Fostering the Development of Infants & Toddlers Born Prematurely: Part II—Important Ways that Early Interventionists can Make a Difference

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Presentation Objectives

• To gain an understanding of
  – the importance of developmental monitoring and anticipatory guidance when working with infants/toddlers born prematurely and their families.
• To become familiar with
  – physiological and behavioral signals used by young infants born prematurely,
  – basic massage techniques to foster positive touch and relaxation, and
  – strategies for facilitating appropriate positioning.

Importance of Developmental Monitoring

Rationale…from the Literature

• The survival rate for premature infants has increased dramatically in the past decade (Hack, M, et al., 2000; Hack, M and Fanaroff, A, 1999).
• Although many factors go into predictions regarding morbidity, infants born earliest and at the smallest weights have the highest risk of developing disabilities.
• The rate of overall disability in infants born extremely premature is 49% and the rate of severe disability is 23% (Wood, NS, et al., 2000).

UMMS Study
Percent Qualified Direct EI Service

Developmental Milestones

• Important to frequently screen milestones across all domains or refer to NICU Follow-Up Program.
• Evaluate for attainment of milestones AND quality of milestone.
• Develop age adjustment policy & clearly explain to families.
BabyNet
NICU Related Eligibility

- Criteria include, but are not limited to birthweight ≤ 1200 grams or ≤ 28 weeks gestational age (until age 2 years), grade IV Intraventricular Hemorrhage, ROP stage 4 & 5 Retrolental Fibroplasia, seizures with congenital brain malformation, specific metabolic and chromosomal abnormalities or specific visual and hearing abnormalities.

P-POD: Pediatric Pocket of Development

Pocket Reminder to Think about Development in All Domains On a Regular Basis

Age | Adapive | Social-Emotional | Fine Motor | Cognition | Language | Gross Motor
--- | --- | --- | --- | --- | --- | ---
0 mo | Rolls, sits, crawls | Snacks/pick up | Grasps | Focuses on objects | Cries | Gears head in prone
1 mo | Stares at faces | Hands reach | Points | Looks at objects | Head up |
2 mo | Reach 3-4 night hours | Hands 50% | Travis hands horizontally and vertically | Looks | Chews up in prone
3 mo | Holds to mouth | Smiles, reaches for parent | Grasps | Watches own hands | Laughs | Good head control
4 mo | Eats baby food | Iterates ruts | Rolls | Looks dropped spoon | Says 'Mama', 'Dada' | Rolls, sits tripod
5 mo | Rolls, sits, crawls | Snacks/pick up | Grasps | Focuses on objects | Cries | Gears head in prone
6 mo | Stares at faces | Hands reach | Points | Looks at objects | Head up |
7 mo | Reach 3-4 night hours | Hands 50% | Travis hands horizontally and vertically | Looks | Chews up in prone
8 mo | Holds to mouth | Smiles, reaches for parent | Grasps | Watches own hands | Laughs | Good head control
9 mo | Eats baby food | Iterates ruts | Rolls | Looks dropped spoon | Says 'Mama', 'Dada' | Rolls, sits tripod

NICU Follow-Up Program

- Eligible: Linkage Service
- Not Eligible: Community Referral

For BabyNet information call 1-800-868-0404.

ICU Follow-Up Program

• Eligible: Linkage Service
• Not Eligible: Community Referral

Purpose

• The goal of a NICU Follow-up Program is to make sure infants born prematurely are developing to the best of their ability.
• Monitors development and answers parental questions about medical issues related to prematurity, development and parenting an infant born prematurely.
• If any developmental problems are identified, staff help family obtain needed services.
Appropriate Referrals: NICU Follow-Up High Risk Conditions

- Birthweight <1500g
- Gestational age <32 wks
- Apgar <5 @ 5 minutes
- IUGR
- IVH > Grade II
- Congenital infection
- Congenital anomalies
- Ventriculomegaly
- Porencephaly
- Hydrocephalus
- Microcephaly
- HIE
- PVL
- Seizures
- Meningitis
- BPD
- Hearing impairment
- Vision impairment
- Abnormal neurologic exam

Follow-Up Protocol Varies

- Unidisciplinary
  - Neonatologist, developmental pediatrician, or psychologist only
  - Referrals as needed to other specialists
- Multidisciplinary
  - Multiple specialists available to see patients
  - Screening & Assessment
  - Assessment

Multidisciplinary Model at UMMS

- Neonatologists
- Developmental Pediatricians
- Psychologists
- Physical therapist
- Occupational therapist
- Speech and language pathologist
- Nurse
- Developmental Specialist/Educator
- BITP Service Coordinator

Follow-Up Protocol Varies... At UMMS

- Most infants seen every 4 months during the first year of life and then every 6 months until three years of age.
- If development is suspect or delayed, children may be evaluated more frequently.
- If development is very delayed & all services/equipment in place, children may be evaluated less frequently.

Anticipatory Guidance

- Definitions
  - … a proactive developmentally based counseling technique that focuses on the needs of a child at each stage of life. (Titley, 2006)
  - … information that helps families prepare for expected physical and behavioral changes during their child's current and approaching stage of development. (Georgetown Univ, 2003)
- Research shows parents want more guidance in basic areas of childrearing (discipline, how to encourage learning), with one study finding that more than half (53 percent) of parents reported that they could use more guidance. (Child Trends Data Bank, 2004)

Anticipatory Guidance…

- Preemie signals
- Positioning
- Baby Massage
- Development…what to expect, when to expect it & how to foster it
Preemie Signals

...Teach Parents About Signals
Understanding My Signals

Types of Signals

• Approach
• Coping
• Avoidance

Approach Signals

• smile
• mouthing
• ooh face
• gentle locking
• cooing

• speech movements
• quiet and alert
• relaxed limbs
• smooth body movements
• soft, relaxed facial expression

Coping Signals

• leg brace
• hand on face
• hand to mouth
• suck search, sucking
• hand/foot clasp

• grasping
• fistig
• finger fold
• bracing body against crib
• going into a drowsy or light sleep state

Avoidance Signals

• whimperlike sounds, fuss, gasp
• stretch/drown, arching
• tongue thrust
• gape face, grimace, frown

• finger splay, salute, airplane
• sitting on air
• eye floating, gaze avert
• spit up, gag, hiccup, burp, pass gas, yawn, sneeze

Helpful Signal Strategies

• Talk before touching to prepare baby for touch.
• Give a break after taking baby out of bed and beginning to hold/feed.
• Begin with one stimulation at a time.
• Reduce stimulation when avoidance signals seen.
• Look beyond parent to environment when parent doing ‘the right thing.’
Positioning

…Teach Parents about Positioning

• Prone: Facilitates flexion, head control, oxygenation.
• Sidelying: Facilitates flexion, encourages hand to mouth, discourages arching, ideal for infants with GER.
• Supine: Accessibility in NICU.
• Sitting: Promotes head control, flexion, hand to mouth, social interaction.

Involve Parents…
Promote Infant Massage

• When: Generally ready for massage when baby is able to maintain body temperature on own & can be held.
• What: During baby massage parent will gently but firmly stroke different parts of baby’s body.
• Why: Baby massage lets baby experience nice touches and helps baby relax. In addition, research studies have shown that baby massage may help babies gain weight and cry less. It may also improve tone and help overall development.
• How: Parent can massage baby for 20 to 45 minutes per day. Parent needs to observe signals to see when baby is ready to begin the massage and for times that baby needs a break.

Involve Parents…
Helpful Massage Hints

• Use pressured strokes because light strokes might tickle.
• During a stroke, always maintain contact; let go only between different strokes.
• Provide slow, rhythmical strokes from in to out. This will help relax baby best.
• Use lotion or oil for a nice gliding stroke. Bare hands create friction and don’t feel as good. Tell parents what they can use.

Involve Parents…
Massaging the Face in Supine

• Begin with two index fingers between eye brows.
• Move both fingers at the same time, in opposite directions to trace the arch of the eye brow.
• When reach temples, circle fingers three times.
• Lift right finger up and move it between eye brows then bring left finger between eye brows.
• Repeat 15-20 times, or more if baby likes it.

Baby Massage

…Teach Parents Massage

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### Involve Parents…
#### Massaging the Arms in Supine
- Support arm by holding wrist with one hand.
- With other hand, stroke outer arm from shoulder to wrist.
- Alternate hands and stroke inner arm down to wrist.
- Repeat 15-20 times, or more if baby likes it.

### Involve Parents…
#### Massaging the Legs in Supine
- Support leg by holding ankle with one hand.
- With other hand, stroke outer leg from hip to ankle.
- Alternate hands and stroke inner leg down to ankle.
- Repeat 15-20 times, or more if baby likes it.

### Involve Parents…
#### Massaging the Wrists in Supine
- Hold arm with one hand.
- Use the index finger and thumb of other hand to gently circle both sides of wrist.
- Make 15-20 circles, or more if baby likes it.

### Involve Parents…
#### Massaging the Ankles in Supine
- Hold leg with one hand.
- Use the index finger and thumb of other hand to gently circle both sides of ankle.
- Make 15-20 circles, or more if baby likes it.

### Involve Parents…
#### Massaging the Back in Prone
- Make sure that head is to the side so that baby can breathe.
- Put left hand on buttocks and right hand on the back of neck.
- With right hand, stroke from neck to buttocks.
- Leave right hand on buttocks.
- Move left hand to neck and stroke down to buttocks.
- Repeat 15-20 times, or more if baby likes it.

### Baby Massage Pamphlet
- Permission to duplicate & distribute as you deem appropriate.
- Obtain approval from your agency first.
Development

- ...what to expect, when to expect it & how to foster it.

Development…

Your Area of Expertise!

- Use P-POD or other instrument of choice to inform parents of upcoming milestones across all domains.
- Use Best Beginnings or other handouts as a reference for parents as appropriate.

Contact Information

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