



PREVIEW ONLY

Neonatal Eating Outcome Assessment

Copyright 2014 by Washington University in St. Louis, Missouri. All rights reserved.

About the Author



Bobbi Pineda, PhD, OTR/L is a Certified Neonatal Therapist who has been practicing since 1992. Her first child was born at 29 weeks gestation in 1998. She became intrigued with conducting research and developing products aimed at supporting the parents of infants in the NICU as well as supporting the developmental progress of the premature infant. She is a former Assistant Professor at Washington University and current Assistant Professor at the University of Southern California. Her current work focuses on better understanding how early factors in the NICU environment support the development of the growing, premature infant and his/her family in addition to how to identify early patterns of development, including oral feeding. Dr. Pineda is also an author of the Supporting and Enhancing NICU Experiences (SENSE) program.

PREVIEW ONLY

Neonatal Eating Outcome Assessment Manual

PREVIEW ONLY

Roberta Pineda, PhD, OTR/L, CNT

University of Southern California

Chan Division of Occupational Science and Occupational Therapy

Keck School of Medicine

Department of Pediatrics

pinedaniculab@gmail.com

Contents

Introduction to the Neonatal Eating Outcome Assessment.....	Part I
Purpose	1
Ages.....	1
Assessment Procedure	1
Color Coding Reference to Determine Oral Feeding Readiness, Safety and Success	5
Prescribed Feeding Volume	6
General Scoring	7
Training	8
Psychometrics.....	9
States of Consciousness for Scoring Purposes	11
Detailed Scoring Criteria for the Neonatal Eating Outcome Assessment.....	Part II
Pre-Feeding Behaviors	12
I-1. Arousal	13
I-2. Physiological Stability.....	14
I-3. Respiratory Support	15
I-4. Rooting and Grasp.....	16
I-5. Initiation of Sucking.....	18
I-6. Tongue	19
I-7. Non-Nutritive Sucking.....	20
Oral Feeding	21
II-1. Suck-Swallow-Breathe Coordination.....	22
II-2. Sucking Burst Length	24
II-3. Suction	25
II-4. Oral Tone.....	26
II-5. Quality of Sucking Movements	27
II-6. Behavioral Response to Feeding	28
II-7. Fluid Loss	29
II-8. Swallow	30
II-9. Respiratory Control During Feeding.....	31
Observations at The End of Feeding.....	32
III-1. Feeding Completion	33
III-2. State Maintenance	34
III-3. Volume Consumed	36
Items Not Scored.....	37
Items Not Scored – Breastfeeding only.....	44
Scoring the Neonatal Eating Outcome Assessment and Score Sheet.....	Part III
Criteria.....	47
Score Sheet	48-52

Part I.

Introduction to the Neonatal Eating Outcome Assessment

PREVIEW ONLY

Purpose:

To assess age-appropriate oral motor and feeding skills in preterm infants prior to and at term equivalent age. This assessment attempts to gauge normal versus abnormal progression of feeding across differing postmenstrual ages (PMA), when lack of feeding success can be either a flag for abnormality or part of the normal process of maturation. While this tool may assist in identifying feeding abnormalities, it does not establish treatment priorities. It can be used with breast or bottle-fed infants. Scoring of the Neonatal Eating Outcome Assessment is based on the infant's PMA at the time of assessment.

Ages:

The full assessment is appropriate for infants who have initiated oral feeding (approximately 30-32 weeks PMA) through approximately 4-6 weeks post-term. An abbreviated form can be used for infants after 30 weeks PMA who are not yet orally feeding.

Assessment Procedure:

Feeding performance can change with different modes of feeding, with different positioning and with different interventions. For the first feeding assessment using this tool, use the most common mode of feeding, along with typical interventions used for the specific infant being assessed. Thereafter, the effect of different interventions can be determined through reassessment while incorporating those interventions.

PREVIEW ONLY

Abbreviated form:

For infants not yet orally feeding, provide non-nutritive sucking using a gloved finger or pacifier for 1-3 minutes and score only Section I (Pre-Feeding Behaviors).

Full assessment:

For infants who are orally feeding or for whom oral feeding is attempted, make observations prior to and during bottle nipple insertion or latch to the breast (and score Section I). Score Section II after 10 minutes of oral feeding. Section III and IV should be completed after the feeding is completed or after 20 minutes of oral feeding (from the time the nipple enters the mouth). Scoring should cease after 20 minutes, even if feeding continues.

Each item has scoring criteria represented by a letter. The letter score that is **bolded** in each item represents the optimal response for an infant at or beyond term equivalent age. The letter score that is in *italics* in each item represents a response that is always abnormal, irrespective of PMA. Not all items have an italicized option. If an infant demonstrates behaviors that are described in two letter responses, choose the one that is most representative of the infant's abilities at the time of assessment, prior to the occurrence of factors that may have impacted the item being scored. When two letter score responses equally represent the infant's behavioral response, score the least optimal score (the one farthest away from the bolded letter score).

Score Sheet Color Coding Reference to Determine Oral Feeding Readiness, Safety, and Success:

Section	Item(s)	Construct	Score	Response
One: Pre-Feeding	I-1. – I-5. Pages 9–13	Feeding Readiness	Score of 'A'	Oral feeding is not appropriate, use abbreviated scoring
One: Pre-Feeding	I-1. – I-5. Pages 9–13	Feeding Readiness	Score of 'B' or 'C'	Cautious assessment with a professional trained in cue based feeding is necessary
Two: Oral Feeding	II-8. & II-9. Pages 25–26	Safety	Score of 'A'	Oral feeding should be stopped
Four: Breastfeeding Non-Scored	IV-18. Page 38	Breastfeeding Complications	Any boxes checked in this section	Breastfeeding is medically contraindicated, and the decision to proceed with breastfeeding should be carefully considered in conjunction with a physician
Three: End of Feed Observations	III-3. Page 30	Success with Oral Feeding	Score of 'A', 'B', 'C', 'D', or 'E'	Need for supplemental feeding should be evaluated
Four: Breastfeeding Non-Scored	IV-15. Page 37	Mother's Milk Supply	Check of anything other than '89-100% of volume needed each day for infant'	Need for supplemental feeding should be considered

PREVIEW ONLY

General Scoring:

- Scoring of the Neonatal Eating Outcome Assessment is based on the infant's PMA at the time of assessment. PMA is calculated by adding the number of completed weeks of gestation at birth to the number of completed weeks elapsed since birth. Use 40+ PMA for infants born full-term or those being assessed up to 4-6 weeks post-term.
- In this assessment, some items are intended to evaluate pre-feeding behavior, while others assess feeding behaviors and responses to feeding. If the infant is not orally feeding, score only the Pre-Feeding Behavior items during Non-Nutritive Sucking (Section I) and use the abbreviated form scoring criteria. If oral feeding is attempted, use the full form (Section I, II, and III) for scoring after observing non-nutritive sucking and oral feeding for 20 minutes. Complete Section IV to document environmental, positioning, and adaptive strategies used during the assessment process.
- Circle the letter designation for the closest description of how the infant performed on each item. This is approached based on standard criteria defined in the manual (not determined based on age of infant). Sometimes infants demonstrate behaviors across more than one scoring criteria. When this happens, score the one that more closely represents the infant's performance, paying closer attention to the first criteria/sentence listed under each description. If scoring clearly falls between two scores, score the least optimal response of the two.
- Each letter score for each item is then translated to a point value, based on the infant's PMA at the time of testing. Each item is worth 1, 3, or 5 points (unless specified that the item is not scored). A score of 1 on each item reflects a feeding challenge for that PMA, a score of 3 reflects a questionable performance, and a score of 5 reflects a normal performance. A questionable performance indicates that the skill may be emerging, may be impacted by concurrent medical complications, or could indicate abnormal performance.
- Find the infant's current PMA in the upper right-hand section of the score sheet and draw a vertical line to the bottom of the page from that PMA. Use the infant's PMA at the time of assessment, using scoring criteria that intersect the vertical line, to determine the assessed value of each item (1, 3, or 5 points).
- All point-valued items are added for a total raw score. Raw scores can be categorized as normal, questionable, or abnormal based on established ranges. The range of scores and appropriate classifications are available on the bottom of the score sheet and on page 42 of this manual under 'Scoring Criteria'.

PREVIEW ONLY

- Some items (in section IV) are designed to provide information about the feeder, the feeder's experience with feeding infants, the infant's experience with feeding, the position during feeding, external supports during feeding, and other factors within the feeding. These items are NOT scored. Items numbered IV-15 through IV-22 are non-scored items for breastfeeding only. ***Item IV-15 is highlighted in yellow, indicating that checking any box other than "89-100% of infant's volume each day" may signify the need for supplemental feeding.
**Item IV-18 is highlighted in red, indicating that checking any box may indicate a safety issue and that breastfeeding may be contraindicated, with continuation of breastfeeding needing to be carefully considered in conjunction with a physician.

Example Item Scoring:

Item: Arousal/State Organization (I-1)

Letter score most closely matching performance: B. Short periods of arousal with stimulation

On the scoring sheet under Arousal/State Organization (I-1), 'X' for an infant who is 37 weeks PMA is worth 1 point. If the infant were 34-35 weeks PMA, 'B' would be worth 3 points, and if the infant were 33 weeks PMA, 'B' would be worth 5 points.

Training:

Therapists seeking to use the Neonatal Eating Outcome Assessment should undergo training to ensure accuracy in scoring. Training typically involves approximately 2 hours of learning involving a PowerPoint and observations of feeding videos. Trainees then rate 5 feeding sessions and score feeding performance using the Neonatal Eating Outcome Assessment, with more feeding sessions used/scored until reliability is achieved. Trainees are considered reliable if they have 80% accuracy of scores (this means that trainees have agreement in the assigned letter scores in a minimum of 15 of the 19 scored items).

States of Consciousness for Scoring Purposes:

There are 6 states of consciousness through which an infant cycles several times throughout the day. Two are sleep states, and the other four are waking states. As an infant's nervous system becomes more developed, the infant will begin to settle into a pattern of waking and sleeping with increased periods of arousal to engage in eating.

<i>State 1</i>	Deep Sleep	Infant lies quietly without movement or responses to general noise in the environment.
<i>State 2</i>	Light Sleep	Infant is asleep with eyes closed but demonstrates some movement; eye movements beneath closed eyes are visible; noise may startle the infant and cause the infant to wake.
<i>State 3</i>	Drowsy	Infant may be waking or falling asleep; heavy eyes are present and fussiness may be observed. Movement is often subdued and eyes most often are closed or glazed. Drowsiness is differentiated from light sleep by the amount of activity, as active rooting and sucking responses and body movements are typically observed in a drowsy state but not in light sleep.
<i>State 4</i>	Quiet Alert	Infant is awake and alert with open eyes and clear visual focus, however, there is little movement of the body; infant appears attentive.
<i>State 5</i>	Active Alert	Infant is awake with eyes open and is alert, and demonstrates active movements of extremities body or head.
<i>State 6</i>	Crying	Infant may be flailing extremities and demonstrating disorganized movements; audible, sustained cry is heard.

Adapted from (Brazelton and Nugent, 1995)

PREVIEW ONLY

Part II.

Detailed Scoring Criteria for the Neonatal Eating Outcome Assessment

PREVIEW ONLY

I. PRE-FEEDING BEHAVIORS

If the infant is not yet orally feeding, score after observing 1-3 minutes of non-nutritive sucking on a pacifier or gloved finger.

If the infant is orally feeding, this section is scored as oral feeding is beginning, during the time prior to and at bottle nipple insertion or latch to the breast. If the infant is orally feeding, score item I-7 (Non-Nutritive Sucking) as "normal" if a sucking pattern is achieved. If a sucking pattern is not initiated, oral feeding should be stopped and Pre-Feeding Behaviors the only ones scored, using the abbreviated form.

*Items with an asterisk or that are green on the score sheet indicate those that are related to whether the infant is ready for oral feeding. If the infant achieves a score of 'A' on any of the asterisked or green items, oral feeding is not appropriate. Use the abbreviated form scoring criteria, and only score Section I. Infants achieving a score of 'D' on all items in section I may be appropriate to continue with the oral feeding assessment. If an infant achieves a score of 'B' / 'C' or 'E' it is advised that there be further assessment of whether the infant is ready for oral feeding by skilled personnel.

PREVIEW ONLY

- **Bolded** letter scores are the most optimal or performance expected of a full term infant or infant at term age.
- *Italicized* letter scores are abnormal performance, irrespective of the infant's PMA.

I-4. Rooting and Grasp* - This item is intended to assess how an infant demonstrates the rooting reflex and grasp in preparation for feeding. It is also an assessment of perioral/facial sensitivity.

Rooting demonstrates the infant's awareness and response to tactile cues and/or his or her ability to seek food. The rooting and grasp response should be assessed prior to oral feeding by gently stroking each side of the mouth with a finger, pacifier, or breast and observing the infant's response. If a response cannot be seen on the sides of the mouth, stroke the upper and lower lip surfaces. The rooting response is observed when the infant turns the head toward the stimulated side or orients the head to the stimulus with an open mouth and grasps with mouth. A grasp is when the infant contacts the bottom of the nipple with the top of the tongue and closes the mouth around the bottle nipple. For breastfeeding, this item assesses whether the infant responds to the cue of the nipple and gets the mouth somewhere on the breast. It is ideal that the infant is sufficiently roused (in state 3 or higher) with the head in midline for an optimal response.

*Rooting is elicited with stimulation or input to the area around the mouth. Providing stimulation or input 1 to 3 times is considered part of the input or stimulation needed to elicit spontaneous rooting and grasp, whereas 'with stimulation', as defined in 'C', is defined as stimulation that exceeds 3 times.

PREVIEW ONLY

Part III.

Scoring the Neonatal Eating Outcome Assessment and Score Sheet

PREVIEW ONLY

SCORING CRITERIA**Scoring:**

After all of the characteristics have been matched to their appropriate point value based on the infant's PMA at assessment, place each point value in the far right column of the score sheet for the corresponding item. The sum of all scores will derive a total. Points will fall into one of three categories as listed below:

Normal (expected performance for PMA)

Questionable (emerging or could signal challenge)

Feeding Challenge (immature for PMA or abnormal feeding)

Abbreviated Form:

If only Section I was scored, there is a range of scores from 6-30. Use the following criteria to score:

6-20: Feeding Challenge

21-26: Questionable

27-30: Normal

Full Form: **PREVIEW ONLY**

If Sections I, II, and III were scored, there is a range of scores from 18-90. Use the following criteria to score:

18-57: Feeding Challenge

58-76: Questionable

77-90: Normal

Neonatal Eating Outcome Assessment Score Sheet: I. Pre-Feeding Behaviors

Version 5.7

Study ID/Infant's Name:

Evaluation Date:

DOB:

Day of Life:

EGA at Birth:

Current PMA:

Breast or Bottle Feed:

Rater Name:

Item	Choices	Postmenstrual Age (weeks)								Score	
		30	31	32	33	34	35	36	37	38	
I-1. Arousal/State Organization*	A. Unable to rouse to state 3, even with stimulation B. Short periods of arousal with stimulation C. Prolonged arousal sustained after stimulation D. Wakes spontaneously	A=3 B, C, D=5	A=1 B,C,D=5	A=1 B=3 C, D=5	A, B=1 C=1 D=5	A, B, C=1 D=5					
I-2. Physiological Stability*	A. Poor physiological stability B. Intermittent periods of physiological stability with energy depletion C. Intermittent periods of physiological stability without energy depletion D. Physiological stability	A=3 B, C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A, B=1 C=3 D=5	A, B, C=1 D=5	A, B, C=1 D=5
I-3. Respiratory Support*	A. Ventilated B. Non-invasive respiratory support C. Minimal respiratory support D. Room air	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	Not Scored	--
I-4. Rooting and Grasp*	A. No response B. Weak or unilateral root and grasp C. Root and grasp with stimulation D. Spontaneous root and grasp E. Brisk response, frantic response, or avoidance	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A, B, E=1 C, D=5	A, B, E=1 C, D=5
I-5. Initiation of Sucking*	A. No initiation of sucking B. Requires minimal stimulation C. Requires moderate stimulation D. Spontaneously initiates sucking E. Active avoidance	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A,B,E=1 C,D=5	A,B,E=1 C,D=5
I-6. Tongue	A. Flaccid or non-responsive B. Flat with some tongue (upturned) C. Elevated and retracted D. Tongue cupping with central groove E. Deviated to side, tongue thrusting, or tongue bunching	A=3 B, C=3 D=5	A=1 B, C=3 D=5	A=1 B, C=3 D=5	A=1 B, C=3 D=5	A=1 B, C=3 D=5	A=1 B, C=3 D=5	A=1 B, C=3 D=5	A, B, C, E=1 D=5	A, B, C, E=1 D=5	A, B, C, E=1 D=5
I-7. Non-Nutritive Sucking	A. Absent B. Arrhythmic C. Intermittent burst-pause pattern D. Normal burst-pause pattern E. Prolonged burst-pause pattern	A, B, C, D=5	A, B, C, D=5	A, B, C, D=5	A, B, C, D=5	A, B, C, D=5	A, B, C, D=5	A, B, C, D=5	A, B, C, E=1 D=5	A, B, C, E=1 D=5	TOTAL: (Section 1)

Abbreviated Form:

If only Section I was scored, there is a range of scores from 6-30. Use the following criteria to score:

6-20 Feeding Challenge

21-26 Questionable

27-30 Normal

Neonatal Eating Outcome Assessment Score Sheet: II. Oral Feeding & III. Observations at the End of Feed

Item	Choices	Postmenstrual Age (weeks)										Score
		30	31	32	33	34	35	36	37	38	39	
II-1. Suck-Swallow-Breathe Coordination	A. Unable to coordinate sucking swallowing and breathing; Immediate sequelae B. No independent suck/swallow/breath sequencing; able to coordinate only when provided interventions C. Able to feed with intermittent interventions; independent swallow/breath sequence D. Independently demonstrates appropriate suck/swallow/breathe sequence	A, B, C, D=5	A=3 B,C,D=5	A=3 C, D=5	A=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A, B=1 C=3 D=5	
II-2. Sucking Burst Length	A. No sucking burst B. Minimal sucks per burst C. Appropriate sucks per burst D. Long pattern of sucks per burst	A, B, C=5	D=1 A, B, C=5	D=1 A, B, C=5	D=1 A, B=3 C=5	A, D=1 B=3 C=5	A, D=1 B=3 C=5	A, D=1 B=3 C=5	A, D=1 B=3 C=5	A, D=1 B=3 C=5	A, B=1 C=5	
II-3. Suction	A. No suction B. Minimal suction C. Normal suction D. Increased oral tone, clenched jaw, and/or pursed lips	B, C=5	D=1 A=3 B, C=5	D=1 A=3 B, C=5	D=1 A, D=1 B=3 C=5	A, D=1 B=3 C=5	A, D=1 B=3 C=5	A, D=1 B=3 C=5	A, D=1 B=3 C=5	A, B=1 C=1 D=5		
II-4. Oral Tone	A. Flaccid B. Decreased tone C. Adequate tone for feeding D. Increased oral tone, clenched jaw, and/or pursed lips	B, C, D=5	A=1 B, C, D=5	A=1 B, C, D=5	A=1 B, C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A, B=1 C=3 D=5		
II-5. Quality of Sucking Movements	A. Abnormal sucking pattern B. Moderate discordance on feeding C. Mild or intermittent discordation D. Mature, organized sucking pattern	B, C, D=5	A=1 B, C, D=5	A=1 B, C, D=5	A=1 B, C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A=1 B=3 C, D=5	A, B=1 C=3 D=5		
II-6. Behavioral Response to Feeding	A. Active avoidance or significant feeding stress responses that interfere with feeding B. Limited positive engagement/comfort during feeding with moderate engagement C. Mostly positive engagement/ comfort during feeding with minimal engagement D. No discomfort and positive engagement	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	A, B=1 C=3 D=5		
II-7. Fluid Loss	A. Significant fluid loss B. Moderate fluid loss C. Minimal fluid loss	B, C, D=5	A, B, C, D=5	A, B, C, D=5	A, B, C, D=5	A, B=1 C, D=5	A, B=1 C, D=5	A, B=1 C, D=5	A, B=1 C, D=5	A, B=1 C, D=5		
II-8. Swallow**	A. High risk (clear, clinical indications of aspiration) B. Moderate aspiration risk C. Mild aspiration risk D. Normal swallow	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	B, C, D=5	A, B, C=1 D=5		
II-9. Respiratory Control During Feeding**	A. Respiratory compromise with markedly increased work of breathing B. Moderately increased work of breathing C. Mildly increased work on breathing D. Appropriate respiratory control during feeding	B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A=3 B, C, D=5	A, B=1 C, D=5	A, B=1 C, D=5	A, B=1 C, D=5	A, B=1 C, D=5	A, B, C=1 D=5		
III-1. Feeding Completion	A. Stops due to physiologic instability B. Stops due to fatigue (unable to continue) or feeder stopped the feeding C. Discomfort D. Completed feeding E. Completed feeding, but demonstrates discomfort after feeding	A, B, D, E=5	C=1 A, B, D, E=5	A, B, D=5	C, E=1 A, B, D=5	A, B=3 C, D=5	A, B=3 C, D=5	A, B=3 C, D=5	A, B=3 C, D=5	A, B, C, E=1 D=5		
III-2. State Maintenance	A. Reaches state 3 or 4 only briefly B. Maintains state 3 or 4 for 4-7 minutes C. Maintains state 3 or 4 for 8-10 minutes D. Maintains state 3 or 4 >10 minutes	E=1 A, B, C, D=5	E=1 A, B, C, D=5	E=1 A, B, C, D=5	E=1 A, B, C, D=5	A=1 B=3 C,D,E, F=5	A=1 B=3 C,D,E, F=5	A=1 B=3 C,D,E, F=5	A=1 B=3 C,D,E, F=5	A, B, C, D=1 E=3 F=5		
III-3. Volume Consumed***	A. No milk consumption C. 1/4 milk consumption E. 75% of feeding consumed	A,B,C,D,E,F=5	A,B,C,D,E,F=5	A,B,C,D,E,F=5	A,B,C,D,E,F=5	TOTAL: (From Section 1)	TOTAL: (From Section 1)	TOTAL: (From Section 1)	TOTAL: (From Section 1)	TOTAL: (Sections 2 & 3)		
Full Form: If Sections I, II, and III were scored, there is a range of scores from 18-90. Use the following criteria to score: 18-57 = Feeding Challenge 58-76 = Questionable 77-90 = Normal												TOTAL SCORE: (Sections 1, 2, & 3)

Neonatal Eating Outcome Assessment Score Sheet: IV. Non-Scored Items

		Section IV-Items Not Scored	
IV-1. Feeder	<input type="checkbox"/> Nurse <input type="checkbox"/> Mother <input type="checkbox"/> Father <input type="checkbox"/> Therapist <input type="checkbox"/> Other:	IV-8. External Supports	<input type="checkbox"/> None <input type="checkbox"/> Tipping milk out of nipple <input type="checkbox"/> Pulling nipple out of mouth intermittently <input type="checkbox"/> Swaddling or other containment <input type="checkbox"/> Unswaddling <input type="checkbox"/> Decreased visual stimuli <input type="checkbox"/> Decreased auditory stimuli <input type="checkbox"/> Auditory support <input type="checkbox"/> Turning bottle <input type="checkbox"/> Tactile stimulation (state where): <input type="checkbox"/> Chin support <input type="checkbox"/> Cheek support <input type="checkbox"/> Jaw support <input type="checkbox"/> Holding/supporting breast <input type="checkbox"/> Massage breast <input type="checkbox"/> Squeezing breast <input type="checkbox"/> Holding/supporting breast <input type="checkbox"/> Form nipple <input type="checkbox"/> Other:
IV-2. Feeder Experience:	<input type="checkbox"/> First Time <input type="checkbox"/> 2-4 Feeds <input type="checkbox"/> 5-10 Feeds <input type="checkbox"/> 10+ Feeds/expert <input type="checkbox"/> Unknown <input type="checkbox"/> Previous breastfeeding experience for: _____ weeks <input type="checkbox"/> Previous challenges with breastfeeding (if any):	IV-9. Position During Feed	<input type="checkbox"/> Side-lying <input type="checkbox"/> Semi-side-lying <input type="checkbox"/> Upright <input type="checkbox"/> Enface <input type="checkbox"/> Cradled <input type="checkbox"/> Cross-Cradled <input type="checkbox"/> Football hold <input type="checkbox"/> Mother nursing infant while she is side-lying <input type="checkbox"/> Indicate supports used (nursing pillow, pillow under arm/under baby):
IV-3. Infant Feeding Experience	<input type="checkbox"/> None <input type="checkbox"/> Some due to feeding problems or immaturity <input type="checkbox"/> Some due to recent initiation of oral feeding <input type="checkbox"/> Minimal recent experience <input type="checkbox"/> Moderate <input type="checkbox"/> Unknown <input type="checkbox"/> Infant is full term and has been feeding since birth: DOL _____	IV-10. Heart Rate	<input type="checkbox"/> Number of times with HR >200: # _____ Longest time to recover: _____ <input type="checkbox"/> During active sucking and swallowing <input type="checkbox"/> During a pause in sucking and swallowing <input type="checkbox"/> After feeding is completed
IV-4. Infant's Current Feeding Regimen (check all that apply)	<input type="checkbox"/> Nuzzles at breast only <input type="checkbox"/> Oral feeding attempts <4 times per week <input type="checkbox"/> Oral feeding attempts 2-3 times per day <input type="checkbox"/> Oral feeding attempts 4-6 times per day <input type="checkbox"/> Attempts at full oral feeding with less than 50% of volume consumed and remainder of volume tube fed <input type="checkbox"/> Attempts at full oral feeding with 50-90% of volume consumed and remainder of volume tube fed <input type="checkbox"/> Ad lib with a maximum time engaged in within the previous 24 hour period <input type="checkbox"/> Ad Lib with a maximum time elapsed between feedings	IV-11. Respiratory Rate	<input type="checkbox"/> Only therapy feeding infant <input type="checkbox"/> Oral feeding attempt 1 time per day <input type="checkbox"/> Breastfeeding attempts with subsequent tube feeding of: _____ <input type="checkbox"/> Takes full oral feeds on a feeding schedule <input type="checkbox"/> Ad lib on demand <input type="checkbox"/> Cue based feeding
IV-5. Nipple Type	<input type="checkbox"/> Slow Flow <input type="checkbox"/> Regular Flow <input type="checkbox"/> Fast Flow <input type="checkbox"/> Breast with nipple shield <input type="checkbox"/> Special Nipple used: _____	IV-12. Oxygen Saturation	<input type="checkbox"/> No significant alterations in RR <input type="checkbox"/> RR at start of feed: _____ RR at end of feed: _____ Longest time to recover: _____ <input type="checkbox"/> Number of minutes with RR >60: _____ Longest time to recover: _____ <input type="checkbox"/> During active sucking and swallowing <input type="checkbox"/> During a pause in sucking and swallowing <input type="checkbox"/> After the feeding is completed
IV-6. Milk Type	<input type="checkbox"/> Mix of formula and breast milk <input type="checkbox"/> Formula <input type="checkbox"/> Breast Milk <input type="checkbox"/> Thickened Type of formula, if applicable: _____ # _____	IV-13. Time	<input type="checkbox"/> No significant alterations in O2 sats <input type="checkbox"/> Number of times with O2 sats <90%: # _____ Longest time to recover: _____ <input type="checkbox"/> During active sucking and swallowing <input type="checkbox"/> After the feeding is completed <input type="checkbox"/> Check here if additional oxygen support was given during or immediately after the feeding <input type="checkbox"/> Check here if infant with stable O2 sats but demonstrates respiratory alterations 2-3 minutes after the feeding ends
IV-7. Interruptions	Cause (change in position, change nipple, suspected aspiration): _____		<input type="checkbox"/> Time infant engaged in non-nutritive sucking: _____ <input type="checkbox"/> Time it took for infant to grasp nipple and initiate sucking after first presentation: _____ <input type="checkbox"/> Number of burps: # _____ Approximate time spent burping: _____ <input type="checkbox"/> Cleft palate <input type="checkbox"/> Cleft lip and palate <input type="checkbox"/> Lip tie with surgical intervention <input type="checkbox"/> Lip tie without surgical intervention <input type="checkbox"/> Micrognathia <input type="checkbox"/> Macroglossia <input type="checkbox"/> Pierre Robin Sequence <input type="checkbox"/> Cardiac anomaly <input type="checkbox"/> Neonatal Abstinence Syndrome
IV-14. Infant Anatomic and Functional Variations	<input type="checkbox"/> None <input type="checkbox"/> Tongue tied-no surgical intervention <input type="checkbox"/> Recessed jaw <input type="checkbox"/> Down's Syndrome Describe: _____		

PREVIEW ONLY

Neonatal Eating Outcome Assessment Score Sheet: IV. Non-Scored Items (**FOR BREASTFEEDING ONLY**)

IV-15. Mother's Milk Supply*** Volume: <input type="checkbox"/> Minimal to none <input type="checkbox"/> Some <input type="checkbox"/> Diminished <input type="checkbox"/> Adequate <input type="checkbox"/> Overabundance <input type="checkbox"/> Unknown # ml supply each day: _____ <input type="checkbox"/> Indicate if the Supplemental Nursing System is Used IV-16. Pumping Schedule N/A - mother not expressing milk <input type="checkbox"/> Mother pumps intermittently in order to offer a bottle, stimulates milk production or save milk <input type="checkbox"/> Mother with a need for milk expression due to infant not yet orally feeding <input type="checkbox"/> Mother not pumping routinely <input type="checkbox"/> Mother expressing her milk 1-3 times per day <input type="checkbox"/> Mother expressing her milk 4-6 times per day <input type="checkbox"/> Mother expressing her milk 7+ times per day Average length of time pumping: _____ Approximate time from start of pump until let-down: _____ Amount expressed at each session: _____ Type of pump used: _____		IV-20. Breast(s) <input type="checkbox"/> Infant fed on only one breast: <input type="checkbox"/> Right <input type="checkbox"/> Left <input type="checkbox"/> Infant fed on both breasts: <input type="checkbox"/> Right first <input type="checkbox"/> Left first If fed on both breasts: _____ Time on first: _____ Time on second: _____ <input type="checkbox"/> Switched breasts a second time	<input type="checkbox"/> None <input type="checkbox"/> Breast implant <input type="checkbox"/> Breast reduction <input type="checkbox"/> Large breasts <input type="checkbox"/> Breast engorgement <input type="checkbox"/> Flat nipples <input type="checkbox"/> Inverted nipples <input type="checkbox"/> Nipple pointing down	<input type="checkbox"/> Breast piercings <input type="checkbox"/> Only one breast <input type="checkbox"/> Other breast surgery <input type="checkbox"/> Small breasts <input type="checkbox"/> Breast infection <input type="checkbox"/> Iron deficiency anemia <input type="checkbox"/> Overweight/Obesity <input type="checkbox"/> Hypothyroidism <input type="checkbox"/> Polycystic Ovarian Syndrome <input type="checkbox"/> Reynaud's Syndrome <input type="checkbox"/> Retained placenta
IV-21. Maternal Anatomy # of days since birth of infant: _____		IV-22. Maternal Complications # of days since birth of infant: _____	IV-23. Managing Breastfeeding Physical impairment: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Need for multiple attempts to aid success Lack of skill: <input type="checkbox"/> Yes <input type="checkbox"/> No Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No	Mother manages tasks of breastfeeding well without incidence Difficulty motorically managing task of breastfeeding: <input type="checkbox"/> Yes <input type="checkbox"/> No
IV-17. Maternal Comfort Level When: <input type="checkbox"/> Only at beginning of feeding <input type="checkbox"/> Between feedings IV-18. Breastfeeding Contraindications** HIV <input type="checkbox"/> Infant galactosemia <input type="checkbox"/> Untreated brucellosis <input type="checkbox"/> Untreated active tuberculosis <input type="checkbox"/> Human T-cell lymphotropic virus <input type="checkbox"/> Illicit drug use <input type="checkbox"/> Alcohol use within the last 2 hours		IV-24. Maternal Motor Factors Environmental Distractions: <input type="checkbox"/> Chemotherapy <input type="checkbox"/> Radiation therapies <input type="checkbox"/> Taking antiretrovirals <input type="checkbox"/> Ebola virus <input type="checkbox"/> Has herpes simplex lesions on breast	<input type="checkbox"/> Infant not lined up to breast <input type="checkbox"/> Mother's shoulders elevated <input type="checkbox"/> Tension throughout body	Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No
IV-19. Mother's Flow Rate Unknown <input type="checkbox"/> Within first few days of birth and milk not yet in <input type="checkbox"/> Slow <input type="checkbox"/> Average <input type="checkbox"/> Excessive		IV-25. Maternal Environmental Factors Environmental Distractions: <input type="checkbox"/> Mom answers phone or texts <input type="checkbox"/> Television	<input type="checkbox"/> Infant with low activity <input type="checkbox"/> Infant with high activity	Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No
		IV-26. Mother-Infant Dynamics Mother stressed? <input type="checkbox"/> Yes <input type="checkbox"/> No	Family members (lack of support): <input type="checkbox"/> Yes <input type="checkbox"/> No	Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No Maternal adaptation <input type="checkbox"/> Yes <input type="checkbox"/> No

Section IV-Items Not Scored-BREASTFEEDING ONLY

PREVIEW ONLY

Recommendations for Subsequent Feedings:

Apparatus	<input type="checkbox"/> Slow Flow <input type="checkbox"/> Regular Flow <input type="checkbox"/> Fast Flow <input type="checkbox"/> Breast <input type="checkbox"/> Breast with breast shield <input type="checkbox"/> Breast with Supplemental Nursing System <input type="checkbox"/> Special Specific nipple type (specify):
Methods	<input type="checkbox"/> Swaddling <input type="checkbox"/> Decreased auditory stimuli <input type="checkbox"/> Jaw support <input type="checkbox"/> Chin/cheek support <input type="checkbox"/> Rocking <input type="checkbox"/> Decreased visual stimuli <input type="checkbox"/> Auditory support <input type="checkbox"/> Other:
Positioning	<input type="checkbox"/> Side-lying <input type="checkbox"/> Upright <input type="checkbox"/> Enface (face-to-face) <input type="checkbox"/> Football hold <input type="checkbox"/> Cradled <input type="checkbox"/> Cross Cradled <input type="checkbox"/> Mother in sidelying
Breastfeeding interventions	<input type="checkbox"/> Increase milk supply <input type="checkbox"/> Breast shield <input type="checkbox"/> Express milk prior to feeding and have infant feed afterward
Additional Comments	

PREVIEW ONLY