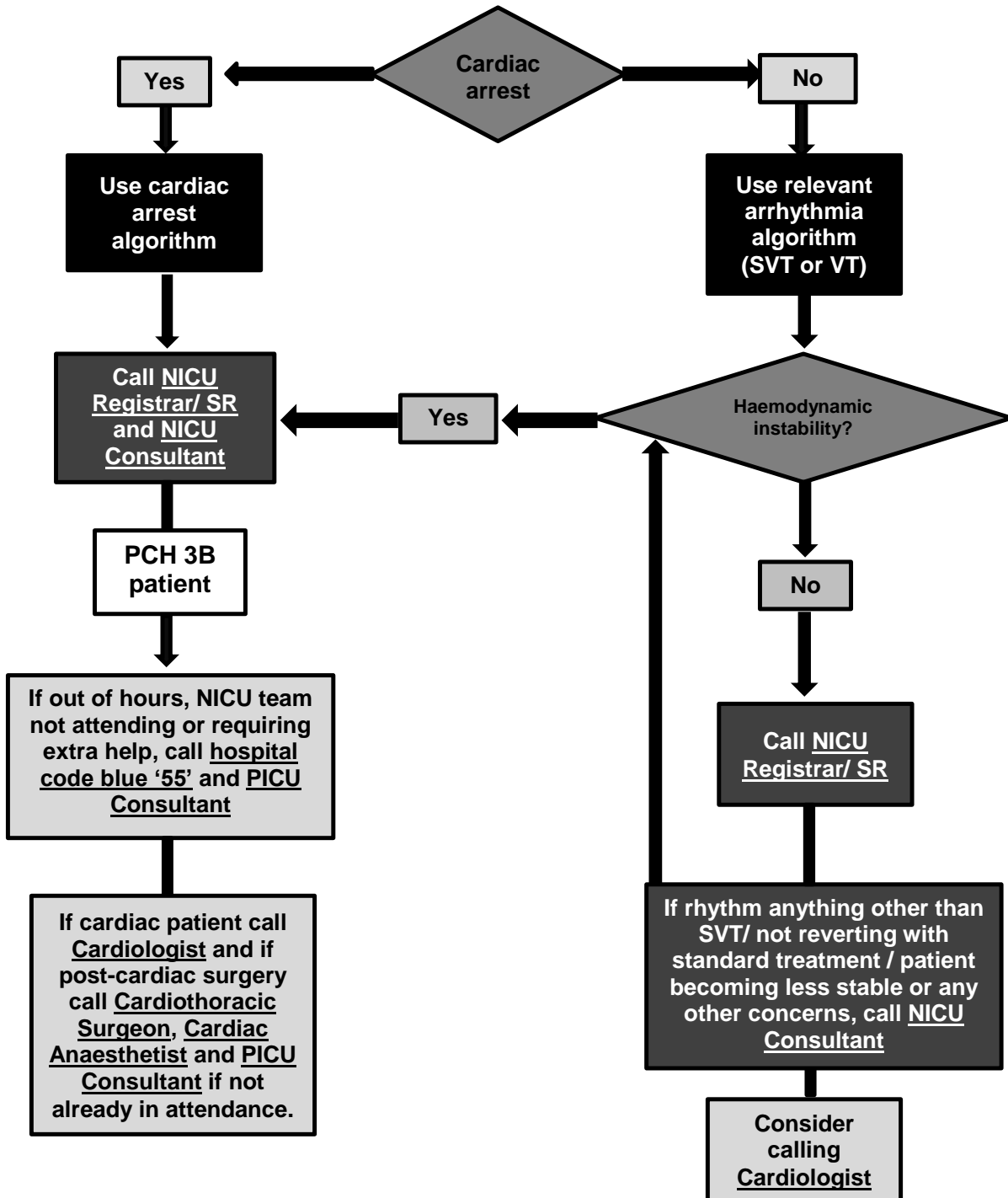
### Workflows and algorithms

- [Who to call in the event of an arrhythmia or cardiac arrest](#)
- [Cardiac Arrest algorithm in the neonatal unit](#)
- [SVT algorithm in the neonatal unit](#)
- [VT algorithm in the neonatal unit](#)

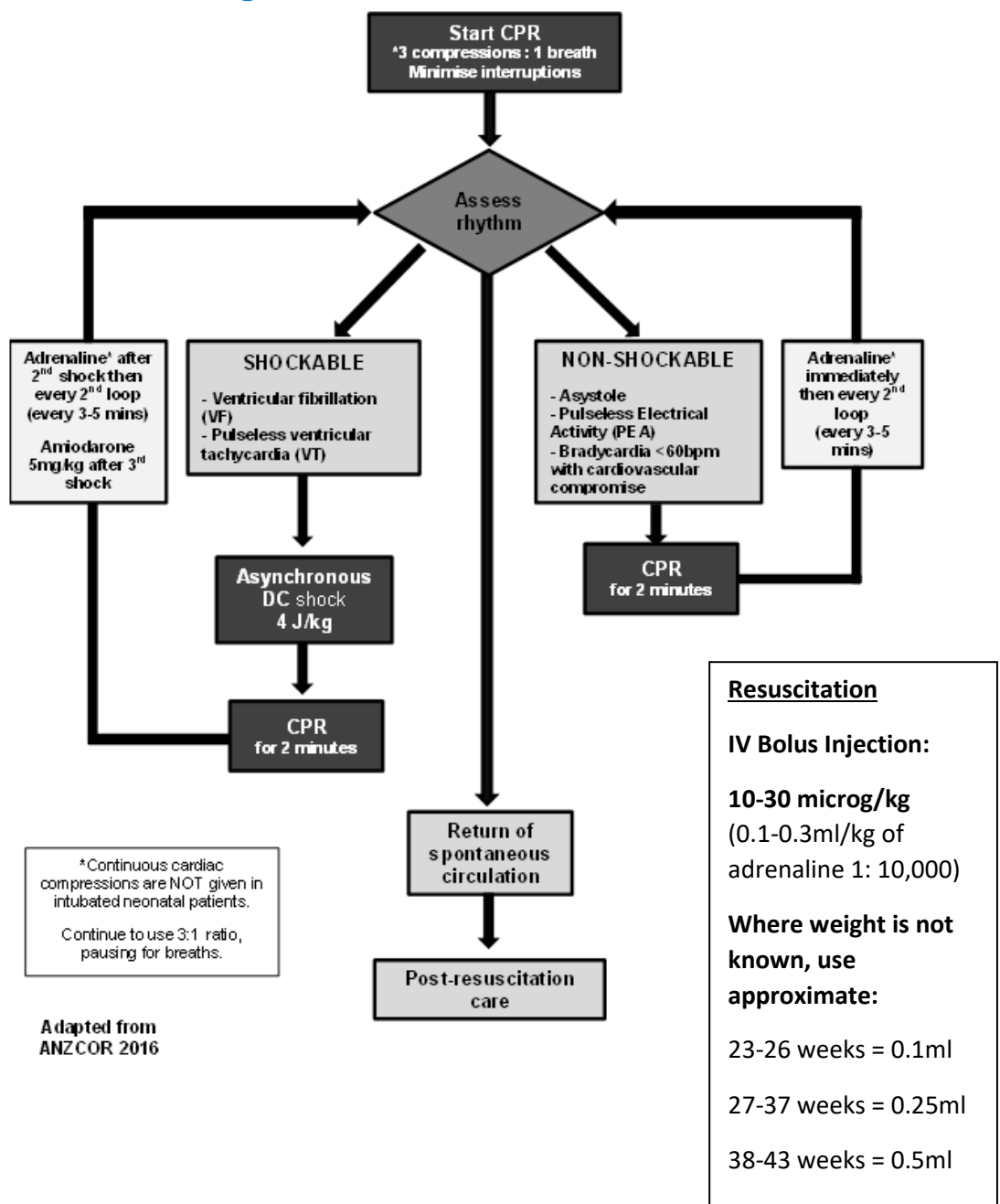
### Post-resuscitation care

- 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.
- Clearly document events and post resuscitation care.
- Consultant to contact parents/caregivers of the event and post-resuscitation care plan.
- Make sure all treating specialties and relevant support services are aware of the event to provide support to the family.

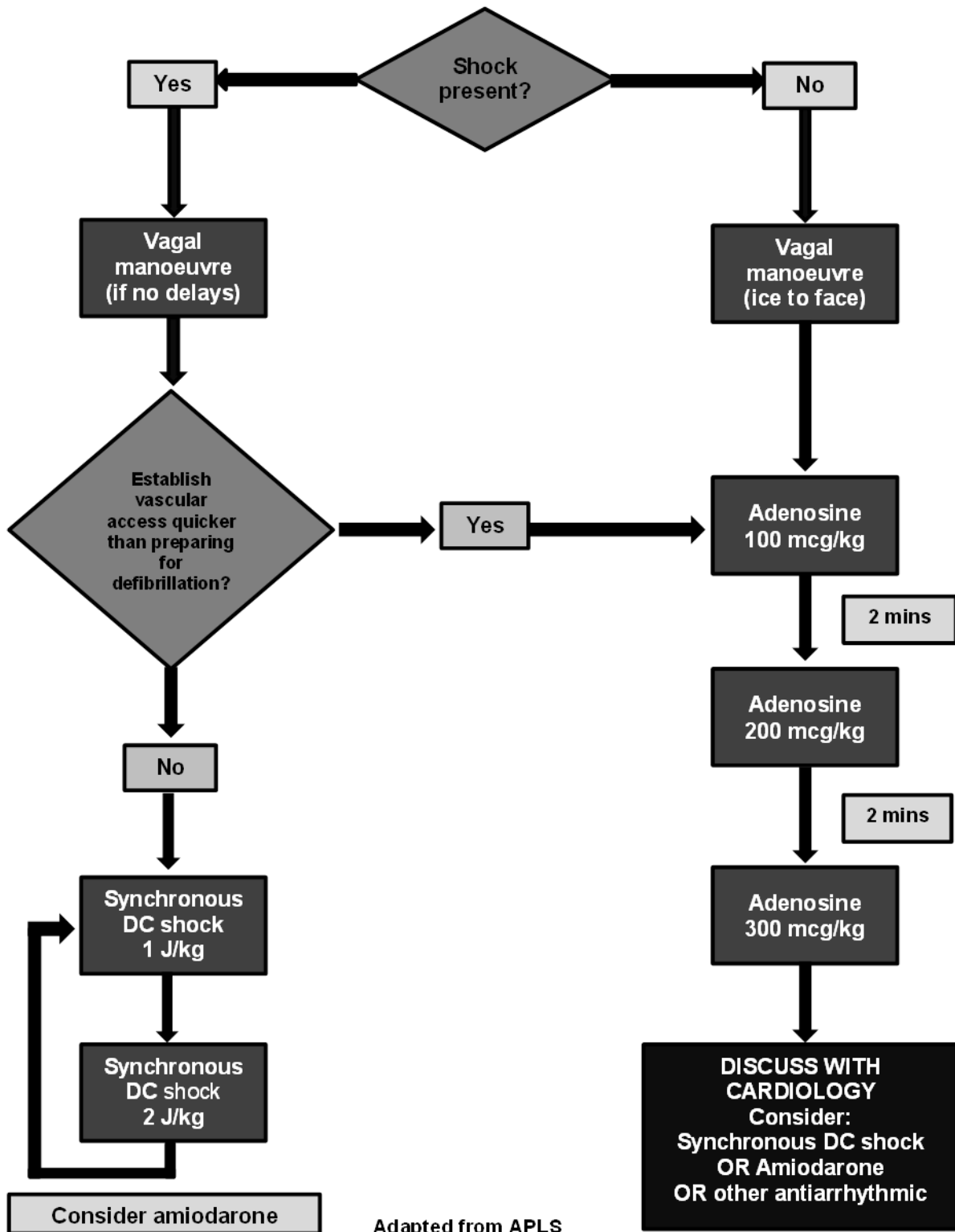
### Who to call in the event of an arrhythmia or cardiac arrest:



**Cardiac arrest algorithm for NICU:**

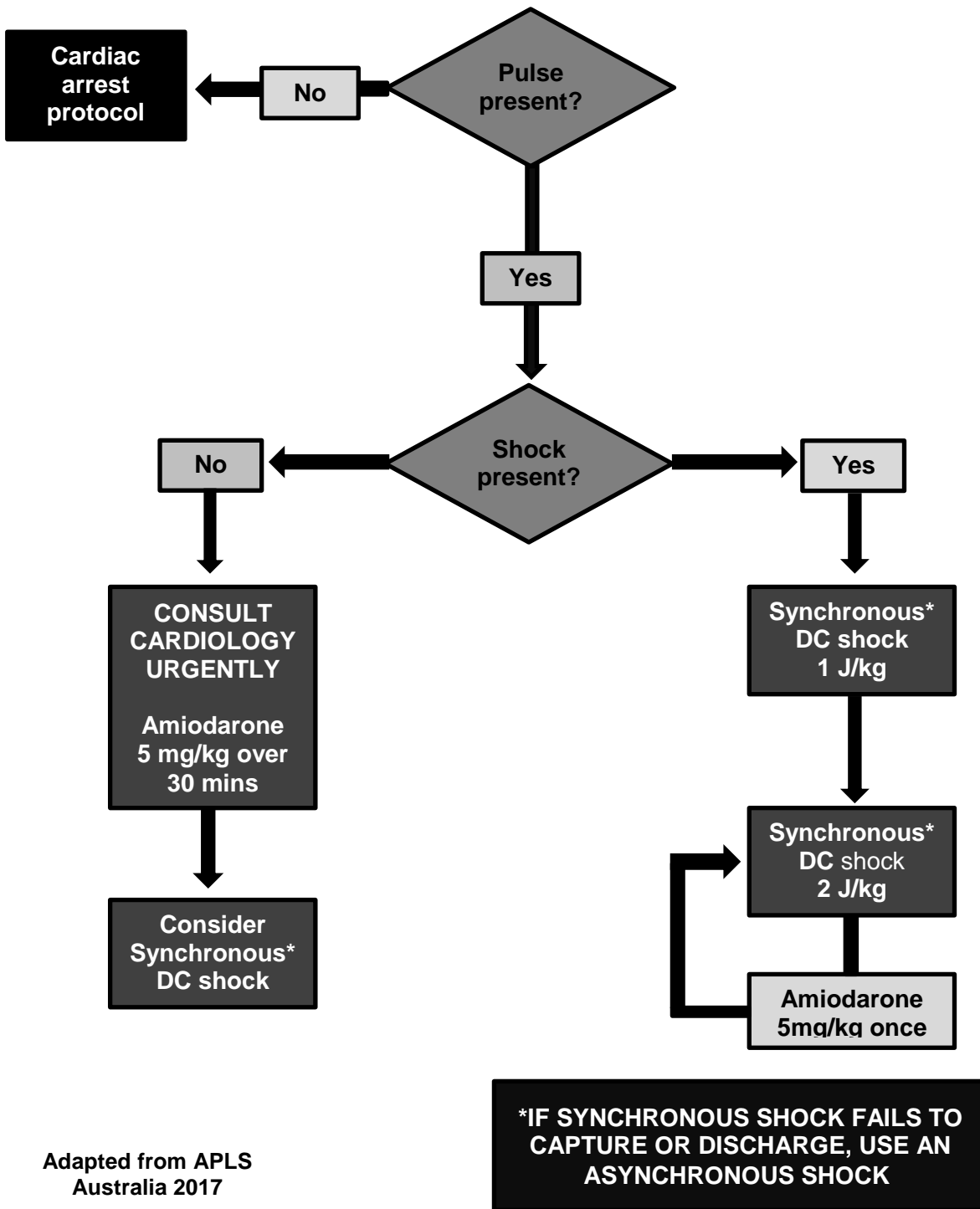


SVT algorithm for NICU:



Adapted from APLS Australia 2017


**VT algorithm for NICU:**



Adapted from APLS Australia 2017

<b>Related CAHS internal policies, procedures and guidelines <i>(if required)</i></b>
<p>Neonatology Guidelines</p> <ul style="list-style-type: none"> <li>• <a href="#">Cardioversion and Defibrillation</a></li> <li>• <a href="#">Recognising and Responding to Clinical Deterioration</a></li> <li>• <a href="#">Resuscitation Algorithm for the Newborn</a></li> </ul>

This document can be made available in alternative formats on request.

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