Neurobehavioral Assessment from Admission Through Discharge

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Engaging Families in the NICU:
A family-centered approach before and after discharge

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Disclosure of potential conflicts of interest: None

Permission obtained from family members for every photograph, quote and story shared in this presentation
Objectives:

At the conclusion of this activity, the participant should be able to:

describe two neurobehavioral evaluations and how they can be utilized both in the newborn intensive care unit and in a transitional follow up program
Clinical practice model providing the NIDCAP philosophy within newborn intensive care and through discharge home with a transitional bridge clinic supporting infants and families from birth through three months corrected age.
This proactive and preventative approach promotes parental confidence and enhanced competence while preventing maladaptive patterns of behavior in these young infants which leads to improved neurodevelopmental outcome.
Neurobehavior is the window to the brain

It reflects development of brain structure and function
Behavior

Continuous expression of brain function
Always available to be reliably observed
Neurobehavioral assessment

• Combines neurological and behavioral assessment into a more comprehensive approach

• Assesses newborn individuality and competence
Envision the infant and mother’s expectation for evolution promised closeness and nurturing
Newborn Individualized Developmental Care and Assessment Program provides a systematic, neurobehavioral observation methodology.
Observing the infant before, during and following caregiving.
NIDCAP evaluations provide the basis for:

Structuring of an appropriate physical environment in the NICU for infant and family

Timing and organization of medical and nursing interventions appropriate to the individuality of infant and family

Support and nurturance of the parents’ cherishing of their infant, and of their confidence in caring for and taking pride in supporting their infant’s development

Coordination in the developmental framework of the care delivered by special service providers such as respiratory therapists, occupational and physical therapists, social workers, nutritionists, early intervention professionals, public health nurses, and others

NIDCAP Program Guide
We must see each infant as a person, build a relationship of respect and support that infant in participating in his care.

Strategies to ensure the infant’s comfort through positioning and choice of bedding including unlimited opportunity for skin to skin holding.

Demonstrate infant respect. Avoid disturbing the infant while sleeping. Follow the infant’s rhythm. Avoid timed interventions.
Practical points for supporting feeding readiness/success

Family inclusion right from the start

Skin to skin holding

Participating in holding; feedings; diapering; bathing; and all aspects of care as much as possible

Promoting pleasure and pride
Developmental care is not an activity carried out at certain times of the day when caregivers’ schedule allows.

Developmental care should be a basic background element upon which all activities are carried out.
Assessment of Preterm/Fullterm Infant Behavior (APIB)

I. Challenging sleep state with distal stimulation
II. Uncover and place supine without containment
III. Low tactile maneuvers
IV. Medium tactile/vestibular maneuvers
V. High tactile/vestibular maneuvers
VI. Attention and interaction
Assessment of infant individuality and competence, based on observation of the behavioral subsystems in interaction with each other and with the environment.

Measures not only task performance but also quality of performance

An interactive assessment which gives a clear profile of the baby’s behavior
It is a complex interactive assessment that simultaneously provides intervention to support parents in understanding their infant’s behavior and, in turn, provide greater support for ongoing maturation and development.
Use of the APIB

• APIB evaluations of infants provide screening for neurological abnormalities and facilitate parental understanding of their infants' growth and development.

• The APIB presents the infant with increasingly demanding input, searching for the threshold of organization and evaluates degree of differentiation; thus identifying the individual infant’s strengths and vulnerabilities.
Both the NIDCAP Observations and the APIB Evaluations in the NICU

- Assess the strengths and abilities of the child
- Infant’s behavior is shared with the parents
- Shared with professional caregivers
- Provides basis for collaborative care
  - with the infant
  - infant’s family
  - staff
Bringing a baby home from the NICU

- Although much desired and awaited may be very stressful
- Degree of parental experience varies
- Difficulty in feeding - full 24 hour care
- Infant may have poor state regulation and increased sensitivity
- Parents have their previous ongoing responsibilities
- Other children, work, home schooling during pandemic
- Financial concerns
- Degree of support available
A new and innovative approach to “mind the gap” in order to support infants and families as they leave the hospital and transition to home during the three to four months before they may be seen in a neonatal follow up clinic.

Will provide neurobehavioral assessment for screening and intervention, nutritional and growth assessment and medical co-management of the infant’s medical needs, in collaboration with the infant’s primary health care provider during the interim period between leaving the hospital and entering the typical neonatal follow up program.
Neurobehavioral assessment

- Combines neurological and behavioral assessment into a more comprehensive approach
- Provides screening for neurological abnormalities and facilitates parental understanding of their infants' growth and development.
- Assesses newborn individuality and competence.
- Discuss behavior and caregiving related to sleeping, bathing, tummy time, interaction, temperament, and consolability.
- I am so proud of my son/daughter X because ......
- Quick screening for maternal sadness and anxiety
Common concerns

Sleep issues - where are they sleeping; how much are they sleeping; days and nights mixed up - sleep and awake patterns

Crying and Fussy especially periods in the evening. How much can my baby cry? what does it take to console? Temperament; easy-going to high-strung

Bathing issues - long time of sponge bathing - afraid to put baby in tub - immersion bathing. Swaddled bathing

Grunting - disorganized “noisy” sleep mistaken to be awake

Tummy time - afraid to start it - think being held on chest is tummy time

Attentional/Interactive issues - can my baby see me? Her eyes move funny; when will she smile?

How much to hold? Will I spoil my baby? Grandma says.....
Autonomic behavior

• Ongoing immaturity and disorganization of breathing pattern
• Twitches, tremors and startles
• Frequent hiccoughing and sneezes
• Grunting, squirming and color change
• Disorganization of suck, swallow and breathing during feeding
• Protective reflexes of gagging or coughing
• Reflux
Motoric Behavior

overall posture
muscle tone
head control
Head turning preference
Arching with crying
Behavior when lying on back
Behavior during tummy time
State related behavior

• Quality and amount of sleep during day and at night
• Degree of disorganization or noisiness of sleep
• Review of safe sleep practices
• Amount of awake time
• Quality of alertness
• Making eye contact
• Turning to voice
• Vocalization
• Smiling
• Degree of fussiness and crying
Self Regulatory behavior

• How much fussiness and crying
• What does it take to soothe him/her
• What does your son or daughter like to do when awake and not feeding
• How does he/she respond to bathing
• Hand to face and mouth behavior
• Response with and enjoyment of cuddling
• Transition to sleep
Appointments Made

Year 2018: 454 appointments made, 94.7% participation rate

Year 2019: 571 appointments made, 90.2% participation rate

Year 2020: 465 appointments made, 93.5% participation rate
In Summary

- This is a strength based model of clinical practice built on the foundation of relationship based care.

- Neurobehavioral assessment is utilized to facilitate parents in understanding the meaning of their son or daughter’s behavior and therefore how to best support their maturation and development both while in the newborn intensive care and in the first few months of transition home and in the community.

- The typical neurodevelopmental patterns of behavior can be positively nurtured and influenced through careful assessment and anticipatory guidance as well as appropriate referral to community resources such as early intervention programs.

- The facilitation and support of parenting and nurturing of the parent infant relationship has positive effects on autonomic, motor, and state related behavioral outcomes.

- This relationship based approach of support for infants and families through the transition from NICU to home may decrease parental anxiety and depression thus promoting wellness.
References


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