AUSTRALIAN RESUSCITATION COUNCIL

FREQUENTLY ASKED QUESTIONS (FAQ)

FAQ 1

The guidelines now recommend that full CPR be given to all those requiring resuscitation. What about victims who may not be breathing but have a pulse?

To determine the need for only rescue breathing you would need to be able to check for a pulse. There is reasonable evidence that rescuers are no more likely to be able to correctly determine if a pulse is present than simply tossing a coin. Accordingly Resuscitation councils all around the world removed the pulse check in 2000. Epidemiological data would suggest that the vast majority of victims requiring resuscitation will be in cardiac arrest – thus requiring full CPR. Furthermore only about half of the victims requiring CPR get any resuscitation before an ambulance arrives. Thus it was considered of greater benefit overall that anyone who is not responsive and not breathing normally should be given CPR rather than not receiving any compressions because the rescuer thought the victim had a pulse. This is very much the case as there is no reliable way for the rescuer to detect a pulse. COMPRESSIONS ARE VITAL.

Will I do harm if I give chest compressions to someone with a beating heart?

There is very little data in this area however you are highly unlikely to do harm. One study has shown that patients who were defibrillated and had immediate CPR for 2 minutes after the shock, regardless of whether a pulse was present or not, were no more likely to have complications. In addition, it is recommended in paediatric resuscitation and common practice in critical care settings for CPR to be given to patients who have a slow heart rate. NO adverse effects have been reported. Based on the available evidence, it appears that the fear of doing harm by giving chest compressions to some who has no signs of life, but has a beating heart, is unfounded.

FAQ 2

How many hands should be placed on the chest when given chest compressions to a child? One or two?

Guideline 6 recommends that two fingers should be used to give chest compressions to an infant. (less than 1 year of age) In children where the size of the child and that of the rescuer can vary greatly it is impossible to make a clear recommendation. Guideline 6 recommends two hands for simplicity of BLS training in that one hand may not always be sufficient whereas two hands will always be. The important focus here is to ensure that the depth of chest compressions is adequate (ie about 1/3 of the chest depth). For some people that will require two hands, for others one hand will be sufficient. Furthermore, when using two hands the full weight of the rescuer may not need to be applied to achieve adequate depth of compressions. Training should focus on achieving adequate compression depth rather than when to use one or two hands for chest compressions in children. Providing adequate depth of chest compression is achieved the use of one hand is acceptable.

FAQ 3

Choking

Guideline 4 outlines the recommended procedure for choking. This is a controversial area mainly as there is a lack of any scientific evidence for making strong clinical guideline recommendations. The Consensus of Resuscitation Science identified that the combination of back blows, chest thrusts and abdominal thrusts could be used to relieve complete foreign body airway obstruction. Where the patient is unconscious then CPR should be used.

It is the use of the chest thrust which appears to be causing some confusion. Chest thrusts are applied:

- At the same point on the chest that is used when providing chest compressions during CPR.
- They are delivered sharper and slower than chest compressions during CPR.

In order to do chest thrusts you need to have the back of the patient supported. This can be achieved by either:

- Placing your other hand on the patients back.
- If the patient is sitting use your other hand to support the back of the chair.
- Have someone stand behind to provide support.
- Stand against a firm surface like a wall.
- Lie the patient down.

It is very hard to state categorically on how to achieve back support when using chest thrusts but the overall principle remains the same. Support the back any way you can.

Remember if chest thrusts cannot be applied continue with back blows. If the patient becomes unconscious commence CPR. The ARC does not recommend the use of abdominal thrusts as there is considerable evidence of harm caused by this procedure.

FAQ 4

Should CPR be done by one or two rescuers?

CPR should be performed by a single rescuer until other rescuers are available, then it may be performed by two rescuers (one performing chest compressions and one performing rescue breaths). There is less interruption to chest compressions if the work is shared between the two rescuers, rather than one person doing it all until tired. Frequent rotation of rescuers (especially the rescuer performing chest compressions) should be undertaken to reduce fatigue.

FAQ 5

SEQUENCE OF EVENTS (ALS FLOWCHART)

What is the role of feeling for a pulse?

The assessment of a pulse is also controversial. This issue has previously been discussed in detail. It is reasonable for practitioners taught to feel a pulse to do so as part of the assessment for signs of life, but to limit the total time taken to 10 seconds.

Why is a single shock technique being advocated?

The default defibrillation technique is now to use a single shock technique rather than a salvo of up to three shocks. The main rationale for this approach is to minimise the interruptions to CPR, which have been shown to be associated with a rapidly decreasing diastolic blood pressure (and coronary perfusion pressure) and a decreased likelihood of successful defibrillation. The shock success for currently used defibrillators is actually very high for the initial shock, and the interruptions to CPR for the second and third shocks in succession are thought in most circumstances to be more detrimental than the incremental success from these subsequent shocks.

For what specific circumstances is the three-shock strategy being retained?

See FAQ 14

Why not assess for a rhythm and a pulse immediately after defibrillation?

The recommendation to immediately start CPR after a shock is based on the fact that the chance of developing a rhythm associated with an output in the first minute or so after defibrillation is extremely small. Starting CPR immediately after defibrillation, irrespective of the electrical success or otherwise, or the attempt at defibrillation, restores blood flow to the brain and heart and creates an environment more conducive to return of spontaneous circulation. A period of at least 1-2 minutes of good CPR appears to be able to increase the likelihood of success of the next attempt at defibrillation. Obviously there is no need for CPR to continue if signs of life return.

What is the exact protocol that should be followed for a persistent shockable rhythm?

The optimal sequence of events that should follow for a persistent shockable rhythm is not known. The sequence cannot be prescribed exactly but the general principles that should be followed are listed here.

- At all times, interruptions to compressions should be minimised.
- After an unsuccessful attempt at defibrillation a 2-minute period of CPR is recommended before the rhythm is reassessed.
- If when the rhythm is reassessed a shockable rhythm persists, repeat defibrillation (second shock).
- After the second attempt at defibrillation on recommencing chest compressions administer 1 mg adrenaline, continue CPR for 2 minutes and then reassess and repeat defibrillation if indicated (third shock).
- Adrenaline should subsequently be administered at a rate of 1 mg approximately every three minutes until Return of Spontaneous Circulation. For simplicity, adrenaline could be administered in alternate loops. A period of at least 1-2 minutes of good CPR is recommended after each dose of adrenaline to help circulate the drug.
- If the subsequent attempt at defibrillation is also unsuccessful, a 2-minute period of CPR is again recommended before the rhythm is reassessed.
- If VF is still present after the administration of adrenaline and one further shock, consider administration of an anti-arrhythmic before defibrillation (fourth shock).
- At any stage if a rhythm is present that should be associated with a pulse, then formal checking for signs of life (including a pulse check) should be performed. If there are no signs of life (including a pulse) then the non-shockable sequence should be followed.

What about the new devices that evaluate CPR quality or the VF waveform?

New devices that evaluate quality of CPR and the defibrillation waveform offer promise in the management of cardiac arrests, but at this stage they need further study before any recommendations can be made.

FAQ 6
'BEST INTERESTS' OF COLLAPSED VICTIMS

First-aiders and professionals endeavouring to render assistance to an incompetent person (eg: child, comatose adult) in need of assistance are sometimes faced with requests by family or others to refrain on the grounds that the person would not have wanted assistance or that the treatment proposed is burdensome.

When the situation applies to an incompetent adult (unable to communicate rationally) who has previously stated in writing their intention, the situation is quite clear and the person's desires must be followed. Of importance, is that spouses and relatives of incompetent adults do not normally have authority to decline treatment of their loved one unless this has been given force by an appropriate legal directive.

If a competent adult states that treatment is not wanted, this request should be followed since to do otherwise is ethically and legally wrong.

However, when the situation pertains to a child (an incompetent legal person), the child's parents or legal guardian have the right to refuse such treatment provided that this is in the 'best interests' of the child. However, medical practitioners, and presumably other professional healthcare personnel, also have a duty of care to always act in the 'best interests' of the child.

When conflict arises, the question arises: what is meant by 'best interests'?

Although used freely in medical and legal contexts, the term 'best interests' is a nebulous term. With respect to children, legally, Courts are directed to act in the 'best interests' of a child in section 68F of the Family Law Act 1975 (Clth). In determining what these might be, consideration must be given to current wishes of the child, relationships with parents and others, any changeable circumstances, the child's maturity, protection from physical and psychological harm and any other matters that the Court considers relevant.

From a practical viewpoint, 'best interests' may be defined from an examination of common law cases involving incompetent adults and children [1].

Essentially, 'best interests' may be defined as:

1. Avoidance of futile treatment. This is somewhat facile. It leads to the question of: What is futility? What may seem futile to one person is not to another, but from a legal common law perspective, it may be stated as actions that only serve to prolong death rather than save life.

2. A consideration of the burden versus benefit of treatment. This requires a consideration of the results of withholding treatment versus its application.

3. Consideration of the quality of life if treatment is given and survival ensues.

When faced with a situation in which it is unclear whether treatment should be given or withheld in the incompetent adult's 'best interests', it is justifiable to give treatment, otherwise a possible benefit may be foregone. If it so happens that treatment is later considered not be beneficial, it can be withdrawn since both ethically and legally, withholding and withdrawing treatment are identical.

1. Tibballs J. The legal basis for ethical withholding and withdrawing of life-sustaining medical treatment in children. (2006) 14 Journal of Law and Medicine 244.

FAQ 7

PAEDIATRIC COMPRESSION-VENTILATION RATIO DURING BASIC and ADVANCED CPR (BY HEALTHCARE RESCUERS)

The question sometimes arises: why is the recommended compression-ventilation ratio for infants and children different from adults?

A compression-ventilation ratio (external cardiac compression [ECM] + rescue breathing) of 30:2 for basic (one-rescuer) CPR was chosen in the Consensus on Science and Treatment Recommendations for all infants (except newborns, i.e. at birth) children and adults, but a ratio of 15:2 chosen for CPR performed by two healthcare rescuers for infants (except the newly-born) and children whenever a pause is required between compressions to deliver breaths [1,2]. These recommendations replace the previous recommendations of 5:1 for two-person rescue of adults, children and infants.

Unfortunately, no studies to determine the optimum compression-ventilation ratio during CPR have been performed in humans, so the recommendations are by extrapolation from studies done in animals, mannequins and computer simulations in which higher compression-ventilation ratios are favoured over lower ratios.

The rationale to recommend a new ratio higher than 5:1 is the following:

1. A ratio of 5:1 may provide unnecessary ventilation. Cardiac output during good CPR is only $^1/_4$ – $^1/_2$ of normal cardiac output so normal minute ventilation is unnecessary for adequate ventilation-perfusion matching in the lungs, and …
2. A ratio of 5:1 may obstruct venous return thereby limiting cardiac output
3. A ratio of 5:1 may excessively lower blood carbon dioxide levels thereby causing cerebral vasoconstriction, and …
4. A ratio of 5:1 frequently interrupts cardiac compressions, causing blood pressure to fall nearly to zero at each interruption, thereby failing to perfuse the cerebral and coronary vascular beds.

Several studies of the performance of adult CPR [3,4] showed that rescuers spent far too much time NOT giving external cardiac compression ('hands-off time') largely because of giving excessive ventilation instead. No equivalent studies have been examined paediatric CPR.

The ratio of 30:2 for adult CPR was chosen to encourage uninterrupted cardiac compression sequences and to decrease unnecessary ventilation.

However, children differ from adults in the following important ways:

1. The different choice of 15:2 ratio for CPR of infants and children is based largely on the requirement of infants and children for higher ventilation rates than adults, and to a lesser extent on the different aetiology of cardiac arrest in children. Of course, infants and children have a wide range of ventilation during illness, ranging from a normal rate, for example, of up to 60/min at 3 months of age, 40/minute at 1 year and up to 30 minute at 12 years of age. There is also a variability of heart rate among infants and children compared with adults but it is less variable than the respiratory rate. Thus while it is reasonable to choose a fixed cardiac compression rate to suit all infants, children and adults, it is less reasonable to choose a single respiratory rate for infants, children and adults. On the other hand, it is not practical to recommend specific rates of compression and ventilation for each child according to each age.

2. A much larger proportion of cardiac arrests due to the sudden onset of ventricular fibrillation occur in adults compared with children. In these victims, the lungs can be expected to contain a store of oxygen and thus ventilation is a lesser priority.

In children, the incidence of ventricular fibrillation in children who arrest in hospital is approximately 10% [5,6,7] whereas the majority are due to other rhythms (asystole, hypotensive bradycardia and electromechanical dissociation) which are usually the result of hypoxaemia or hypotension or both.

Consequently, the consensus of opinion among the paediatricians who participated in the 2010 evaluation of science on resuscitation remained that ventilation should be emphasised as a prominent part of CPR for infants and children, and that a ratio of 30:2 would result in insufficient ventilation.

If 30:2 then provides insufficient ventilation for infants and children – what is the right ratio? The ratio of 15:2 was chosen because it had already been taught as a ratio for children (for single rescuer CPR), had been used successfully and thus would be less difficult to teach than a completely new ratio. Moreover, since healthcare rescuers are more likely to effect a smooth changeover from compressions to ventilation (and back to compressions) than the lay person rescuer, a 15:2 ratio may be a less severe interruption to compressions. It is realised however, that the ideal ratio remains unknown and the current recommendations need testing.

Companion questions are:

a) How much ventilation is recommended after intubation and:
b) How much ventilation is recommended when the circulation returns and ECM is not needed?

a) If ventilation is provided with the use of an advanced airway (eg endotracheal tube, Laryngeal Mask Airway) – that is by healthcare rescuers - where no pause is required for ventilation, the ratio of 15:2, will provide excess ventilation because if compressions are given uninterrupted at 100/minute, a ratio of 15:2 would provide about 13-14 breaths per minute. That may be more than needed for ventilation-perfusion matching in the lungs, so in this circumstance, about 10 breaths per minute is the recommendation.

b) If some circulation returns during resuscitation, yet spontaneous ventilation remains inadequate, an imposed ventilation rate of 12-20/minute is recommended. If normal circulation returns, a normal ventilation rate for age should be given.

1. Consensus on science and treatment recommendations. Resuscitation 2010; 81: 213-259.
2. Australian Resuscitation Council. Guidelines 7; 12.2.
3. Wik L, Kramer-Johansen J, Myklebust H et al. Quality of cardiopulmonary resuscitation during out-of-hospital cardiac arrest. JAMA 2005: 293: 299-304.
4. Abella B, Alvarado JP, Myklebust H et al. Quality of cardiopulmonary resuscitation during in-hospital cardiac arrest. JAMA 2005; 293: 305-370
5. Samson RA, Nadkarni VM, Meaney PA et al. Outcomes of in-hospital ventricular fibrillation in children. NEJM 2006; 354: 2328-39.
6. Young KD, Seidel JS. Pediatric cardiopulmonary resuscitation: a collective review. Anna Emerg med 1999; 33: 195-205.
7. Tibballs J, Kinney S. A prospective study of outcome of in-patient paediatric cardiopulmonary arrest. Resuscitation 2006; 71: 310-318.

FAQ 8
COMPRESSION-VENTILATION RATIO FOR NEWBORNS

Currently being reviewed.

FAQ 9
COMPRESSION ONLY CPR

The available published data reveals conflicting evidence of benefit vs no benefit for compression only CPR. Strategies to improve the number of cardiac arrest patients' receiving bystander should be encouraged but not to the abandonment of conventional CPR. Compression only CPR should be viewed as the first resuscitation step which should be followed as soon as possible by rescue breathing and other basic life support interventions.

The Australian Resuscitation Council continues to hold the view that any attempt at resuscitation is better than no attempt, and if rescuers are unwilling or unable to do rescue breathing they should do chest compressions only. If chest compressions only are given, they should be continuous at a rate of approximately 100/min.

FAQ 10
ENVENOMATON – JELLYFISH STINGS

Why should the rescuer pick off tentacles from the victim following a jellyfish envenomation?

It is recommended in ARC guideline 8.9.6 to pick off adherent tentacles from the victim. Although most of the tentacle stinging cells are likely to have already fired, by removing the tentacles, any unfired nematocysts are also removed. This may lessen the venom load to the patient and this reduction may make a difference to the victim's outcome.

Is it harmful to the rescuer to touch the tentacles while removing them from the victim?

Although most of the nematocysts (stinging cells) will have fired, the small number of remaining unfired cells could cause a mild prickling sensation to be felt by the rescuer. This will not be harmful to the rescuer. Wearing gloves is known to afford protection when picking of the adherent tentacles from the victim.

FAQ 11
THE USE OF A TOURNIQUET

When is it OK to use a tourniquet?

When attempts at direct pressure have failed to control limb haemorrhage and the bleeding is life-threatening.

What should be used?

Generally a purpose made tourniquet (at least as wide as a belt) should be used. In life threatening situations, improvising may be required. Tourniquets may cause or increase tissue injury which can make subsequent limb surgery difficult, so their use should be limited to life-threatening limb haemorrhage. Furthermore, the high-pressure required to control haemorrhage with a narrow tourniquet is associated with increased tissue damage and may lead to an amputation at a higher level.

In a first aid setting an improvised tourniquet should only be used where direct pressure limb haemorrhage control is failing and the victim's life is at risk: by using a tourniquet the rescuer is making a conscious decision to risk the limb to save the victim's life.

It would be incorrect to say that a tourniquet should never be used, however tourniquets should only be considered in extremely serious situations such as those described above and considering that tourniquet use presents considerable risk to the long-term viability and function of the limb.

FAQ 12
CLARIFICATION OF THE USAGE OF "CYCLE" IN THE ARC GUIDELINES

The term "cycle" has been deleted from the advanced life support guidelines (11.2 and 12.3) because it conflicted with its proper meaning in Guideline 8 where it signified, and still does, one bracket of chest compression and ventilation, that is, 30 compressions followed by 2 ventilations. Now, treatment described in algorithms of guidelines 11.2 and 12.3 is referred to not as a "cycle" of treatment but rather as a "loop" of treatment where it signifies a single sequence of events including assessment of the cardiac rhythm, determination whether the rhythm is "shockable" or not, 2 minutes of CPR, assessment of return of spontaneous circulation and re-assessment of the cardiac rhythm.

FAQ 13
NEW ACS GUIDELINES

Does the ARC provide any guidance on the resuscitation, pre-hospital and emergency care of patients with acute coronary syndromes?

The management of patients with Acute Coronary Syndromes in the pre hospital and emergency care setting has been an area of increased research activity over the last 10 years. It is an area that has often been overlooked in guidelines focused on the management of acute coronary syndrome that have tended to focus on immediate and definitive therapeutic interventions once a clear diagnosis has been established.

The current COSTR process devoted a dedicated Task Force formed from the outset to address 25 topics related to the acute initial management of acute coronary syndromes drawing on expert reviewers from Africa, Asia, Australia, Europe, North America, and South America. The 2010 COSTR

has produced an expanded review the available evidence in the area of out of hospital and emergency care of ACS. A complete systematic review of all literature is contained in this document.

For the first time the Australian Resuscitation Council has develop guidelines in this area based on the 2010 COSTR on ACS. Comprehensive guidelines for the diagnosis and treatment of ACS with and without ST elevation have been published by the Cardiac Society of Australia and New Zealand (CSANZ) and the National Heart Foundation (NHF). This section on ACS has been developed to compliment the CSANZ and NHF guidelines.

There are a number of new evaluations that should be highlighted since initial 2005 COSTR that have been outlined in the 2010 document.

These include:

Presentation with ACS

- In isolation the clinical history, clinical examinations, biomarkers, ECG criteria and risk scores are unreliable for the identification of patients who may be safely discharged early in the emergency setting.
- Chest Pain Observations Units (CPUs) have an important role in the safe and effective evaluation of patients presenting with possible ACS. The use of a protocol that includes serial evaluation of physical findings, symptoms, ECG, biomarker testing coupled with further provocative testing or imaging procedures are recommended to identify patients who required admission for further testing and treatment.
- The use of pre- hospital ECG for the diagnosis of ST elevation myocardial infarction is recommended and can be interpreted by a variety of methods including by trained non medical staff in the field, remote transmission or with computer assistance.

Initial Medical Therapy

- Supplemental oxygen should be initiated for breathlessness, hypoxaemia or signs of heart failure or shock however hyperoxaemia may be harmful in uncomplicated myocardial infarction.
- Response of chest pain to nitrate therapy is not reliable for diagnostic purposes.
- Non-steroidal anti-inflammatory drugs other than aspirin should not be administered as they may be harmful in patients with suspected ACS.
- Aspirin may be given by dispatchers or bystanders provided true allergy or a bleeding disorder can be excluded.
- Newer anti-platelet agents have an important role in the early management of ACS.

Reperfusion Strategy

- Clinical reperfusion networks that include emergency medical services and hospitals with an agreed approach to ST Elevation Myocardial Infarction (STEMI) management can be beneficial in achieving best outcomes for patients with ACS.
- Primary Percutaneous Coronary Intervention (PPCI) is the preferred reperfusion strategy for STEMI when it is performed in a timely manner by an experienced team.
- Fibrinolysis continues to be an important treatment modality for many patients when PPCI is not available.
- Acceptable first medical contact to PPCI delays varies depending on the infarct territory, age of the patient, and duration of symptoms.
- Rescue Percutaneous Coronary Intervention (PCI) should be performed if fibrinolysis fails.
- Patients may be directed to PPCI capable facilities in the pre hospital setting bypassing closer Emergency Departments if PPCI can be delivered in a timely manner.
- Patients with successful fibrinolysis but not in a PCI-capable facility should be transferred for angiography and possible PCI at ideally 6–24 h after fibrinolysis.

However immediate routine PCI after fibrinolysis or combination fibrinolysis ('facilitated') is not recommended.

- Immediate angiography and PCI is a reasonable approach to patient with return of spontaneous circulation (ROSC) and may be a part of a standardised protocol for the post arrest care of patients.

FAQ 14
THREE STACKED SHOCKS

Three Stacked Shocks were removed from the standard ALS algorithm as part of the 2010 CoSTR changes. It is now included under the special circumstances in resuscitation guideline.

Where a patient with a perfusing rhythm develops a shockable rhythm in a witnessed and monitored setting and the defibrillator is immediately available and they were previously well perfused and oxygentated pre-arrest then the use of 3 stacked shocks may be considered.

This situation is rare and may occur in the pre-hospital setting, emergency departments, critical care and coronary care units, and possibly also in the operating room. In these settings it may be appropriate to use a 3 stacked-shock technique, especially where there may be a relative contraindication to external cardiac compressions (e.g. after cardiac surgery).

The "3 stacked-shock sequence" can be optimized by immediate rhythm analysis and charging of the defibrillator. This sequence may be of benefit in scenarios where the time required for rhythm recognition and for recharging the defibrillator is short (ie:. <10 seconds). In these situations, such as in-hospital arrests, it would be expected to deliver the sequence of shocks (up to three) in no more than 30 seconds.

FAQ 15
How much head tilt should I use in children?

In unresponsive adults and children, it is reasonable to open the airway using the head tilt - chin lift manoeuvre. While the value of maintaining an open / patent airway is recognised, there is insufficient evidence to recommend one specific airway opening technique (ARC Guideline 4).

With reference to ARC guideline 4, airway management in children should be managed the same as adults however we know that the upper airway in infants is easily obstructed because of its small diameter, and as the windpipe is soft, it can become compressed and narrowed if excessive backward head tilt is applied.

Therefore, in infants, the head should be kept in a neutral position and maximum head tilt should not be used. If simple airway manoeuvres (chin lift) do not open the airway, then a slight backwards head tilt may be needed to open the airway [Class A; LOE Expert Consensus Opinion].

FAQ 16

The Australian Resuscitation Council's position on oxygen administration

Attitudes to oxygen administration are changing as new research is conducted calling into question the safety of oxygen in patients who are not hypoxic. Accordingly many organisations are reviewing their recommendations as to the use of oxygen and a number of guidelines in this regard have been published.

The Australian Resuscitation Council has reviewed oxygen administration at a number of levels. At a first responder/first aid level the current ARC Guideline 10.4 remains appropriate with no significant change required.

At an ALS level the role of oxygen in acute coronary syndrome (ACS) has already been addressed. The ACS Guideline states; “Supplemental oxygen should be initiated if the patient has breathlessness, hypoxaemia, signs of heart failure or shock. There is relatively limited evidence from clinical studies to support the routine use of oxygen therapy in ACS. The use of oxygen saturation monitoring by non-invasive techniques such as pulse oximetry, may be very useful in guiding oxygen therapy. However it is important to understand that hyperoxaemia may be potentially harmful in uncomplicated myocardial infarction”.

Whether the cautions about hyperoxaemia will prove to be applicable to all patients or just in specific patient groups such as ACS and possibly stroke remains to be demonstrated. In addition, there is a lack of consistency as to what value or range of values of oxygen saturation constitutes hypoxaemia.

The Australian Resuscitation Council clearly recommends that hypoxaemia should be avoided. However at this time there is insufficient evidence to clearly state a range of target oxygen saturation or enough clarity to recommend which patient groups the use of titrated oxygen should apply. The ARC will continue to monitor the research and revise its guidelines where the evidence becomes available to support recommendations on targeted oxygen therapy.

In relation to newborn infants, for specific guidelines about use of oxygen and for recommended target saturations, please see Guideline 13.4, Airway Management and Mask Ventilation of the Newborn Infant, pages 10-11.