Policy Directive

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Maternity - Clinical Care and Resuscitation of the Newborn Infant

Document Number PD2008_027

Publication date 21-May-2008

Functional Sub group Clinical/ Patient Services - Maternity
Clinical/ Patient Services - Governance and Service Delivery
Clinical/ Patient Services - Baby and child
Personnel/Workforce - Learning and Development

Summary Directs the health system to use the Australian Resuscitation Council (ARC) Guidelines for Neonatal Resuscitation 13.1 - 13.10 released in 2006, with the suggested amendments detailed in this policy, to develop local policies and procedures to establish standards of practice and serve as a foundation for staff education and training programs.

Replaces Doc. No. Children - Clinical Care/Resuscitation/Newly Born Infant - AHS Development of Policy/Procedures [PD2005_242]

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Applies to Area Health Services/Chief Executive Governed Statutory Health Corporation, Board Governed Statutory Health Corporations, Affiliated Health Organisations, Affiliated Health Organisations - Declared, NSW Ambulance Service, Public Hospitals

Audience Qualified providers of maternity services and all maternity service clinicians

Distributed to Public Health System, Divisions of General Practice, Health Associations Unions, Health Professional Associations and Related Organisations, NSW Ambulance Service, Ministry of Health, Public Hospitals, Private Hospitals and Day Procedure Centres, Tertiary Education Institutes

Review date 21-May-2013

Policy Manual Not applicable

File No. 04/3435-7

Status Active

Director-General

This Policy Directive may be varied, withdrawn or replaced at any time. Compliance with this directive is **mandatory** for NSW Health and is a condition of subsidy for public health organisations.

CLINICAL CARE AND RESUSCITATION OF THE NEWBORN INFANT

This policy should be read in conjunction with

- PD2005_256 *newborn infants with respiratory maladaptation to birth – observation and management*
- PD2005_156 *emergency obstetric and neonatal referrals -Policy*
- PD2006_006 *Hospital procedures for review and reporting of perinatal deaths*

NSW Department of Health has based this policy on the evidence-based guidelines for resuscitation of the newborn infant published by the **Australian Resuscitation Council (ARC) (2006) Guidelines for Neonatal Resuscitation 13.1-13.10**. Copies are available from NSW Health and NSW Pregnancy and Newborn Services Network.

This policy has been developed by an expert clinical group convened by the NSW Pregnancy and Newborn Services Network (NSW PSN). The policy has been endorsed by the NSW Maternal and Perinatal Committee.

The health system will use the ARC Guidelines with the suggested amendments to develop clear local policies and procedures for clinical care and resuscitation of the newborn infant. These local policies will establish standards of practice and serve as a foundation for staff education and training programs.

In this context, newborn means the first minutes to hours following birth[1].

Introduction

Resuscitation of the newborn presents a different set of challenges from resuscitation of the adult or even the older infant or child. Transition from fetal to extrauterine life presents unique physiological challenges for the newborn infant. The effect of gestational age on the development of the lung and pulmonary circulation influences how newborn infants at different gestational ages are resuscitated. Although most babies achieve this transition from fetal to extrauterine life without difficulty, a minority (<10%) require some degree of active resuscitation at birth.

While the need for resuscitation of the newborn infant can often be predicted, the need may also arise suddenly and in any birth setting. Policies and procedures for resuscitation of the newborn infant which establish evidence-based standards of clinical practice and underpin staff education and training programs play an important role in reducing perinatal morbidity and producing quality neonatal outcomes.

Section 1

As recommended by the National Health and Medical Research Council (NHMRC)[2], local policies and procedures must be prominently displayed in each Maternity Unit and be made readily accessible to all medical, midwifery, nursing and paramedical staff attending routine and emergency births. This includes home birth attendants, flight nurses and Ambulance Service Officers of all grades. The flowchart attached has been developed for prominent display to provide visual cues for the provision of newborn resuscitation (Appendix A). In particular

- Statements covering special resuscitation circumstances such as preterm birth (<37 weeks), multiple birth, maternity emergencies must be developed in keeping with the Hospital Role delineation.

- The local policies must also direct that appropriate assessment must occur of every woman for antepartum and intrapartum conditions associated with risk to the newborn infant.

- The local policies must also direct that evaluation of every newborn infant should occur, to assess the need for resuscitation. These will include: Visual inspection for meconium on the skin, vigorous cry, respiratory effort, muscle tone, colour and gestation (term, preterm);

Section 2

NSW Health supports the ARC guidelines 13.1- 13.10 however has identified some differences that need to be addressed in local policy and practice documents. The variances from ARC (2006) that are to be included in local policy are as follows:

- **Newborn Resuscitation** training is mandatory for all clinical staff in services providing maternity care to ensure all staff, who may be called upon to provide birthing services, possess the necessary knowledge and skills to initiate basic newborn resuscitation which includes manual ventilation using bag and mask and cardiac compressions.

- Direction that a person trained in advanced neonatal resuscitation* must *be on call* for low risk and *in attendance* for all high-risk births.

- Information that relates to the components of a complete set of resuscitation equipment and the required checking procedure to ensure it remains operational. This must include instructions for use of all equipment, including the radiant warmer. A list can be found in ARC Guideline 13.1 page 4/6.

*A person with the knowledge and skill to perform advanced airway manoeuvres, including endotracheal intubation and a person with advanced vascular access skills including umbilical vein catheterization.

- Infants **less than 28 weeks gestation** must not be dried before wrapping in heat resistant *polyethylene* bags or wrap to maintain normothermia.

- In NSW Sodium Bicarbonate and Naloxone H must not be on the neonatal resuscitation trolleys however **should be readily available in all units for ongoing stabilisation of a newborn by trained personnel.**[**]

- Reference must be made to the need for special consideration of infants born with meconium–stained liquor. ***There is no evidence to support suction on the perineum or routine intubation*****.** If the newborn infant has absent or depressed respirations suction is to be initiated with endotracheal intubation and use of meconium aspirator under direct laryngoscopy. This must be brief and not compromise the infant further.

- When pressure limited flow driven devices (e.g. Neopuff) are used policy must include the use of them and note these should be used only when a self-inflating bag (Laerdel) bag is available as back up.

- If a pressure limited flow driven device (e.g. Neopuff) is used the positive inspiratory pressure (PIP) should be set at 20-30 cm H2O to commence resuscitation, and adjusted as required to achieve chest movement.

- Air should be administered as part of the resuscitation process however 100% O2 should be available if there is no response in heart rate by 90 seconds. The flow rate should be set at 8-10L/min[**]

- Any newborn infant that requires Naloxone needs to be observed appropriately in a nursery until the risk of apnoea has been eliminated.

- In the resuscitation of a newborn infant born unexpectedly without signs of life, airway support can be instituted with a bag and mask or T piece and mask (Neopuff) device until more experienced personnel[*] are available to determine further resuscitative methods.

- Any infant who has been intubated must be extubated in the presence of experienced personnel and observed closely

- An Orogastric tube (Size 8FG) must be inserted and air aspirated to facilitate decompression of the stomach of any newborn requiring prolonged ventilation

[**] It should be noted that almost all research done in the last decade has focussed on term infants compromised by mild to moderate intrapartum asphyxia. It cannot be assumed that air is of greater benefit than 100% O_2 for infants affected by extreme prematurity, severe intrapartum asphyxia, intrapartum sepsis or at risk of pulmonary hypertension following delivery through meconium stained liquor. Furthermore, the studies comparing air with 100% O2 for newborn resuscitation have not reported long term neurodevelopmental outcomes.

In addition

- Statements on ethical issues, such as circumstances where non-initiation or discontinuation of resuscitation in the delivery room may be appropriate. These statements must be consistent with the hospital's Role Delineation[3], local resources and outcome data and must emphasise the need to include parents in the process of decision-making.

- Emphasise the need for early consultation and collaboration between parents and all caregivers (general practitioners, midwives, neonatologists, obstetricians and paediatricians) where there may be a need for active resuscitation.

- Local procedures for implementation of NSW Health Policy Directive PD2005_156 *Policy for emergency obstetric and neonatal referrals* must be in place.

Section 3

Local policies must include :

- Continuing care of the infant and family after active resuscitation, including supportive care, continuous observation and appropriate diagnostic evaluation of the infant
- Provision of information and support to the parents
- Procedures for documentation of resuscitation interventions and responses that:
    - Contribute to an understanding of the infant's pathophysiology and possible further treatment;
    - Can be used for audit and peer review purposes to monitor resuscitation outcomes and improve resuscitation performance and training;

Section 4

A staff education and training program is mandatory and must include provision of training:

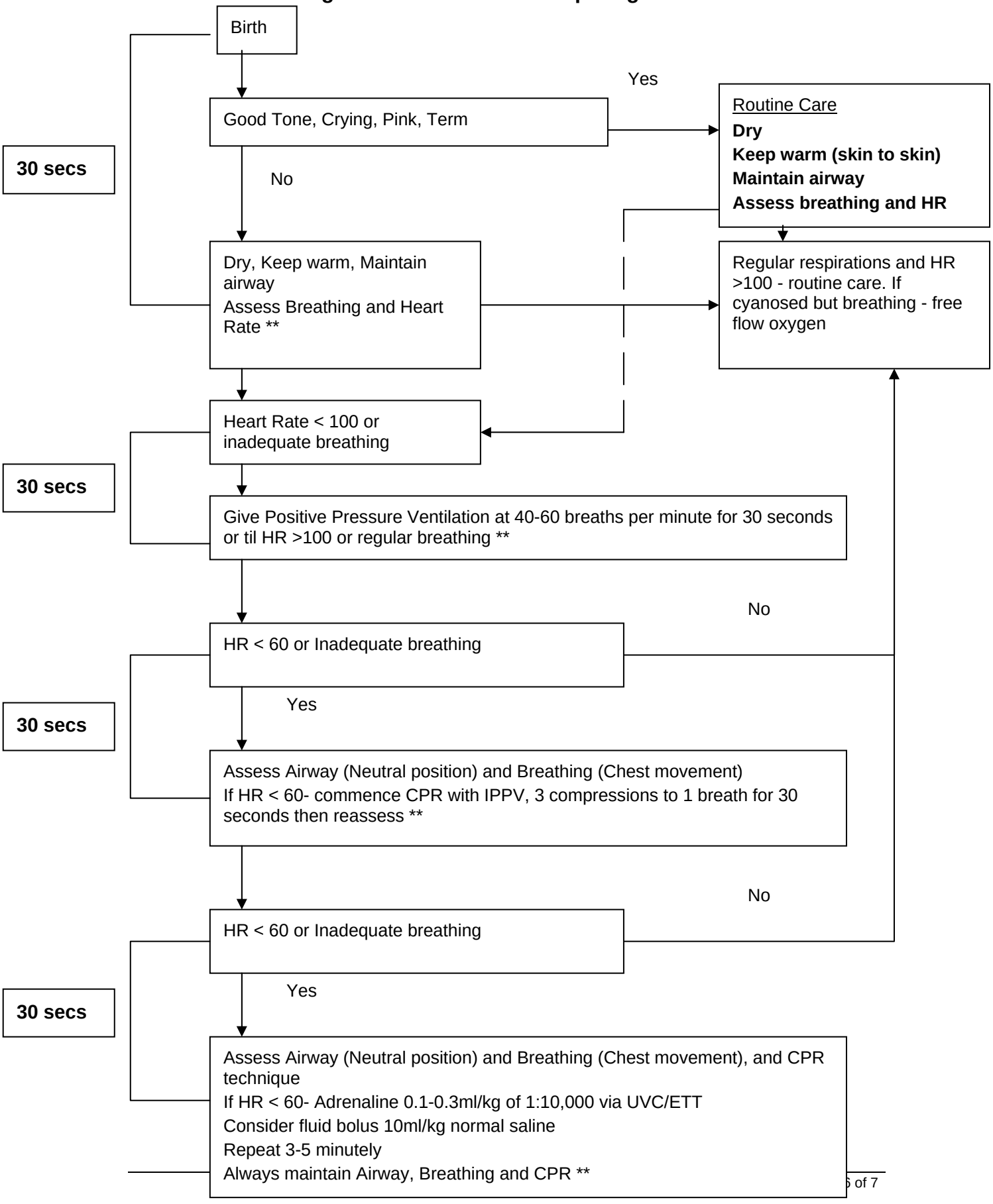
- in orientation programs for all new staff providing birthing services and working with newborns;
- annual continuing education and staff development programs;
- that includes theoretical and practical components;
- that includes mechanisms for an annual assessment of competence in resuscitation of the newly born infant;
- attendance at the Fetal welfare Obstetric emergency Neonatal resuscitation Training (FONT) Maternity Emergency and Neonatal Resuscitation one day Training is mandatory for all clinicians privileged or

appointed to practice Obstetrics, Registered Midwives and Student Midwives under the supervision of a Registered Midwife, once every three years. This one day of education is acceptable as part of the annual accreditation.

Further information on staff education, training programs and policy development in neonatal resuscitation is available from the NSW Pregnancy and Newborn Services Network on 02 9351 7318.

Professor Debora Picone AM
Director-General

Flow Diagram for the Newborn requiring Resuscitation



[1] ILCOR (2005)

ARC (2006)+-

[2] NHMRC (1996) *Clinical practice guidelines. Care around preterm birth*. AGPS: Canberra. p.120-122

[3] NSW Health Department (2002). *Guide to the role delineation of Health Services*