AUSTRALIAN RESUSCITATION COUNCIL

NEW ZEALAND Resuscitation Council
Whakahauora, Aotearoa

SUMMARY OF MAJOR CHANGES TO NEONATAL LIFE SUPPORT GUIDELINES DECEMBER 2010

GUIDELINE 13.1 Introduction to Resuscitation of the Newborn Infant	• Expanded section on temperature management, including recommendations for environmental temperature and other mechanisms for preventing heat loss during neonatal resuscitation, and expanded discussion of hyperthermia. • Equipment list has been re-organised and clarified, including clarification of which items are essential and which are optional or alternative. Laryngeal mask airways and intraosseous needles have been added. • Section added about timing of cord clamping.
GUIDELINE 13.2 Planning for Neonatal Resuscitation and Identification of the Newborn Infant at Risk	• Recommendation that training or refresher courses should take place at least annually.
GUIDELINE 13.3 Assessment of the Newborn Infant	• Initial assessment should address tone, breathing and heart rate, while subsequent assessment throughout the resuscitation is based on the infant's heart rate, breathing, tone and oxygenation. Oxygenation is preferably assessed using pulse oximetry.
GUIDELINE 13.4 Airway Management and Mask Ventilation of the Newborn Infant	• Increased emphasis that in general, nasal, oral and pharyngeal suction should not be used except when babies show obvious signs of obstruction either to spontaneous breathing or to positive pressure ventilation, or where removal of secretions is needed to visualise the vocal cords during intubation. • Statement (reflecting ILCOR consensus) that there is insufficient evidence on which to recommend a change in current practice of performing endotracheal suctioning of non-vigorous infants who have been exposed to meconium stained fluid, although there is an absence of good quality evidence that it improves outcomes. Clearer recommendation that if this procedure is done, it must be done very promptly so as to minimise delay in establishing breathing and before spontaneous or assisted respirations have commenced. Babies exposed to meconium in amniotic fluid should be considered at increased risk (compared to those not exposed) for needing resuscitation and for later complications, and should be assessed carefully.

	• Instructions for resuscitation devices have been changed to improve accuracy and clarity. • A description of the potential role of inflation breaths, and expanded explanation of the role of PEEP in resuscitation have been added. • Recommended initial pressure settings for term infants; PIP 30 cm H_2O, PEEP 5 cm H_2O, and for preterm infants; PIP 25 cm H_2O, PEEP 5 cm H_2O. Pressures should be adjusted according to response. • The section on role of oxygen in neonatal resuscitation has been expanded. For term babies, commencement of resuscitation in room air is more strongly endorsed. For premature babies, resuscitation can be commenced either in room air or in blended air and oxygen. For both, use of pulse oximetry is recommended to determine whether supplemental oxygen should be provided. Where supplemental oxygen is needed, the use of blended air and oxygen is more strongly encouraged. A new table of target saturations is provided to guide the use of supplemental oxygen. • Algorithm has been simplified to reflect the text of guidelines. Encouragement to consider the need to call for help has been added, as has the table of target saturations.
GUIDELINE 13.5 Tracheal Intubation and Ventilation of the Newborn Infant	• Indications for endotracheal intubation have been clarified. • A new table has been inserted to optimise selection of correct insertion depth for endotracheal tubes. However, when the weight of the newborn is not accurately known or estimable, the formula "Insertion depth (in cm) = weight (in kg) plus 6" is still appropriate. • Equipment list has been modified to match the list in Guideline 13.1. • Instructions for verifying correct endotracheal tube position have been clarified. • Instructions for use of a laryngeal mask airway have been added.
GUIDELINE 13.6 Chest Compressions During Resuscitation of the Newborn Infant	• Endorsement of the two thumb technique as the preferred technique for chest compressions has been strengthened. The role of the two finger technique is suggested only as an interim technique in circumstances when using two thumb technique would critically impede access that is needed to the chest or abdomen for procedures such as thoracentesis or paracentesis. In these circumstances, changing the position of the operator (to face the baby's feet instead of the head) is suggested as an alternative to allow continuation of two-thumb compressions in these circumstances. • Stronger statement about the importance of avoiding interruptions in the continuity of chest compressions.
GUIDELINE 13.7 Medication or Fluids for the Resuscitation of the Newborn Infant	• Umbilical venous catheterisation is moved upwards among the routes for administration to emphasise that it is usually the preferred route for administration of adrenaline. Endotracheal adrenaline can be given while intravascular access is being established, but unless the heart rate rises in response, it should not delay the administration of intravenous adrenaline. • Volume expanding fluids are recommended only when there is evidence for, or strong suspicion of hypovolaemia, because of some emerging evidence that routine fluid boluses can cause harm. • Sections on naloxone and sodium bicarbonate have been removed because they are not recommended for use during neonatal resuscitation.

GUIDELINE 13.8 Resuscitation of the Newborn Infant in Special Circumstances	• More detailed recommendations in relation to premature infants, in particular in relation to gentle handling, thermal management, strategies for respiratory support, and use of oxygen. • Section on "resuscitation of the apparently stillborn infant" removed, because in these circumstances resuscitation should proceed according to standard guidelines, which allow for rapid escalation of treatment for infants who are failing to respond.
GUIDELINE 13.9 After the Resuscitation of a Newborn Infant	• Table on Apgar scoring removed because of lack of consensus in the literature as to how Apgar sub-scores should be assigned, including not only the exact definitions of scored items, but also how factors such as prematurity and treatment measures should be taken into account. • Recommendations for scope of continuing care after resuscitation have been expanded and clarified, under the headings; Cardiorespiratory management, Blood glucose management, Antibiotics, Induced hypothermia for hypoxic ischaemic encephalopathy, and Stabilisation and transfer.
GUIDELINE 13.10 Ethical Issues in the Resuscitation of the Newborn Infant	• Section on Initiating resuscitation has been expanded to include a clearer definition of circumstances where resuscitation is not indicated, where it is nearly always indicated, and where parents and clinicians should confer and use judgement in deciding whether to initiate resuscitation. • When resuscitation is withheld or discontinued, the importance of focusing care on the comfort of the infant (if signs of life are still present) and on compassionate support of the parents is emphasised.