Guideline

Developmental Care: NISC

the women's
the royal women's hospital

1. Purpose

Neonatal Services aims to provide an excellent standard of health care to the newborn and their families and education to health professionals involved in perinatal care. Newborn Intensive and Special Care aims to provide care in a multidisciplinary family centred environment. Developmental care will support and enhance the attainment of the Neonatal Services vision, mission, and values. By formally integrating developmental care practices into our nurseries we hope to maximise infants' neuro-developmental outcomes in the extra-ordinary environment of the neonatal nursery and beyond.

This clinical practice guideline will guide staff in the provision of developmental care for infants admitted to The Royal Women's Hospital (the Women's) Newborn Intensive and Special Care. This includes providing the infant's family with the knowledge and skills to enable them to deliver developmentally supportive care for their infants in hospital and at home.

The aims of developmental care are:

- reduction of infant's stress and agitation
- energy conservation and enhanced recovery
- caregiver understanding of infant's behavioural cues (signs of stability or stress)
- encouragement and support of parents in the primary caregiver role
- minimisation of potential harm due to the ex-utero environment
- promotion of normal growth and development
- prevention of abnormal postures
- stabilisation at each stage of infant's neuro-developmental maturation and support of emerging behaviours and organisation
- enhanced family emotional and social wellbeing.

2. Definition of terms

Developmental care: interventions taken to support the behavioural organisation of each individual infant, enhancing physiological stability, protecting sleep rhythms and promoting growth and maturation. These interventions include handling and positioning measures, reduction of noxious environmental stimuli, and cue based care. Education and involvement of parents, acknowledging that they are the most important people in the infant's life and critical to the infant's emotional, social and physical wellbeing, is a crucial part of family centred developmental care.

Behavioural organisation: the ability of the infant to maintain a balance between the 5 subsystems (autonomic/ physiologic, motor, state, attention and interaction, and self-regulation) via which the infant is in continual interaction with his/her environment.

Cue based care: care giving and interaction based on the infant's behavioural cues, including the appropriate provision or modification of sensory stimulation.

3. Responsibility

All infant caregivers (family, nursing, medical and allied health staff) to provide individualised developmental care for the infant, to the extent that the infant's medical condition permits.

4. Guideline

4.1. Assessment / investigations

- Observation of infant's behavioural cues.
- Provision of sensitive handling, responsive to behavioural cues.
- Provision of supportive positioning.

- Monitoring of ambient light in the nurseries.
- Monitoring of types of sound and sound levels in the nurseries.
- Assessment of the developmental care provided.

4.2. Management

Developmental care should be:

- individualised
- consistent with infant's level of maturity and gestational age
- altered with changes in the infant's health status.

Care/interventions need to be sensitive to infant's cues, taking into account how much stimuli each infant can tolerate. When possible, appropriately time interventions in terms of the infant's state, physiologic status and behavioural responses.

Interventions should be evaluated based on the infant's response and the appropriateness of all interventions should be evaluated regularly.

Individualise auditory, tactile and visual stimuli as appropriate for infant's gestational and postnatal age and medical condition.

Encourage families to participate, in partnership with staff, in designing a developmental care plan that meets their infant's needs and incorporates their observations of their infant.

Integrated care practices that emphasise co-ordination and continuity throughout the continuum of care are encouraged.

All other hospital workers (PSA, Ward Clerk, BME, Engineers) or visitors (family visitors or professional) in the nurseries to assist in the provision and maintenance of a developmentally supportive environment as requested.

Newborn Services and hospital management to provide support for integration of care practices and continuing education and monitoring and auditing of care.

Interventions

Continually assess the infant's physiologic and behavioural responses.

Cue-based care and handling measures

Recognise behavioural cues (signs of stability or stress, approach signals, coping/self calming signals, time-out signals) and provide or modify care as appropriate.

Protect quiet (deep) sleep - delay handling if infant is in quiet/deep sleep. Observe infant for 5-10 minutes post handling for any delayed stress response.

Cluster care as tolerated to provide long periods of undisturbed rest. Recognise signs of stress and sensory overload. Respond to stress cues during handling with containment holds and time-outs (short breaks), enabling physiological recovery before continuing with slower handling. If an infant is unable to cope with a particular cluster of care, then cluster fewer care procedures next time if possible.

Handling techniques include gentle arousal (talk softly to infant and touch gently before handling), gentle and slow minimal handling, containment of infant during handling/procedures including lifting and transfers, and swaddling for weighing and bathing. Avoid sudden position changes. Avoid over-stimulation - whenever possible try to minimise unnecessary light and noise during handling.

Facilitate self-consoling/calming behaviour.

Provide soothing interventions or comfort measures such as non-nutritive sucking, containment of infant's arms and/or legs (gently hold infant's hands together on their chest and/or hold legs tucked up), grasping opportunities and kangaroo care (skin to skin contact).

Additional sensory input is provided as an infant matures (if physiologically stable) (as listed below):

- Additional sensory input may involve providing the opportunity for the infant to look at faces, pictures or toys, and listen to gentle sounds.
- Interaction is best when an infant is in a quiet and alert state, and demonstrating approach signals.
- The infant should set the pace for interaction, and engagement and disengagement cues need to be recognised and responded to appropriately.
- Supportive positioning and reduced lighting and noise facilitate optimal interaction.
- Initial additional sensory input should be uni-modal (for example parent's face within infant's visual range), low-key and brief.
- Additional sensory input is not appropriate for an ill, unstable, fragile or extremely premature infant.
- Avoid over-stimulation (a clutter of toys may be overwhelming).

Positioning

Provide developmentally supportive positioning for all infants within the confines of necessary medical and nursing care.

Developmentally supportive positioning is important to optimise musculoskeletal development and behavioural organisation.

Promote flexed, symmetric postures by encouraging:

- shoulder and hip flexion and adduction
- neutral alignment of ankles with dorsiflexion
- neutral alignment of head and neck whenever possible
- flexion of trunk.

Promotion of flexed postures helps infant conserve body heat and energy (improved weight gain and growth) and facilitates midline skills as in hand to hand/face/mouth movements and behaviours.

Appropriate positioning is facilitated by the provision of boundaries, through the use of nesting and /or swaddling.

Note - As infants approach term and discharge to home the SIDS safe sleeping guidelines are implemented unless contra-indicated.

Reduction of Noxious Stimuli

Maintain a quiet environment:

- always close incubator porthole doors quietly and encourage everyone else to do the same
- always talk quietly in the nurseries
- do not talk across infant's cot
- minimise other noise in the nursery (minimise audible alarms - set alarm limits and tone at appropriate levels and try to anticipate and silence alarms before they sound. Silence audible alarms as soon as possible).
- observe ‘quiet’ hours if introduced
- monitor noise levels at least periodically so problems can be identified and modifications made
- investigate equipment noise levels prior to purchase
- comply with sound level recommendations (Australian guidelines pending, USA Sound Limit Recommendations - hourly Leq 50dB(A), hourly L10 55dB(A), 1-secondLmax 70 dB(A) - all A weighted slow response scale).

Maintain appropriate individualised light environment:

- shield infants from bright light (cover cots and provide appropriate eye wear when necessary)
- reduce light levels, maintaining a safe level for accurate clinical observation as necessary
- make use of available daylight, but avoid bright, direct sunlight
- monitor ambient light levels
- comply with nursery lighting recommendations (American recommendations: ambient lighting levels of 10 to 20 foot candles, 60 foot candles for observation, 100 foot candles for procedures).

Reduce other noxious stimuli:

- open alcohol swabs outside incubator and remove them from the incubator immediately after use
- discourage use of strong fragrances
- suction gently only as required
- provide mouth care
- encourage use of breast milk
- maintain skin integrity
- minimise painful procedures and provide appropriate pain relief measures including comfort measures.
- Kangaroo Care

4.3. Consumer information

Discuss Developmental care with the babies parents and family members (as appropriate) and provide the following information: *Welcome to Newborn Intensive and Special Care.*

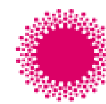
5. Evaluation, monitoring and reporting of compliance to this guideline

To be developed.

6. References

Table 1 Evidence table

Author/s	**Title** *Title of Study or Article*	**Source** *Journal title* *Date of publication* *Volume and Issue number* *Pages*	**Level of Evidence** (1-1V)	**Comments** *Please include:* • *database searched* • *keywords searched* • *study design, size of sample etc*
Rick, Sonya	Developmental Care on NICUs: nurses experiences & neurodevelopmental behavioral & parenting outcomes. A critical review of the literature.	Journal of Neonatal Nursing. Vol 12, issue 2, April 2006 pages 26-61.		Neonatal, developmental care



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Aucott, S., Donohue, P., Aitkins, E & Allen, M.	Neurodevelopmental Care in the NICU.	Mental Retardation & Developmental Disabilities Research Reviews, Vol 8, issue 4, pages 298-308, sept 2002.		Wiley Interscience Prematurity, developmental care, NICU
Mouradian, L.	The influence of neonatal intensive care unit caregiving practices on motor functioning of preterm infants.	American Journal of occupational therapy, 1994, June; 48(6): 527-33		Newborn development, practice in NICU
Byers, J.	Components of developmental care & the evidence for their use in the NICU	American Journal of Maternal & Child Health Nursing, 2003; 28(3): 174-180.		Developmental Care, NICU

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Graven S. Sound and the Developing Infant in the NICU: Conclusions and Recommendations for Care, Journal of Perinatology, 2000; 20: S88-S93

Grunswald P, Becker P. Developmental Enhancement: Implementing a Program for the NICU, Neonatal Network 9 (6): 1991:29-45

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Kenner C, Brueggemeyer A, Gunderson LP. Comprehensive Neonatal Nursing, W.B.Saunders Company, 1993

Kenner C, McGrath JM (Eds). Developmental Care of Newborns and Infants, A guide for health professionals, 2004, Mosby.

National Association of Neonatal Nurses (USA), Infant and family-centered developmental care. 2000.

7. Legislation/Regulations related to this guideline

Not applicable.

8. Appendices

Appendix 1: Form: Daily Care Plan

Appendix 2: Policy and Procedures:

- Family Centered Care: Newborn Intensive and Special Care
- Kangaroo Care

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Baby's label / UR number

Daily Care Plan

Date: ________________________

Baby's Name: ___________________________________

Feeding: (e.g. two breast feeds per day)

____
____
____
____

Positioning: (e.g. my baby prefers to have their hands near his/her face)

____
____
____
____

My baby may be unhappy if: (e.g. hand is held up like a stop sign)

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____
____
____

Things that help to settle my baby: (e.g. swaddling)

____
____
____
____

I will be visiting my baby: (e.g. times during the day)

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____
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Special Requests:

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