

Frequently Asked Questions

NEWBORN RESUSCITATION GUIDELINES

When resuscitating a newly born infant, which guidelines should we be using?

In February 2006, the Australian Resuscitation Council (ARC) published its inaugural “Neonatal Guidelines” (Section 13: Guidelines 13.1 – 13.10) available at www.resus.org.au. The ARC guidelines are based on the International Liaison Committee on Resuscitation (ILCOR) 2006 guidelines. NETS are working with key stakeholders to develop a collaborative State-wide approach to implementation of the guidelines.

Where can I buy/find the Australian Resuscitation Council (ARC) guidelines?

The guidelines are available on the ARC web site at www.resus.org.au. An individual/organisation no longer needs to be a registered subscriber in order to download the guidelines, however subscribers gain access to the “Subscriber’s Only” area of the ARC website which holds an extensive document library. Go to the “How to subscribe” link on the ARC website at www.resus.org.au.

You can purchase a hard copy of the complete ARC Manual of Guidelines directly from the ARC by telephoning (03) 9249 1214.

We would like to display a laminated copy of the Neonatal Resuscitation Flow Chart on every resuscitaire. Where can we access a copy of this flow chart?

The neonatal resuscitation flow chart and all of the neonatal resuscitation guidelines can be downloaded free of charge from the ARC web site at www.resus.org.au.

Previously we have utilised the AHA/AAP Neonatal Resuscitation Program (NRP) for teaching resuscitation within our organization. Does NETS Education still teach the NRP program?

The AHA/AAP neonatal resuscitation training program (NRP) contains some recommendations that differ from the ARC Neonatal Guidelines, however the text book & DVD remain an excellent teaching resource. NETS Education are currently utilising an interim teaching program based on the ARC guidelines, pending the development of a definitive State-wide program that should be available within 12 months.

Pedi-Cap CO₂ DETECTORS

Where can we purchase the Pedi-Cap CO₂ detectors and how much do they cost?

The Pedi-Cap CO₂ detectors are supplied through Tyco Healthcare. They cost approximately \$56.00 for a box of 6. Contact Tyco Healthcare on 1800 252 467. NETS have a teaching resource on the use of the Pedi-Cap on the NETS homepage at www.netsvic.org.au.

PLASTIC BAGS FOR NEWBORNS LESS THAN 28 WEEKS GESTATION

I have read in the ARC 2006 Neonatal Guidelines that infants born at less than 28 weeks gestation should be placed immediately after birth, wet and warm, into a polyethylene bag. Where can we buy these bags?

A polyethylene bag is a food grade, heat resistant bag. You can purchase a box of Glad™ “zip lock” bags or similar from the supermarket. *Do not purchase* roasting bags (“chook” bags), which are made from polyurethane.

The supplier NETS use is Venus Hartung. The bags are called “Magic Seal” bags. They cost approximately \$68.33 for 1000 bags. The size NETS purchase is 11 inches by 15 inches. Contact Venus Hartung on (03) 9428 4652.

OXYGEN/AIR FOR RESUSCITATION

We have a Neopuff, but we don't have medical air in our birth suites and operating theatres. If the ARC recommends commencing resuscitation with air, should we go back to using the Laerdal bag (without gas flowing through it) for resuscitation or continue to use the Neopuff with 100% oxygen?

The ARC (2006) guidelines state:

“If a supply of medical air is not available then oxygen should be used” (Guideline 13.4, p.6). While it is acknowledged that many maternity units do not have piped medical air in the birth suites, a cylinder of medical air can be attached to a resuscitaire beside the oxygen cylinder with ease. Your neonatal equipment provider will be able to assist you setting up air and oxygen on your resuscitaire.

In the absence of ready access to medical air, there are a number of options, none of which are “wrong”:

- If a medical air/oxygen mix is available, start resuscitation (using the Neopuff) with air (21% oxygen). If the baby’s heart rate does not increase to above 100 beats per minute by 90 seconds, despite *effective* ventilation (the chest must move with each inflation), then change to 100% oxygen.
- Remember the most important part of any resuscitation is adequate ventilation. If a baby’s heart rate remains less than 100/min you must ensure effective ventilation i.e. making sure there is a good mask seal and/or turning up the peak inflating pressure on the Neopuff, before increasing the oxygen concentration.
- If only 100% oxygen is available use the Neopuff with 100% oxygen.
- If a self inflating bag (e.g. Laerdal) is your primary manual ventilation device commence resuscitation with room air and only add 100% oxygen if required (as above).

Each hospital must develop and implement a consistent policy based on their current equipment profile.

Should we be using pulse oximetry to titrate the concentration of oxygen administered to the newly born infant in the birth suite/theatre?

There is now widespread consensus that oximetry should be used (if available) for all “high risk” and pre-term births. Since publication of the 2006 neonatal guidelines there has been emerging evidence to support using oximetry to titrate the concentration of supplemental oxygen against an infant’s requirements, bearing in mind the normal changes seen in the first minutes of life.

At birth, the SpO₂ of a NORMAL baby is about 60%. Many normal babies take at least ten minutes to achieve an oxygen saturation of 90%. Therefore, during the first minutes after birth, a SpO₂ between 60% – 90% (in the presence of a heart rate above 100 beats per minute) is not an indication to commence supplemental oxygen.

A major benefit of using pulse oximetry in the birth suite/theatre is that it provides a continuous display of the baby’s heart rate within about a minute of birth. To obtain the fastest display, the pulse oximeter should be turned on first, the sensor should be placed on the right hand or wrist (pre-ductal) and **then** plugged into the oximeter cable. An obviously increasing or decreasing heart rate is the best sign that the infant’s condition is improving or deteriorating.

Hyperoxia should be avoided, especially in the pre-term infant. The concentration of oxygen should be weaned once the pre-ductal SpO₂ is greater than 90%.

When do you change the compression/ventilation ratio from 3:1 to 15:2?

There is a paucity of evidence to guide practice in this area. The 3:1 ratio emphasises the importance of ventilation in the fluid-containing, unexpanded lung at birth. Given apnoea/compromised respiratory effort is the commonest cause of severe bradycardia/circulatory arrest in the first weeks of life it is not unreasonable to use the 3:1 ratio outside the newborn period.

One approach may be to choose a cut off time for the change over. For example, the time of discharge home from hospital after birth. Hospitals must develop their own policy regarding compression: inflation ratios, taking into consideration the different areas of the hospital where newborns, neonates and infants are nursed and the specific areas of the hospital in which staff work. A ratio of compressions to inflations of 15:2 is recommended for health professionals skilled in advanced resuscitation techniques. A ratio of 30:2 is recommended for providers of basic life support.

For further information regarding compression to ventilation ratios, refer to the “Frequently Asked Questions” (FAQ) section on the ARC website at www.resus.org.au. FAQ 10 and FAQ 11 discuss compression to ventilation ratios for newborns and paediatric patients in some detail.