Frequently Asked Questions

RESUSCITATION GUIDELINES & TEACHING PROGRAMS

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). These are available at: www.resus.org.au. The ARC guidelines are based on the International Liaison Committee on Resuscitation (ILCOR) 2006 guidelines.

The America Heart Association/ American Academy of Pediatrics (AHA/AAP) has also published new guidelines, but these differ from the Australian guidelines in some areas. As a number of existing programs in Victoria draw heavily on the USA "Neonatal Resuscitation Program" it is recommended that teaching programs on delivery room resuscitation be modified to comply with the Australian guidelines.

NETS staff are working with key stakeholders to develop a collaborative Statewide approach to implementation of the Guidelines.

Where can I buy/find the Australian Resuscitation Council (ARC) guidelines?
The guidelines are available for viewing on the ARC web site at www.resus.org.au
To download and print them, an individual/organisation needs to be a registered subscriber. To subscribe, go to "How to subscribe" link on the website.

You can purchase a hard copy of the complete Manual of Guidelines (2006) at a cost of $143.00, or just section 13 (Neonatal Guidelines). Section 13 normally costs $11.00, but this has been sponsored and complementary copies are available for all maternity units. Telephone Fisher & Paykel on (03) 9879 5022 for a complementary copy.

We would like to purchase a laminated copy of the Neonatal Resuscitation Flow Chart to display on every resuscitaire. Where can we buy these?
These are not available from the ARC. For ARC subscribers a flowchart can be downloaded from the website.

I have heard that the new Neonatal Resuscitation Program (NRP) 5th Ed (AHA/AAP) is now available. Should our hospital purchase this text book? Will NETS Education be teaching this program?

As with their 2006 *guidelines*, the AHA/AAP's *teaching program* (NRP) contains some recommendations that differ from the Neonatal Guidelines of the Australian Resuscitation Council. The text book & DVD remain an excellent teaching resource. NETS Education are developing an interim teaching program/resource pack pending the development of a definitive statewide program that should be available within 12 months.

PLASTIC BAGS or WRAP FOR < 28 WEEK GESTATION INFANTS

I have read in the new Australian Resuscitation Council 2006 guidelines that infants born less than 28 weeks gestation should be placed immediately after birth into a polyethylene bag. Where can we buy these bags?

A polyethylene bag is a food grade, heat resistant bag. You can purchase a Glad® "zip lock" bag or similar from the supermarket. *Do not purchase* roasting bags ('chook' bags).

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

PEDI-CAP® CO_2 DETECTORS

Where can we purchase the Pedi-Cap CO_2 detectors and how much do they cost?

The Pedi-Cap® CO_2 detectors are supplied though 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 use of the Pedi-Cap on the NETS homepage at www.netsvic.org.au.

OXYGEN/AIR FOR RESUSCITATION

We have a Neopuff, but we don't have medical air in our delivery 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). Most maternity units do not have medical air in the delivery suites or on the resuscitation trolleys.

Medical air cylinders can be attached to modern resuscitation trolleys next to the oxygen cylinders.

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 >100 /min 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 <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 this.

- 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 delivery room?

The ARC neonatal guidelines states: *"Although experts have suggested that pulse oximetry be used to titrate the concentration of supplemental oxygen against an infant's requirements there is insufficient evidence to recommend this technique at the moment"* (Guideline 13.4, p.6).

At birth, the SpO_2 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 few minutes after birth, a SpO_2 between 60% – 90% is not an indication to commence oxygen.

The benefit of using pulse oximetry (for 'at risk' infants) in the delivery room, with the sensor placed on the right hand or wrist, is that it provides a continuous display of the baby's heart rate within about a minute of birth. An obviously increasing or decreasing heart rate is the best sign that the infant's condition is improving or deteriorating. (Guideline 13.3, p.2)

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

The ARC guidelines (2006) state "*this document is intended to apply specifically to newborn infants although many of the principles are applicable throughout the neonatal period. The term "newborn" refers to the infant in the first few minutes to hours following birth. The neonatal period is defined as the first 28 days of life". (Guideline 13.1.p. 1).*

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 may 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 for health professionals skilled in advanced resuscitation techniques. A ratio of 30:2 is for providers of basic life support.