

Category: Clinical Guidance Statement

C-Obs 32 Responsibility for neonatal resuscitation at birth

This statement has been updated to provide registered health professionals and health care facilities providing intrapartum maternity care with information and recommendations regarding the roles of health professionals in neonatal resuscitation. The update of the statement is approved by the Women's Health Committee, RANZCOG Council and Board.

A list of the Women's Health Committee membership can be found in [Appendix A](#).

Conflict of Interest disclosures were received from all members of this Committee ([Appendix C](#)).

Disclaimer: This information is intended to provide general advice to practitioners. This information should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient. This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The document has been prepared having regard to general circumstances ([Appendix D](#))

First developed by RANZCOG: July 2009

Current version: November 2018 (interim update February 2023)

Review due: March 2028

Objectives:	To provide health professionals and health care facilities providing intrapartum maternity care with information and recommendations regarding the roles of health professionals in neonatal resuscitation.
Target audience:	This statement was developed primarily for use by registered health practitioners providing care to women ¹ in maternity care.
Background:	The statement was first published in July 2009 and reviewed in November 2018. The most recent interim update of this statement occurred in February 2023 to provide registered health professionals and health care facilities providing intrapartum maternity care with information and recommendations regarding the roles of health professionals in neonatal resuscitation. The statement draws on earlier evidence-based methodology (i.e., not GRADE methodology), for approval by the Women's Health Committee in March 2023 (Appendix C).
Funding:	The development and review of this statement was funded by RANZCOG.

¹ RANZCOG currently uses the term 'woman' in its documents to include all individuals needing obstetric and gynaecological healthcare, regardless of their gender identity. The College is firmly committed to inclusion of all individuals needing O&G care, as well as all its members providing care, regardless of their gender identity.

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1. Purpose and scope

The purpose of this statement is to provide registered health professionals and health care facilities providing intrapartum maternity care with information and recommendations regarding the roles of health professionals in neonatal resuscitation at birth.

This statement draws on the Australian Resuscitation Council ANZCOR guidelines on this topic. ANZCOR represents both the Australian Resuscitation Council and the New Zealand Resuscitation Council. The statement draws on earlier evidence-based methodology (i.e., NHMRC methodology, that preceded the contemporary approaches to evidence synthesis using GRADE).

2. Plain language summary

An appropriately trained practitioner, skilled in neonatal resuscitation, should be present at all births. Resuscitation is defined as the preservation or restoration of life by the establishment and/or maintenance of airway, breathing and circulation, and related emergency care (refer to [ANZCOR Guideline 1.1](#)). This statement sets out the recommended roles of practitioners skilled in neonatal resuscitation at births assessed as being low-risk and high-risk. A summary table sets out the maternal, fetal and intrapartum risk factors when neonatal resuscitation should be anticipated by medical staff.

Health care facilities must ensure that all staff attending births with the responsibility for neonatal resuscitation have adequate and appropriate training in accord with national guidelines.

3. Introduction

3.1. An appropriately trained practitioner, skilled in neonatal resuscitation, should be present at all births. This includes suitably qualified obstetricians, general practitioners, midwives, neonatal nurses, anaesthetists, paediatricians, or neonatologists.

a. More specifically for births at low risk of requiring advanced neonatal resuscitation

- I. A staff member trained in basic neonatal resuscitation should be in attendance and responsible only for the care of the newborn.
- II. The Australian Resuscitation Council recommends a registered health practitioner trained in advanced neonatal resuscitation should also be available but not in attendance.

b. More specifically at high-risk births

- I. A registered health practitioner trained in advanced neonatal resuscitation should be in attendance and responsible only for the care of the newborn. This may require antenatal transfer of the mother to a facility with resources appropriate to the level of anticipated neonatal complexity.
- II. More than one experienced registered health professional e.g., a GP, midwife etc. with training in neonatal resuscitation should be present to care for the newborn.¹

- 3.2.** Health care facilities must ensure that all staff attending births with the responsibility for neonatal resuscitation have adequate and appropriate training in accordance with national guidelines.^{1, 2} Several courses are available across Australia New Zealand. It is sensible for those working in the same jurisdiction to undertake the same course to ensure consistency among the resuscitation team. Refresher courses should be undertaken with sufficient frequency to maintain familiarity with current guidelines and practical skills. Resuscitation training should be performed in a multidisciplinary environment, including pre-briefing and debriefing, as a way to enhance critical teamwork in resuscitation.

First response resuscitation:

First response (basic) resuscitation skills should include assessment of resuscitation requirement and response, airway management, ventilation, chest compressions, and maintenance and normal temperature. Training in first response resuscitations should include:

- Anticipation and preparation (including the preparation of the resuscitation equipment and check it is functional at the beginning of all birth care events).
- Assessment of need for resuscitation, and use of monitoring equipment such as oximeters.
- Steps to maintain normal body temperature
- Positioning for optimising airway, and other steps to clear or enhance the upper airway if there is evidence of anatomical or functional obstruction
- Assisted ventilation using both a facemask and a supraglottic airway (also known as a laryngeal mask)
- Assessment of response, and correct use of chest compressions if heart rate remains below 60 or is not detectable.
- Non-technical skills including teamwork, role allocation and communication.

Advanced neonatal resuscitation:

Advanced resuscitation skills should additionally include:

- a. Endotracheal intubation
- b. Vascular cannulation, including emergency umbilical venous access
- c. The use of drugs and fluids, including the use of normal saline or red cell blood volume expansion and endotracheal or intravenous adrenaline
- d. Emergency needle decompression of pneumothorax.

- 3.3.** Neonatal resuscitation should be anticipated in every birth. The requirement for advanced neonatal resuscitation should be made by medical staff based on maternal, fetal and intrapartum risk factors.

Factors to consider in risk assessment	
Maternal¹	<ul style="list-style-type: none"> • Prolonged rupture of membranes (greater than 18 hours) • Bleeding in second or third trimester

	<ul style="list-style-type: none"> • Pregnancy induced hypertension • Chronic hypertension • Substance abuse • Drug therapy (e.g., lithium, magnesium, adrenergic blocking agents, narcotics, selective serotonin reuptake inhibitors (SSRI)) • Diabetes mellitus • Chronic illness (e.g., anaemia, cyanotic congenital heart disease) • Maternal pyrexia • Maternal infection • Chorioamnionitis • Heavy sedation • Previous fetal or neonatal death • No prenatal care
Fetal¹	<ul style="list-style-type: none"> • Multiple gestation (e.g., twins, triplets) • Preterm gestation (especially less than 35 weeks) • Post term gestation (greater than 41 weeks) • Large for dates • Fetal growth restriction • Alloimmune haemolytic disease (e.g., anti-D, anti-Kell, especially if fetal anaemia or hydrops fetalis present) • Polyhydramnios and oligohydramnios • Reduced fetal movement before onset of labour • Congenital abnormalities which may affect breathing, cardiovascular function or other aspects of perinatal transition • Intrauterine infection • Hydrops fetalis
Intrapartum¹	<ul style="list-style-type: none"> • Non reassuring fetal heart rate patterns on cardiotocograph (CTG) • Abnormal presentation • Prolapsed cord • Prolonged labour (or prolonged second stage of labour) • Precipitate labour • Antepartum haemorrhage (e.g. abruption, placenta praevia, vasa praevia) • Meconium in the amniotic fluid • Narcotic administration to mother within 4 hours of birth • Forceps birth • Vacuum-assisted (ventouse) birth • Maternal general anaesthesia

4. Responsibilities

4.1. A requirement for the attendance of a registered health practitioner skilled in advanced neonatal resuscitation should be at the discretion of the accoucheur responsible for managing the birth, taking into consideration the following:

- a) The presence of specific additional risk factors and the number of risk factors for neonatal compromise including (but not limited to):
 - significant fetal compromise;
 - Known and anticipated neonatal medical problems including:
 - a. multiple birth;

- b. preterm birth;
 - c. breech presentation;³
 - d. general anaesthesia.^{4,5}
 - Where transfer to neonatal or transitional care units is anticipated.
- b) The availability / proximity of a paediatrician for urgent attendance, should such assistance become necessary. Factors affecting this would include (but not be limited to):
- The presence of an immediately adjacent NICU, staffed with neonatologists capable of reliably attending within seconds. This may raise the threshold for paediatrician attendance at birth.
 - A situation where the most available paediatrician is a considerable time away this would lower that threshold.

4.2. Where there is a need for ongoing neonatal care after resuscitation, the clinician responsible for this care should be clearly identified and free of conflicting responsibilities, including provision of care to the mother. Where responsibility for care is transferred, there should be a formal handover between clinicians.

4.3. Where the birth of a neonate is likely to require advanced resuscitation beyond the capability of the local unit is anticipated, particularly at extreme preterm gestations, strong consideration should be given to in utero transfer to permit birth in a unit with appropriate resources in preference to transfer of an unwell neonate. The benefits of birth at a tertiary facility must be balanced against the risks of maternal-fetal compromise or birth during transfer.

5. Legal and ethical implications

The challenges in maintaining skills levels for specialised but low volume activities such as neonatal resuscitation skills for paediatricians and midwives is recognised within the New Zealand Ministry of Health Review of neonatal care in New Zealand (2020), [accessed at <https://www.health.govt.nz/publication/review-neonatal-care-new-zealand>]

6. Recommendations for future research

Recommendations for future research were presented at the International Conference on Neonatal Resuscitation in Pediatrics ICNRP on February 01-02, 2023 in Melbourne, Australia. See: <https://waset.org/conferences-in-february-2023-in-melbourne/program>

7. References

1. Australian Resuscitation Council (ARC). Neonatal Guidelines. Section 13. 2010. Available from: <http://www.resus.org.au/>
2. Aotearoa New Zealand Resuscitation Council (NZRC). Newborn Life Support. Available from: <http://www.nzrc.org.nz/>
3. Gordon A, McKechnie EJ, Jeffery H. Pediatric presence at cesarean section: justified or not?, Am J Obstet Gynecol. 2005;193(3 Pt 1):599-605
4. Ng PC, Wong MY, Nelson EA. Paediatrician attendance at caesarean section, Eur J Pediatr. 1995;154(8):672-5.
5. Parsons SJ, Sonneveld S, Nolan T. Is a paediatrician needed at all Caesarean sections?, J Paediatr Child Health. 1998;34(3):241-4.

8. Links to relevant College Statements

RANZCOG statement: Evidence-based Medicine, Obstetrics and Gynaecology ([C-Gen 15](#))

9. Links to relevant Clinical Guidelines

Australian Resuscitation Council: The ANZCOR² Guidelines: Section 13 Neonatal Guidelines. 2021. Available at: <https://resus.org.au/the-arc-guidelines/>

Aotearoa New Zealand Resuscitation Council (NZRC). Newborn Life Support. Available from: <http://www.nzrc.org.nz/>

New Zealand Ministry of Health: Review of neonatal care in New Zealand. 2020 Available at: <https://www.health.govt.nz/publication/review-neonatal-care-new-zealand>

10. Consumer resources

RANZCOG Patient Information Pamphlets Available at: http://ranzcog.edu.au/resource-hub/?resource_audience=for-public

11. Links to relevant ATMs and learning modules

FRANZCOG Training Program Handbook. Basic Obstetric Skills Workshop, Neonatal Resuscitation Training. Available at: https://ranzcog.edu.au/wp-content/uploads/2022/05/FranzCOG-Training-Program-Handbook_After-1st-December-2013.pdf

² ANZCOR is the Australian and New Zealand Committee on Resuscitation, of which the Australian Resuscitation Council (ARC) and New Zealand Resuscitation Council (NZRC) are its members. Through ANZCOR, Australian and New Zealand interests are represented on the International Liaison Committee of Resuscitation (ILCOR).

Appendices

Appendix A: Women's Health Committee Membership

Name	Position on Committee
Dr Scott White	Chair
Dr Gillian Gibson	Deputy Chair, Gynaecology
Dr Anna Clare	Deputy Chair, Obstetrics
Associate Professor Amanda Henry	Member and Councillor
Dr Samantha Scherman	Member and Councillor
Dr Marilla Druitt	Member and Councillor
Dr Frank O'Keeffe	Member and Councillor
Dr Kasia Siwicki	Member and Councillor
Dr Jessica Caudwell-Hall	Member and Councillor
Dr Sue Belgrave	Member and Councillor
Dr Marilyn Clarke	Aboriginal and Torres Strait Islander Representative
Professor Kirsten Black	SRHSIG Chair
Dr Nisha Khot	Member and SIMG Representative
Dr Judith Gardiner	Diplomate Representative
Dr Angela Brown	Midwifery Representative, Australia
Ms Adrienne Priday	Midwifery Representative, New Zealand
Ms Leigh Toomey	Community Representative
Dr Rania Abdou	Trainee Representative
Dr Philip Suisted	Māori Representative
Prof Caroline De Costa	Co-opted member (ANZJOG member)
Dr Steve Resnick	Co-opted member

RANZCOG wishes to acknowledge the significant contribution of Dr Patricia Woods in conducting the interim update of this statement to provide guidance on responsibilities of neonatal resuscitation at birth.

Appendix C: Overview of the development and review process for this statement

i. Declaration of interest process and management

Declaring interests is essential in order to prevent any potential conflict between the private interests of members, and their duties as part of RANZCOG Women's Health Committee or working groups.

A declaration of interest form specific to guidelines and statements (approved by the RANZCOG Board in September 2012). All members of the Statement Development Panels and Women's Health Committee were required to declare their relevant interests in writing on this form prior to participating in the review of this statement.

Members were required to update their information as soon as they become aware of any changes to their interests and there was also a standing agenda item at each meeting where declarations of interest were called for and recorded as part of the meeting minutes.

There were no significant real or perceived conflicts of interest that required management during the process of updating this statement.

ii. Steps in developing and updating this statement

This statement was developed in July 2006 by the RANZCOG Women's Health Committee, and an update published in March 2019. This statement draws on the ANZCOR guidelines which use, wherever available, evidence from systematic reviews conducted by the International Liaison Committee on Resuscitation (ILCOR) using GRADE methodology or for topics that have not been recently reviewed by ILCOR, older (i.e., NHMRC) evidence-appraisal methodology or on expert consensus. It was most recently reviewed by the Women's Health Committee in March 2023. The Women's Health Committee carried out the following steps in reviewing this statement:

- Declarations of interest were sought from all members prior to reviewing this statement.
- An interim review of review of available guidelines was undertaken in lieu of a full review of all published evidence.
- At the March 2023 meeting of the Women's Health Committee, the existing recommendations tables were reviewed and updated (where appropriate) based on the available body of evidence and clinical expertise.

RANZCOG statements are developed according to the standards of the Australian National Health and Medical Research Council (NHMRC), Levels of Evidence and Grades of Recommendations for Developers of Guidelines. Where no robust evidence was available but there was sufficient consensus within the Women's Health Committee, consensus-based recommendations were developed or existing ones updated and are identifiable as such. Consensus-based recommendations were agreed to by the entire committee. Good Practice Notes are highlighted throughout and provide practical guidance to facilitate implementation. These were also developed through consensus of the entire committee.

Recommendation category		Description
Evidence-based	A	Body of evidence can be trusted to guide practice
	B	Body of evidence can be trusted to guide practice in most situations
	C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
	D	The body of evidence is weak and the recommendation must be applied with caution
Consensus-based		Recommendation based on clinical opinion and expertise as insufficient evidence available
Good Practice Note		Practical advice and information based on clinical opinion and expertise

Appendix D: Full Disclaimer

Purpose

This Statement has been developed to provide general advice to registered health professionals (and health care facilities providing intrapartum maternity care) on the recommended roles of health professionals in neonatal resuscitation, and should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any person. It is the responsibility of each practitioner to have regard to the particular circumstances of each case. Clinical management should be responsive to the needs of the individual person and the particular circumstances of each case.

Quality of information

The information available in this statement is intended as a guide and provided for information purposes only. The information is based on the Australian/New Zealand context using the best available evidence and information at the time of preparation. While the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) has endeavoured to ensure that information is accurate and current at the time of preparation, it takes no responsibility for matters arising from changed circumstances or information or material that may have become subsequently available. The use of this information is entirely at your own risk and responsibility.

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These terms and conditions will be constructed according to and are governed by the laws of Victoria, Australia.

Version	Date of Version	Pages revised / Brief Explanation of Revision
v1.0	July / 2009	The statement was first published, approved by the RANZCOG Women's Health Committee/Board.
V2.0	November / 2018	Routine review of the statement, approved by the RANZCOG Women's Health Committee/Board
V2.1	March / 2023	Interim update of the statement to ensure fit for purpose approved by Women's Health Committee/Council.

Policy Version:	Version 2.1
Policy Owner:	Women's Health Committee
Policy Approved by:	RANZCOG Council/Board
Review of Policy:	March / 2023