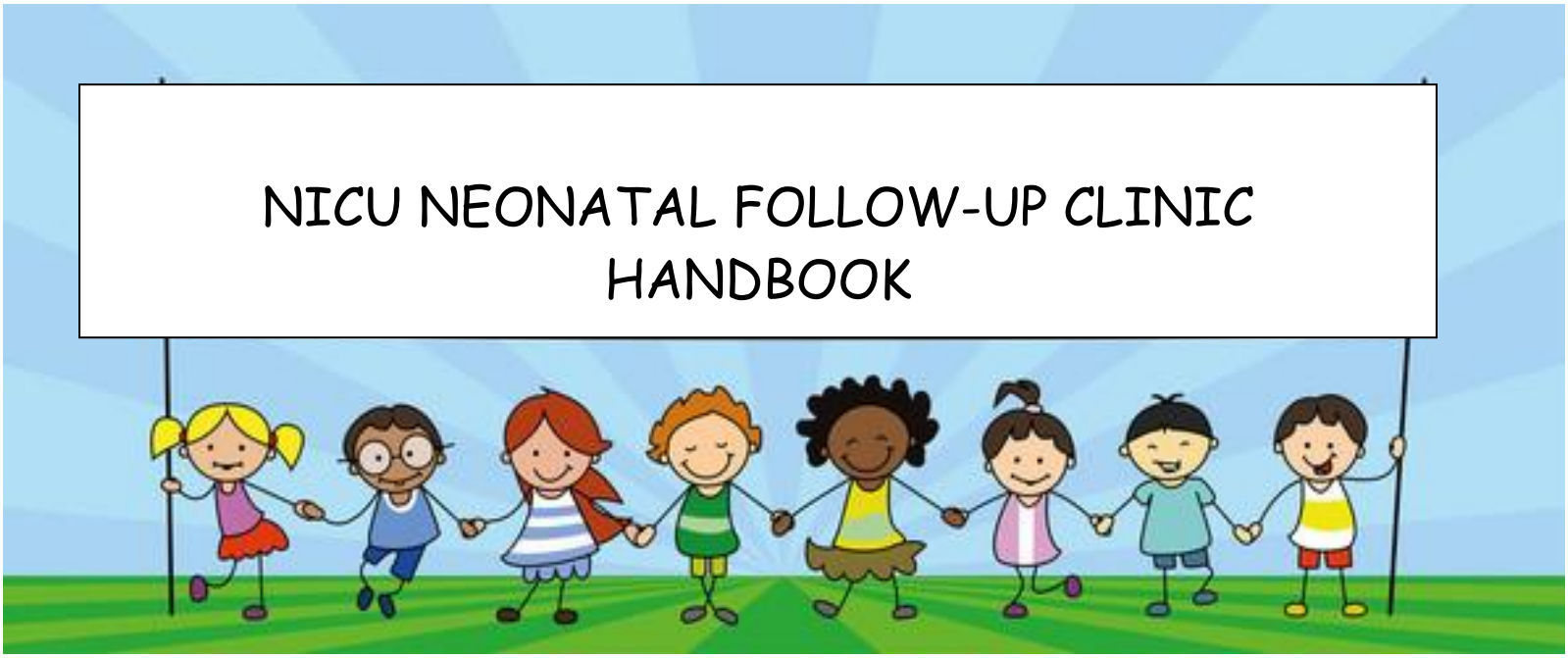
NICU NEONATAL FOLLOW-UP CLINIC HANDBOOK



NEONATAL FOLLOW-UP CLINIC
WOMEN & INFANTS HOSPITAL OF RHODE ISLAND
134 THURBERS AVENUE, SUITE 215
PROVIDENCE, RI

Betty Vohr, M.D., Director
Elisabeth McGowan, M.D., Associate Director
Betsey Mottershead, Editor

Mara Coyle, Lenore Keszler, Andrea Knoll, Julie Mayne,
Andrew McGrath, Heather Polochick, Lynn Przystac,
Victoria Watson

Handbook for Neonatal Follow-Up Program

NICU Neonatal Follow-up Clinic Handbook

Location: Family Assessment Center (handicap accessible)
134 Thurbers Avenue
Providence, RI 02905
Phone 401-453-7750

Hours: Tuesdays 9:00 - 4:30 pm
Wednesdays 9:00 - 4:30 pm
Thursday 9:00 - 4:30 pm

Criteria for Follow-up: Eligible infants:
Infants in the following categories are routinely scheduled: Premature infants weighing less than 1500 grams at birth or less than 34 weeks gestation, NICU infants of any birth weight with a variety of complications including IVH, BPD, asphyxia, meningitis, congenital malformations and infants discharged on cardiorespiratory monitors or oxygen. Infants may be referred for growth, neurologic, developmental or behavioral concerns. Children from birth to 5 years of age are routinely longitudinally evaluated.

Staff: Follow-up Team

Betty Vohr, M.D.	Clinic Director
Elisabeth McGowan, M.D.	Associate Director
Lenore Keszler, M.D.	Physician
Vita Lamberson, M.D.	Physician
Julie Mayne, M.D.	Physician
Megan Sheehan, PNP	Pediatric Nurse Practitioner
Victoria Watson MS, CAS	Lead Psychologist
Stephanie Moffat, BS	Research Psychologist
Heather Polochick, LICSW	Medical Home Care Supervisor
Brigit Aguiar, LICSW	Clinical Social Worker
Andrea Knoll	Supervisor, Family Assessment Center
Kelly Satti	Senior Business Office Representative
Richard Tucker, BA	Data Analyst
C. Lourdes Rios	Associate Administrative Coordinator

Support Staff and Trainees	Position
Fellows: 1 fellow at each clinic	Training
Residents: Rotation	Training
Undergraduates: 1	Student
Medical student: 1	Student

Purpose: The Follow-up Program has been providing supplemental care to infants cared for in the Neonatal Intensive Care Unit (NICU) since 1974.The mission of the Neonatal Follow-up Program is to provide a continuum of specialized transition and follow-up care for graduates of the NICU. Children receive medical, growth, neurologic, developmental, and behavior assessments. Families receive comprehensive support, referrals, feedback and recommendations. A second objective is to maintain a database of outcomes and to conduct prospective, longitudinal outcome studies including descriptive studies, intervention studies, clinical trials and multicenter clinical trials.

The Follow-up Clinic is committed to teaching neonatal fellows, pediatric residents, visiting physicians and students.

Referrals come from the NICU discharge planner, private practitioners, clinics, Early Intervention, VNA, and parents. Informed consent is obtained when indicated.

Assessments: Medical Management includes the following: Infants with medical problems such as apnea of prematurity, obstructive apnea, broncho-pulmonary dysplasia, reflux and failure to thrive, are managed longitudinally until such time that the problem is resolved.

Service Components

Cardiorespiratory Monitors or Pulse oximeters

1. Monitor alarms and clinical events are reviewed.
2. Physical and neurological examination completed.
3. Parents counseled on “normal events” which occur at home.
4. Medications and levels reviewed; tapered and discontinued as indicated.
5. Pulse oximetry done as needed; on oxygen, off oxygen, during a feed
6. Feeding observed
7. Obtain download and review
8. Perform car-seat test

Bronchopulmonary dysplasia

1. Monitor pulmonary status, oxygen level as needed, and confounding conditions
2. History and physical
3. Monitor medications, taper as indicated in conjunction with Pulmonary clinic
4. Monitor growth velocity
5. Nutrition assessment- calculate intake of liquid, calories, protein, and calcium

Reflux

1. Review history of clinical reflux and alarms
2. Physical and neurological assessment
3. Review pneumogram download if indicated
4. Monitor growth velocity
5. Nutrition assessment - calculate intake of volume, calories, protein, fat, calcium and carbohydrate
6. Reflux management and precautions -medications, Tucker sling, small feeds, and/or thickened feeds
7. Refer to GI and feeding team as needed.

Failure to thrive

1. Nutrition consults with assessment of total caloric, protein, fat and carbohydrate intake
2. Assessment of growth velocity and weight/length ratio
3. Monitor growth between visits.
4. Observe a feed

Neurosensory and developmental assessments are completed on high risk infants, results are provided to parents and recommendations are made for appropriate community support services.

1. A complete assessment of neuromotor status is completed on each child at each visit along with an in depth developmental assessment and feedback is provided to families. A report of the visit is then forwarded to the pediatrician, Early Intervention and any other specialists the family wishes, and referrals are made to appropriate consultants (i.e. neurology, CP clinic, or orthopedics). Children are categorized neurologically as normal, suspect or abnormal and a specific diagnosis may be made (i.e. spastic diplegia).

2. Age of assessment: Infants with special health care needs (such as oxygen, apnea monitor, feeding issues) are seen within 1 month of discharge and followed closely. Stable VLBW infants are seen at the corrected ages of 3 months, 7 months, 12 months, 24 months and a chronological age of 30-36 months and 5 years.

The Follow-Up Clinic provides assessments for premature babies and other children referred for developmental delays and learning difficulties. We complete evaluations in the following areas:

- Cognitive
- Language - Receptive and Expressive
- Motor – Fine and Gross
- Behavior – Internalizing and Externalizing
- Adaptive Behavior
- Executive Functioning
- Memory
- Achievement
- Phonological Processing

Screening or diagnostic tests

<u>Birth to 11 months</u>
Ireton Child Development Inventory: First 18 Months

<u>12 & 24 months</u>
Bayley Scales of Infant Development, 4th Edition (BSID-IV)

- Cognitive Composite
- Language Composite
  - Expressive Communication
  - Receptive Communication
- Motor Composite
  - Fine Motor
  - Gross Motor

<u>24 months</u>
Pervasive Developmental Disorder Screening Test (Stage II) [24 months] as necessary due to observed concerns

Child Behavior Checklist (CBCL) [24 months for children enrolled in NRN studies]
Internalizing Behaviors

- Emotionally Reactive
- Anxious/Depressed
- Somatic Complaints
- Withdrawn

Externalizing Behaviors

- Attention Problems
- Aggressive Behavior

Total Problem Behaviors

<u>3 & 5 years</u>
Wechsler Preschool and Primary Scale of Intelligence-Fourth Edition (WPPSI-IV)

- Verbal Comprehension Index
- Visual Spatial Index
- Fluid Reasoning Index [age 5 only]
- Working Memory Index
- Processing Speed Index [age 5 only]
- Full Scale IQ

Movement Assessment Battery for Children (ABC)-2nd Edition

- Manual Dexterity
- Aiming and Catching
- Balance

Child Behavior Checklist (CBCL)

<u>5 years</u>
Beery-Buktenica Developmental Test of Visual-Motor Integration-Sixth Edition (VMI)

- Visual-Motor Integration Score

Behavior Rating Inventory of Executive Function – Preschool Version (BRIEF-P)
Global Executive Composite

- Inhibit
- Shift
- Emotional Control
- Working Memory
- Plan/Organize

Tests	Age	Age
Bayley Scales of Infant Development, 3rd Edition (BSID-III)	12m, 24m	NA
	5-6 y 11m	> 7 y
Wechsler Preschool and Primary Scale of Intelligence-4th Edition (WPPSI-IV) [Ages 2y 6m to 7y 7m]	X	X
Wechsler Intelligence Scale for Children-4th Edition (WISC-IV) [Ages 6y+]	X	X
Wechsler Abbreviated Scale of Intelligence (WASI)	X	X
Beery Test of Vision Motor Integration (VMI)	X	X
Child Behavior Checklist CBCL	X	X
Vineland	X	X
Behavior Rating Inventory of Executive Function (BRIEF)	X	X
Kindergarten Readiness Test (KRT)	X	
Wide Range Achievement Test-4th Edition (WRAT-IV)	X	X
Developmental Neuropsychological Assessment (NEPSY) [Ages 5-12]	X	X

The Premature Infant - Definitions

Low birth weight (LBW) - birth weight is less than 2500 g

Very low birth weight (VLBW) - birth weight is less than 1500 g.

Extremely low birth weight (ELBW) - birth weight is less than 1000 g

Extreme Preterm - < 28 weeks

Early Preterm - < 32 weeks

Moderate Preterm - 32-33 weeks

Late Preterm – 34-37 weeks

Term infant - any neonate whose birth occurs at 38 to 42 weeks.

Micro premie - any neonate whose birth weight is less than 750 g.

Premature - any neonate whose birth occurs at 37 weeks or less.

Gestational Age - The number of completed weeks that have elapsed between the first day of the last menstrual period and the day of delivery.

Chronological Age - The age of the infant based on the number of weeks or months since the date of delivery.

Corrected Age - The age of the infant calculated from the expected date of delivery. It may also be calculated by subtracting the number of weeks of prematurity from the chronological age. For example, an infant born 6 months ago with a gestational age of 28 weeks (3 months premature) has a chronologic age of 6 months and a corrected age of 3 months.

Small for gestation – weight <10^{th} % for gestation

Appropriate for gestation – weight $\geq 10^{th}$% for gestation

Threshold of viability - 22-23 weeks gestation

Premie Care the First Year; Management Issues

With the advent of the surfactant era and increasingly sophisticated ventilation strategies, very low birth weight (VLBW) infants <1500 grams are surviving in increasing numbers. In addition, newly developed managed health care guidelines are resulting in early discharge recommendations. VLBW infants, previously discharged near term age (40±2 weeks), are now commonly discharged at 35 to 36 weeks of age, and sometimes as early as 32 weeks of age. Therefore, the primary- care physician seeing pediatric patients is now caring for more VLBW survivors with complex medical problems and initiating care at an earlier, more vulnerable age.

Providing a smooth transition from Neonatal Intensive Care Unit (NICU) care to home care requires a detailed transfer of information to both the family, the primary physician (the medical home) and involved subspecialists. A copy of the NICU discharge summary is made available at the time of discharge and should include the following: 1) Newborn problem list, 2) Medications and doses, 3) Nutritional recommendations and a copy of the hospital growth chart, 4) Home monitor, oxygen, G-Tube/J-Tube, requirements, 5) Primary Care appointment within 1-2 weeks of discharge, 6) Appointments with consultants/specialty services, and 7) Support services needed: i.e. Home Care, Visiting Nurse, Early Intervention.

Having this basic information along with a copy of the hospitalization summary will permit the primary physician to continue the coordination of the infants' and family's care. Five areas to be covered are: 1. growth and nutrition, 2. Bronchopulmonary Dysplasia (BPD), 3. Apnea monitoring, G-tubes, Reflux, 4. Immunizations, 5. Neurologic and developmental status.

<u>Growth in Follow-Up Clinic</u>

An understanding of a premature infant's well-being and growth pattern requires an awareness of the infant's gestation and growth status at birth, i.e. Appropriate for Gestation (AGA) and Small for Gestational Age (SGA) < 10^{th} % for age and gender, chronologic age, and corrected age. The definitions of these terms are on page 5. For infants discharged prior to term, an intrauterine growth curve is needed to plot growth changes, whereas after 40 weeks a standard growth curve can be utilized. The Centers for Disease Control and Prevention (CDC) recommends the WHO growth standards to monitor growth for infants and children 0 to 2 years of age and the CDC growth charts for children 2 years and older in the U.S. It is recommended that "corrected age" be used when plotting growth parameters for VLBW infants from birth to 2 years 6 months of age.

ELBW survivors have an increased risk of growth failure. The significant percent of extremely low birth weight (ELBW; ≤1000g) infants become growth restricted with parameters below the 10^{th} percentile by 36 weeks postconceptional age, and many remain small for age into childhood and adolescence. Hack et al reported, however, that VLBW infants have numerous sporadic episodes of accelerated growth velocity during the first year. Acceleration should occur between 4 and 12 months with growth parameters approaching the 25^{th} to 50^{th} percentile. Micropremies, infants born at 23 to 26 weeks gestation, often have a more delayed growth pattern. Head growth for both AGA and SGA infants achieves catch-up before weight and length, and is not unusual for the head circumference to be at the 50^{th} to 90^{th} percentile with weight and length still at the 3^{rd} to 25^{th} percentile. This is related to earlier accelerated brain growth velocity in the stable healthy infants with appropriate nutritional intake. Fontanel size is large during this phase. A continually increasing fontanel or a tense or pulsating fontanel suggests the development of late onset hydrocephalus, requiring further evaluation. Improved nutritional management in the NICU

has resulted in improved overall growth of preterms.

SGA infants with symmetric growth restriction, that is weight, length, and head circumference <10th percentile have a lowered potential for "catch up" growth. It is important to plot growth parameters at regular intervals to identify infants falling off their growth curve, or accelerating at an abnormal rate. A more precise way of tracking changes in growth velocity is to compare percentiles or z-scores of measurements over time. Percentile and z-score calculators are available at: www.PediTools.org .

References:

1. Hack M, Fanaroff AA. Outcomes of children of extremely low birthweight and gestational age in the 1990s. Seminars in Neonatology 2000;5(2):89-106.
2. Wilson-Costello D, Friedman H, Minich N, Fanaroff AA, Hack M. Improved survival rates with increased neurodevelopmental disability for extremely low birth weight infants in the 1990s. Pediatrics 2005;115(4):997-1003.
3. Wilson-Costello D, Friedman H, Minich N, Siner B, Taylor G, Schluchter M, et al. Improved neurodevelopmental outcomes for extremely low birth weight infants in 2000-2002. Pediatrics 2007;119(1):37-45.
4. Laptook AR, O' Shea TM, Shankaran S, Bhaskar B, and the NNN. Adverse Neurodevelopmental Outcomes Among Extremely Low Birth Weight Infants With a Normal Head Ultrasound: Prevalence and Antecedents. Pediatrics 2005;115(3):673-680.
5. Dusick AM, Poindexter BB, Ehrenkranz RA, Lemons JA. Growth failure in the preterm infant: can we catch up? Semin Perinatol 2003;27(4):302-10.
6. Ehrenkranz RA. Growth outcomes of very low-birth weight infants in the newborn intensive care unit. Clin Perinatol 2000;27(2):325-45.
7. Ehrenkranz RA, Younes N, Lemons JA, Fanaroff AA, Donovan EF, Wright LL, et al. Longitudinal growth of hospitalized very low birth weight infants. Pediatrics 1999;104(2 Pt 1):280-9.
8. Lemons JA, Bauer CR, Oh W, Korones SB, Papile LA, Stoll BJ, et al. Very low birth weight outcomes of the National Institute of Child health and human development neonatal research network, January 1995 through December 1996. NICHD Neonatal Research Network. Pediatrics 2001;107(1):E1.
9. Steward DK, Pridham KF. Growth patterns of extremely low-birth-weight hospitalized preterm infants. J Obstet Gynecol Neonatal Nurs 2002;31(1):57-65.
10. Poindexter BB, Langer JC, Dusick AM, Ehrenkranz RA. Early provision of parenteral amino acids in extremely low birth weight infants: relation to growth and neurodevelopmental outcome. J Pediatr 2006;148(3):300-305.
11. Clark RH, Thomas P, Peabody J. Extrauterine growth restriction remains a serious problem in prematurely born neonates. Pediatrics 2003;111(5 Pt 1):986-90.
12. http://www.cdc.gov/growthcharts At this website links to both the WHO and CDC growth charts and the article MMR: Use of WHO and CDC Growth Charts for Children aged 0-59 months in the US are available.

Nutrition in Follow-Up Clinic

Often nutritional issues are not completely resolved at the time an infant leaves the Women & Infants Hospital NICU. A neonatal nutritionist from the NICU is available to make recommendations and provide nutritional assessments for providers and caregivers as requested. Criteria for referral to the nutritionist at Follow-Up Clinic include:

- Length-for-age (corrected or chronologic age, as appropriate) <2nd percentile for children from birth through 24 months of age on WHO growth standard.
- Height-for-age (corrected or chronologic age, as appropriate) <5th percentile for children > 24 months of age on CDC growth curve.
- Weight-for-length <2nd percentiles or >98th percentile for children from birth through 24 months of age on WHO growth standard.
- BMI <5th percentile or ≥85th percentile for children older than 2 years.
- Weight-for-length or BMI have decreased or increased two or more major percentile rankings on the approved growth curve since the last visit.
- Diet and/or feeding patterns/practices appear inadequate or inappropriate.
- Questions arise concerning safe preparation, handling, and storage of infant/pediatric formula and foods.
- Family has inadequate access to food (food insecurity).
- Parents or caregiver(s) have nutrition-related questions or concerns.

Adapted from CDC Growth Curves References[1,2,3]

Anthropometric Index	Percentile Cut-off Value	Nutritional Status Indicator
Lt-for-age (0-24 m)	< 2nd	Short Stature
Ht-for-age (>24 m)	<5th	Short Stature
Weight-for-Length (0-24 m)	< 2nd	Underweight
BMI-for-Age (> 24 m)	< 5th	Underweight
Weight-for-Length (0-24 m)	> 98th	Overweight
BMI-for-Age (> 24 m)	≥ 85th and < 95th	At Risk of Overweight
BMI-for-Age (> 24 m)	≥ 95th	Overweight

In 2014, guidelines were published to provide clinicians with evidence-based criteria to identify malnutrition in the pediatric population.[4] All premature infants are at nutritional risk during neonatal hospitalization. For some, malnutrition may develop. The more complicated the neonatal medical course is for a premature infant, the more likely that malnutrition will become a diagnosis. Former premature infants may remain at increased risk for a period of time after neonatal

hospitalization while their bodies work to increase and replenish nutrient stores. For these reasons, when more intensive nutrition management is required, the Follow-Up Clinic nutritionist may recommend a referral to an Early Intervention nutritionist, WIC Program nutritionist, or the Feeding Team nutritionist at Hasbro/RIH. For mothers who breast feed their former premature infants, the Women & Infants Hospital lactation consultants are another source of support.

References:
1. Use and Interpretation of the CDC Growth Charts, p 4, accessed 11/20/2011. http://www.cdc.gov/nccdphp/dnpa/growthcharts/resources/growthchart.pdf
2. Using the BMI-for-Age Growth Charts, p5, accessed 11/20/11. http://www.cdc.gov/nccdphp/dnpa/growthcharts/training/modules/module1/text/page5a.htm
3. Use of World Health Organization and CDC Growth Charts for Children Aged 0–59 Months in the United States. www.cdc.gov/mmwr
4. Becker P et al., Consensus Statement of the Academy of Nutrition and Dietetics / American Society for Parenteral and Enteral Nutrition: Indicators Recommended for the Identification and Documentation of Pediatric Malnutrition. Nutrition in Clinical Practice. 2014. http://pen.sagepub.com/content/36/3/275.full.pdf+html

NUTRITION

By the week of discharge from the NICU, most premature infants are consuming 11 to 13 ounces per day of breast milk or formula ad libitum (i.e., approximately 165 to 200 ml/kg/d). These per kg volumes are excellent but will not provide adequate protein and nutrient intakes if premature infants are taking full-term infant formulas. At these intakes on full-term infant formulas, preterm infants would receive only 42 to 50 percent of the dietary intake recommended for term infants. Full-term infants require approximately 26 oz/d of 20 kcal/oz full-term formula to meet their nutritional needs.

Preterm infants may have even greater nutrient needs than full-term infants and will not consume 26 oz/d (even at an intake of 200 ml/kg/d) until they reach a weight of 4 kg (8 lb 13 oz). For that reason, just before discharge from the NICU, formula-fed infants move from premature infant formula to transitional infant formula. Transitional formula has a nutrient density that is between that of premature formulas and full term formulas. One nutrient, iron, is the exception to this rule. Iron content is 1.8 mg per 100 kcal of formula, the same as in most iron-fortified infant formulas. Transitional formula is also used as a supplement for former premature infants who are breast fed.

We recommend that premature infants receive breast milk or infant formula exclusively until 4 to 6 months corrected age. We discourage the introduction of solids before this time because developmental readiness for solid foods may appear later for premature infants than term infants. Signs of readiness include an infant's ability to: control his head and neck, sit up with support, show interest in food when hungry, and indicate when satisfied by turning the head away or refusing to open the mouth. Feeding guidelines for former premature infants are the same as for full-term infants with one exception. Corrected age, rather than chronologic age, should be used as a guide for when to start solids. Feeding liquids and solids at the appropriate developmental stage (and by developmentally appropriate means) is as important for the premature infant as it is for the full-term infant.

Because most caregivers of former premature infants see their infants in terms of chronological age rather than corrected age, they may need gentle reminders not to start solids too soon. Caregivers should be encouraged to use an infant's corrected age and follow the American

Academy of Pediatrics guidelines for introducing solids during the first year. From 4 to 6 months corrected age, it may also be helpful to encourage that infants receive breast milk or infant formula first at meal-time and solids second, to assure adequate breast milk or formula intake. Breast milk or infant formula should continue until 12 months corrected age. Mothers should be encouraged to breastfeed their child beyond the first year of life if desired.

The early introduction of solids may compromise nutritional intake. Solid foods are generally less nutrient dense than breast milk or infant formula. Compromised nutrition may also occur if caregivers start cow's milk or fruit juices too soon. We recommend that fruit juice begin between 6 to 8 months corrected age and that whole cow's milk be started at 1 year corrected age. The early use of these may decrease formula intake and so cause an imbalance in nutrient intake. Forced feeding may occur if families mix solids with formula in the bottle or other bottle-like feeder.

With an appropriate nutritional intake at home, the premature infant will likely thrive. At Follow-Up Clinic visits, we have seen improved growth in infants who consume a transitional formula. Before transitional formulas were available, catch-up growth was often poorest for infants' length. With transitional formulas we see greater improvement in length measurements and a better balance of nutrient intake for infants born at less than 37 weeks gestation and weighing less than 2 kg (4 lb 6 oz).

The question of how long an infant should remain on a transitional formula remains unclear due to limited research. Taking parental stature into account, length, weight, and head circumference measurements should show evidence of catch-up by three months corrected age and gradually reach at least the 25th to the 50th percentile at a child's own rate. When an infant reaches and maintains these percentiles and is able to consume approximately 26 oz/d of formula, it may be appropriate to change to a term formula. If the infant does not maintain growth progress on the term formula, return to the transitional formula and, as appropriate, request a nutrition assessment. A more general guideline is:

Birthweight:	**Use enriched feedings until:**
< 1000 g	9 to 12 months
1000 to 1499 g	6 to 9 months
1500 to 2000 g	3 to 6 months
> 2000 g	1 to 3 months

The impact of the transitional formula on growth may lessen as infants mature and consume more and more of their diets as solids.

In general, we assume that larger, healthier premature infants may require less time on transitional formula than smaller, sicker premature infants. Growth progress is monitored using the WHO and CDC growth curves as previously discussed. Measurements are plotted using corrected age. We recommend that pediatricians plot measurement at the corrected age until a child is 2 ½ years old and use a length board to measure recumbent length. It is expected that catch-up growth will be more difficult for small-for-gestational age infants than for appropriate-for-gestational age infants.

Approximate growth rates for girls and boys at the 50th percentile of the WHO growth standards are:

	Weight	**Length**
Birth to 3 months	31 g/d	0.85 cm/wk
3 to 6 months	17 g/d	0.47 cm/wk
6 to 9 months	11 g/d	0.34 cm/wk
9 to 12 months	8 g/d	0.29 cm/wk

During the catch-up phase, premature infants may gain at significantly greater rates than those above. High nutritional intakes will accompany rapid growth. Ideally, the percentile ranking for weight-for-age and the one for length-for-age should be less than two percentile rankings apart when compared on growth curves. Body weight and length are in proportion when the age-independent measure of weight-for-length that falls between the 25th and the 75th percentile. Strategies to prevent overweight and obesity in full-term infants such as delaying the introduction of solids until 4 to 6 months of age and avoiding putting infants to bed with bottles of formula may also be effective with former premature infants who show signs of rapid weight gain.

Feeding premature infants and children can challenge both the Follow-Up Clinic staff and the family. Meeting the special nutritional needs of these infants and children will promote recovery, enable catch-up growth, and optimize development. The following tables summarize basic information about breast milk, standard infant formulas, recipes/mixing instructions and management of a gastrostomy tube that may be useful as quick references when seeing patients in Follow-Up Clinic.

Most full-term infant formulas are available in three forms: ready-to-use, concentrate, and powder. When prepared according to the directions on the label, the three forms of a brand are equivalent nutritionally even if the appearance varies. The concentrate and powder forms of a brand are usually more economical to use than the ready-to-feed version.

Powdered infant formula is the main form of infant formula sold in the US. Over 80% of our formula dollars are spent on powdered formula. While formula powder is not sterile, it is safe when prepared and stored properly. In fact, powdered formula offers a food safety advantage when people are traveling or out for the day because formula from powder can be mixed fresh for each feeding. Recipes for mixing infant formulas are available on the Women & Infants Hospital NICU SharePoint and in formula company literature located in Follow-Up Clinic. It is important to measure formula powder carefully. For recipes that use scoops to measure the powdered formula, use only the scoop that came in the can of powdered formula.

The transitional formulas (NeoSure and EnfaCare) are available in ready-to-use and in powdered form. The standard dilution is 22 kcal/oz of formula, but it can also be mixed to other concentrations. We often recommend that transitional formula be concentrated to 24 kcal/oz for infants with poor growth. Occasionally we recommend concentrating further to 27 kcal/oz. Caregivers using 27 kcal/oz formula must be cautioned to use it as directed. Fed alone, formulas concentrated to 27 kcal/oz have high renal solute loads and should not be used without close medical supervision, especially in hot weather or when total fluids are restricted to <120 ml/kg/d.

Occasionally a full-term infant will require a calorie-enhanced formula (i.e., one that contains more than 20 calories per fluid ounce when ready-to-use). Since this type of formula is not sold in the stores, it is necessary to prepare it at home from concentrate or powder. Calories may be

increased from 20 to a maximum of 30 calories per fluid ounce. Increases should be made slowly - first by concentrating the formula to 22, 24, and then 27 calories per ounce and later with additional calories from corn oil (a fat).

It is not uncommon for caregivers to misunderstand and/or lose formula recipe instructions that they received when their infant was discharged from the NICU. This can happen to caregivers of all income and education levels. When it does happen, caregivers may unintentionally over or under dilute formula, providing too many or too few calories/oz to their infant which. This may result in over or undernutrition and growth that is too rapid or too slow.

Caregivers may also unintentionally use unsafe procedures when preparing formula. Some common examples of unsafe formula preparation include the caregiver not washing hands and/or the mixing area before preparing formula, not cleaning bottles and nipples properly, measuring ingredients improperly, using warm water from the tap to mix formula, and letting prepared formula sit out for too long before refrigeration. When formula is prepared using unsafe procedures, an infant is at high risk for food-borne illness. Because formula mixing errors can happen easily, caregivers should be asked at each clinic visit to state the name of the formula their infant is on, the calories/oz, the recipe they are using, and how they are preparing the formula. Checklists for preparing infant formula safely are available at this link: http://www.dhhs.nh.gov/dphs/nhp/wic/documents/formula.pdf.

The Special Supplemental Food Program for Women, Infants, and Children (WIC) most often provides families with powdered infant formula. In both Rhode Island and Massachusetts, the WIC Program currently has contracts to provide families with Similac or Isomil formula. Other formulas, including NeoSure or EnfaCare, are readily available through the WIC Program but will require that the physician or nurse practitioner complete a prescription formula form stating the name of the formula and the reason for its use.

The WIC Program is a supplemental food and nutrition education program to assure adequate access to food for families and to link them with health care providers. Women as well as infants and children less than 5 years old who have an income below 185% of the poverty level and are at nutritional risk are eligible for WIC. Information about the WIC Program and SNAP (formerly the Food Stamp Program) and other federally funded programs may be found at www.fns.usda.gov or at state websites for these programs.

Children over one year of age who are failure-to-thrive may need a supplemental pediatric formula such as PediaSure or Kindercal (30 kcal/oz ready-to-feed). Both are available through the WIC Program. A less expensive alternative is Carnation Instant Breakfast mixed with whole milk, providing 30 kcal/oz. Adding corn oil to these products to increase calories even further is generally not recommended. Children receiving these products may need to be followed closely by their pediatricians. A nutritionist can help families use these products in a way that incorporates them into age-appropriate and developmentally-appropriate feeding patterns while medical issues resolve.

Two components of children's diets that may not be readily apparent during a visit to the pediatrician are caffeine and natural health products. Beverages provide the largest amounts of caffeine in children's diet. Natural health products are a part of complementary and alternative medicines and include herbs and vitamins supplements. To understand when caffeine and natural health products are used with children and how much is used is important for the clinician to know. Both carry risks, and benefits are often not evidence based.

Using data from the 1999 to 2010 National Health and Nutrition Examination Survey (NHANES), researchers found that 63% of 2 to 5 year olds and about 75% of 6 to 18 year olds consumed caffeine on any given day. Mean caffeine intake increased with age among those who consumed caffeine from 15.9 ± 1.2 mg/d for 2 to 5 year olds and 31.8 ± 1.6 mg/d for 6 to 11 year olds to 109.9 ± 7.1 mg/d for 16 to 18 year olds. The items contributing the most caffeine were soda and tea for 2 to 11 year olds and soda, tea, and coffee for the 16 to 18 year olds. The prevalence of caffeine use and the mean caffeine intake varied by year but did not appear to increase over time. These data may help clinicians as they guide families regarding wise beverage choices for children and consider interactions between caffeine and medications (Branum AM, LM Rossen, and KC Schoendorf. Trends in caffeine intake among US children and adolescents. Pediatrics. 2014;133:386-393).

Natural health products include: vitamins, minerals, herbal remedies, folk remedies, homeopathic medicines, traditional Chinese medicines, probiotics, amino acids, and fish oils To determine the prevalence of natural health products, researchers in Canada surveyed the parents of 333 children (5.1 ± 3.3 years old). Almost half (45.5%) of parents stated that their children used one or more natural health product: for example, vitamins, chamomile tea, green tea, Echinacea, fish or omega 3 oils, and other substances. Parents reported using these products to improve health and immunity and to prevent colds and infections. More than half (51.7%) reported that their children benefited from these products, while 4.4% reported adverse side effects. Less than half (45%) told physicians about using natural health products. (Godwin M, J Crellin, M Mathews, NL Chowdhury, LA Newhook, A Pike, F McCrate, and R Law. Use of natural health products in children: Survey of parents in waiting rooms. Canadian Family Physician. 2013;59:364-371).

Data from the Infant Feeding Practices Study II revealed that between 2005-2007, 9% of US infants received botanical teas or supplements during the first year of life. Dietary botanical supplements were most often given for reduce fussiness, aid digestion, decrease colic, and promote relaxation. Many products were marketed for infants and were only used for a short time. (Zhang Y, EB Fein, and SB Fein. Feeding of dietary botanical supplements and teas to infants in the United States. Pediatrics. 2011;127:1060-1066.) In a review of 15 randomized clinical trials with 944 infants, researchers indicated that fennel extract, mixed herbal tea, and sugar solutions may benefit colicky infants.. However, the studies had major limitations, and results need to be replicated. (Perry R, K Hunt, and E Ernst. Nutritional supplements and other complementary medicines for infant tile colic: A systematic review. Pediatrics. 2011;127:720-733).

While little research exists about the benefits and risks of specific natural health products for infants, cautions exist. These products may have significant side effects and drug interactions. One source of reliable, evidence-based information about natural health products is the National Center for Complementary and Integrative Health (NCCIH), an agency within the National Institutes of Health. The web address is: https://nccih.nih.gov/. The site contains sections on herbs, clinical practice guidelines, and literature reviews as well as other information.

Health care providers are an important resource to reduce hunger and improve nutrition for families with inadequate access to food (*Preventive Medicine* 2012;55(3):219-222). Recently, a 2-item screening tool was developed to identify families of young children at risk for food insecurity (*Pediatrics* 2010;126:e26-e32). The screening tool was derived from the US Department of Agriculture 18-item Household Food Security Survey. A response of “True” or “Mostly True” to these questions: “Within the past 12 months we worried whether our food would run out before we

got money to buy more." And "Within the past 12 months the food we bought just didn't last and we didn't have money to get more." provided a good indication of food insecurity in households with young children. With this knowledge, health care providers can refer families to community resources to improve access to food.

For nutritional problems that require on-going support, infants and children may need to be referred to nutritionists in the community who are able to follow the patient more closely than is possible for the nutritionist in the Follow-Up Clinic. Nutritionists are available through outpatient pediatric clinics at Hasbro Children's Hospital/Rhode Island Hospital and through the Early Intervention programs in the Department of Public Health. Occupational therapists participate in each of these programs.

Breast Milk, Formulas & Feeding Additives Used in W&I Follow-Up Clinic

Human Milk	**The gold standard & the BEST substrate for all infants – premature and full term**
Transitional infant formula	**For premature infants to go home on** (NeoSure / EnfaCare) • Available as 22 kcal/oz ready-to-use in-house or as powder & ready-to-use outside the hospital • Provides 1.5-2 times the nutrients in plain Human Milk or full-term infant formula • Ideally, will continue on transitional infant formula after discharge until growth is caught up
Standard full-term infant formula	**For full-term infants;** nutrient composition is based on Human milk (Enfamil / Good Start / Similac / store brand) • 26 oz/day of 20 kcal/oz formula will meet the nutritional needs of healthy, full-term infants
Soy full-term infant formula	**For full-term infants;** nutrient composition is based on Human milk (Prosobee / Good Start Soy / Isomil / store brand) • Contains soy protein in place of cow's milk protein; lactose free • Available as 20 kcal/oz ready-to use and as formula powder • ***AAP recommends for:*** *1.* Galactosemia or hereditary lactase deficiency, *2.* documented lactose intolerance, *3.* vegetarian-based diet desired by parents • ***AAP does not recommend for:*** *1.* premature infants who weight <1800 g, *2.* atopic disease prevention, *3.* documented cow's milk protein-induced enteropathy
Elemental and semi-elemental full-term infant formula (hypoallergenic)	**For full-term infants with fat malabsorption or who may be sensitive to intact proteins** (Pregestimil / Alimentum / Nutramagen – for both problems) (Neocate / Elecare / Puramino – for sensitivity to intact proteins) • Protein is a casein hydrolysate. Carbohydrate and fat composition vary by product. • Available as 20 and 24 kcal/oz ready-to-use and/or as formula powder • ***AAP recommends for:*** ***1.*** milk or soy protein allergies or intolerance and *2.* fat malabsorption
Pediatric formulas (ready-to-use)	**For children over 1 year of age:** (e.g., Pediasure, Boost Kid Essentials, Nutren Jr, Peptamen Jr, Neocate One+, Carnation Instant Breakfast) • Nutrient and calorie dense for children who are unable to take sufficient nutrition through a traditional diet. • Full-strength may provide 1, 1.5, or 2 kcal/mil.
Vitamin–mineral supplements	**Poly-vi-sol with Fe:** 1 mL/d contains: 10 mg iron, 400 IU vit D, 1500 IU vit A, 5 IU vit E, 35 mg vit C, 0.5 mg, thiamine, 0.6 mg riboflavin, 8 mg niacin, and 0.4 mg vit B_6; does not contain vit B_{12} **ADEK with zinc:** contains fat-soluble vitamins in water-soluble form; contains no iron **Fer-in-sol:** 0.4 mL/d (10 mg elemental iron); contains iron only
Additives that may be used at home:	
Formula powder	Added to increase calories and nutrients. • Keeps nutrients in balance. • Powder may be used as a breast milk additive for preemies just prior to discharge and at home
Corn Oil	A long chain fat added to increase calories (usually when nutrients already adequate) – Readily available • Contains essential fatty acids and fat soluble vitamins • Absorption requires bile salts; transported via lymph system. Preemies may not absorb well. • Mixes poorly in Human Milk and formula; separates and adheres to feeding apparatus • 0.45 mL per 1 ounce of Human Milk or infant formula adds 3 calories (1 mL = 8.3 kcal)
MCT (Medium Chain Triglyceride) Oil	A medium chain fat added to increase calories when absorption is impaired – Costly to purchase • Contains no essential fatty acids • Absorption does not require bile salts; transported via the portal vein • Mixes poorly in HM and formula; separates and adheres to feeding apparatus • 0.45 mL per 1 ounce of Human Milk or infant formula adds 3 calories (1 mL = 7.6 kcal)
Microlipids	A long chain fat used for larger preemies & term babies to increase calories – Costly to purchase • Contains essential fatty acids and fat soluble vitamins • Absorption requires bile salts; transported via lymph system. Preemies may not absorb well. • An emulsified, long chain fat that stays in solution • 0.65 mL per 1 ounce of Human Milk or infant formula adds 3 calories (1 mL = 4.5 kcal)

June 2007
Revised, December 2013

BREASTFEEDING WHILE USING DRUGS GUIDELINE

PURPOSE: To provide evidence-based guidelines for the evaluation and management of breastfeeding for women who are taking prescribed, over-the-counter and/or illicit medications

GUIDELINE:

1. Most prescribed and over-the-counter medications are safe for the breast feeding infant. Some medications may make it necessary to interrupt breastfeeding (examples: radioactive isotopes, antimetabolites, cancer chemotherapy, some psychotropic medications, and a small number of other medications).
2. Substance exposed newborn (SEN): In situations where the mother is maintained on opioid replacement therapy (methadone or buprenorphine), if there are no contraindications, breast feeding is encouraged. Breastfeeding in these substance-exposed newborns (SEN) can improve mother-infant bonding, reinforce maternal abstinence from illicit drugs, and delay the onset of, and reduce the need for pharmacotherapy for neonatal abstinence.
    a. As with all breastfeeding dyads, the mother should be encouraged to nurse in the delivery room within one hour of birth
    b. Communication between obstetrics and pediatrics with regard to intention to breast feed will allow for consistency of care
    c. All other aspects of care for the SEN (toxicology screening, social services consult etc) will be provided per protocol. (Refer to NAS guideline)
3. The transfer of methadone to human milk is minimal. Buprenorphine has poor bioavailability, is unlikely to have a negative effect on the infant, and as such is compatible with nursing. Both medications are considered L2 and nursing is encouraged regardless of medication dose. The following considerations may assist the provider in counseling the mother to breast feed while on opioid replacement therapy:
    a. Stable methadone or buprenorphine maintained mother
        And
    b. Negative maternal urine toxicology testing for the last 12 weeks before birth and at delivery except for above prescribed medications
        And
    c. Received consistent prenatal care
        And
    d. Compliant in treatment for a minimum of 12 weeks
        And
    e. There are no other illicit medications used or prescribed medications (eg:psychotropics) that would preclude breast feeding.
        And
    f. There are no medical contraindications to nursing (eg: HIV)
    Not all of this information may be available at the time of birth. If there are no known contraindications, it is reasonable to encourage breastfeeding and explain to the

mother that confirmation of treatment compliance will be pursued. If concerns are identified, this may impact continued breastfeeding.

4. Mothers currently using illicit medications (e.g. cocaine, heroin) should not be encouraged to breastfeed.
5. Although evidence is less clear, mothers currently using cannabis should be educated regarding the risks of continued use with breastfeeding, encouraged to abstain from using any cannabis products while breastfeeding.
    a. Legality of Cannabis does not equate to safety in pregnancy or during lactation, and in many regions is associated with legal risk.
    b. Exposure to cannabis through breast milk has no known benefit to the newborn, but may present risk
    c. Cannabis has quadrupled in potency since 1995, its metabolite,THC, has a long half-life (67 days), and can be detected in a urine toxic screen for up to one month in adults
    d. THC is fat soluble and accumulates in the breast milk
    e. The AAP, ACOG and Hale's *Medications in Mother's Milk* , ABM and the Surgeon General* all discourage cannabis use with lactation. Many women who choose to use cannabis with breastfeeding have also used during pregnancy making conclusions about outcome risks from lactation alone difficult.
    f. ABM guidelines (2015) recommend use of caution and evaluation of risks and benefits when discussing breastfeeding with cannabis exposure.
    g. Short-term effects may include infant sedation, poor suck and feeding patterns decreased tone, and sleep disturbances
    h. Exposure in the first month post-partum may be associated with decreased motor development at one year and aggression and attention problems in toddlers
    i. Second hand cannabis exposure has been associated with SIDS
    j. Maternal exposure can alter perception and ability to react to changes in the environment
6. Specific to Cannabis: If after receiving education that has been documented in the medical record, a parent who is using cannabis products chooses to breastfeed a baby, the parent's choice will be respected and the parent will be provided with the same services afforded to all breastfeeding parents.
7. Other circumstances where breastfeeding should be discouraged include:
    a. Women who relapsed to illicit drug use or drug misuse during the 30-days prior to the delivery period
    b. Women who are not in a treatment program or who are not willing to provide consent for contact with treatment providers
8. Women under the following circumstances **should be evaluated individually** and a breastfeeding recommendation for suitability or lack thereof be determined by coordinated care plans with the parents, medical team and substance abuse treatment providers. There are currently no evidence based recommendations for patients that fall into these categories. If breastfeeding is considered, potential options may include pumping and discarding milk until toxic screens are negative, or pumping and discarding milk at the peak level of a prescribed drug.

a. Women who did not receive prenatal care
b. Women who relapsed between 1-3 months prior to delivery, but who have maintained sobriety within 1 month of delivery
c. Women prescribed multiple psychotropic medications Women chronically taking prescribed licit opioid medication (not replacement therapy such as buprenorphine or methadone)
d. Women who engaged in prenatal care and/or substance abuse treatment during or after the 2nd trimester
e. Women who demonstrate behavioral qualities or other indicators of active drug use. These situations should be addressed in a timely fashion.

9. When it is has been determined by the infant's healthcare provider that breastfeeding is contraindicated, the following will NOT occur:
   a. Provision of lactation service (unless guidance is needed to effect the cessation of lactation)
   b. Provision of breast pump
10. The following are accepted references to evaluate whether certain medications are safe during breast feeding.
    a. Drug and lactation database of the US National Library of Medicine, TOXNET: Toxicology Data Network (LactMed) (free app available)
    b. Medications and Mothers' Milk by Thomas Hale
    c. Breastfeeding: A Guide for the Medical Profession by R.A. Lawrence and R.M. Lawrence
    d. Drugs in Pregnancy and Lactation by G.G. Briggs, R.K. Freeman and S.J. Yaffe (free app available for I phone)
    e. American Academy of Pediatrics Statement on the Transfer of Drugs into Human Milk (2018)
    f. The Academy of Breast Feeding Medicine (ABM) (statement, 2015)

References

AAP Policy Statement: Breastfeeding and the use of Human Milk. *Pediatrics*, 2012;129(3)
ABM Clinical Protocol #21 Guidelines for Breastfeeding and Substance Use or Substance Use Disorder, Revised 2015. Breastfeeding Medicine, 2015 10(3); 135-141.
ACOG Committee Opinion: Opioid Abuse, Dependence, and Addiction in Pregnancy, 2012, Number 524.
ACOG Committee Opinion: Marijuana Use During Pregnancy and Lactation, 2017, Number 722.
Pritham UA, Breastfeeding promotion for Management of Neonatal Abstinence Syndrome, *JOGNN*, 2013;42:517-26.
Garry A, et al. Review: Cannabis and Breastfeeding*. J Toxicology*, 2009.
Abdel-Latif, ME et al. Effects of Breast Milk on the Severity and Outcome of Neonatal Abstinence Syndrome Among Infants of Drug-Dependent Mothers*. Pediatrics*, 117(6), June, 2006.
Jansson LM et al. Methadone Maintenance and Breastfeeding in the Neonatal Period*. Pediatrics* 121(1), January, 2008.
Astley SJ et al. Maternal Marijuana Use During Lactation and Infant Development at One year. *Neurotoxicology and Teratology*, 12(2):161-8, 1990.

Jaques SC, et al. Cannabis, the pregnant woman and her child: weeding out the myths. *J Perinatol.* (2014) 34, 417-424.
D'Apolito, K. Breastfeeding and Substance Abuse. *Clin Obstet and Gynecol*. (2013) 56(1); 202-211.
Anderson PO. Cannabis and Breastfeeding. *Breastfeeding Medicine* (2017) 12(10) ; 580-581.
Mourh J, Rowe H. Marijuana and Breastfeeding: Applicability of the Current Literature to Clinical Practice. *Breastfeeding Medicine*, (2017) 12(10); 582-597.
Klonoff-Cohen et al Maternal and Paternal Recreational Drug Use and Sudden Infant Death Syndrome. *Arch Pediatr Adol Med* (2001) 155(7):765-70.
Surgeon General: Marijuana unsafe during adolescence, pregnancy. AAP News Aug 29, 2019.

***ACADEMY STATEMENTS REGARDING CANNABIS USE DURING PREGNANCY AND LACTATION**

ACOG: Obstetrician–gynecologists should be discouraged from prescribing or suggesting the use of marijuana for medicinal purposes during preconception, pregnancy, and lactation
There are insufficient data to evaluate the effects of marijuana use on infants during lactation and breastfeeding, and in the absence of such data, marijuana use is discouraged

AAP: Maternal marijuana use during breastfeeding is discouraged. Because the potential risks of infant exposure to marijuana metabolites are unknown, women should be informed of the potential risk of exposure during lactation and encouraged to abstain from using any marijuana products while breastfeeding

ABM: A recommendation of abstaining from any marijuana use is warranted. At this time, although the data are not strong enough to recommend not breastfeeding with any marijuana use, we urge caution
Child welfare investigations may occur for women with positive marijuana screens

Surgeon General I, Surgeon General VADM Jerome Adams, am emphasizing the importance of protecting our Nation from the health risks of marijuana use in adolescence and during pregnancy. Recent increases in access to marijuana and in its potency, along with misperceptions of safety of marijuana endanger our most precious resource, our nation's youth.

Draft 8/14
Rev 4/18
Rev 6/19
Rev 9/21

Breast Milk and Infant Formula Recipes Commonly Used in W&I Follow-Up Clinic

FOR FORMER PREMATURE INFANTS

- Human Milk
  - 20 kcal/oz = Human Milk, plain
  - 22 kcal/oz = ½ tsp Transitional formula powder + 3 oz (90 mL) Human Milk
  - 24 kcal/oz = ½ tsp Transitional formula powder + 1.5 oz (45 mL) Human Milk
  - 27 kcal/oz = 1 tsp Transitional formula powder + 2 oz (60 mL) Human Milk
  - 30 kcal/oz = 1½ tsp Transitional formula powder + 2 oz (60 mL) Human Milk
- Transitional Infant Formula (EnfaCare and NeoSure)
  - 20 kcal/oz = 2 scoops Transitional formula powder + 4.5 oz water ➔ 5 fluid ounces
  - 22 kcal/oz = 2 scoops Transitional formula powder + 4 oz water ➔ 4 fluid ounces
  - 24 kcal/oz = 3 scoops Transitional formula powder + 5.5 oz water ➔ 6.5 fluid ounces
  - 27 kcal/oz = 5 scoops Transitional formula powder + 8 oz water ➔ 9 fluid ounces
  - 30 kcal/oz = 3 scoops Transitional formula powder + 4 oz water ➔ 4.5 ounces

---

FOR FULL-TERM INFANTS

- Human Milk
  - 20 kcal/oz = Human Milk, plain
  - 22 kcal/oz = ½ tsp Transitional formula powder + 3 oz (90 mL) Human Milk
  - 24 kcal/oz = ½ tsp Transitional formula powder + 1.5 oz (45 mL) Human Milk
  - 27 kcal/oz = 1 tsp Transitional formula powder + 2 oz (60 mL) Human Milk
  - 30 kcal/oz = 1½ tsp Transitional formula powder + 2 oz (60 mL) Human Milk
- Full-Term Infant Formula (Enfamil, Good Start, Similac; Good Start Soy, Isomil, Prosobee; Alimentum, Nutramagen, and Pregestimil; Similac PM 60/40)
  - 20 kcal/oz = 2 scoops Full-Term formula powder + 4 oz water ➔ 4 fluid ounces
  - 22 kcal/oz = 2 scoops Full-Term formula powder + 3.5 oz water ➔ 4 fluid ounces
  - 24 kcal/oz = 3 scoops Full-Term formula powder + 5 oz water ➔ 6 fluid ounces
  - 27 kcal/oz = 3 scoops Full-Term formula powder + 4.25 oz water ➔ 5 fluid ounces

---

NOTES

1. At each visit to the Follow-Up Clinic, ask the caregiver to state the formula recipe that she/he is using and the steps followed to prepare the feedings. If you have questions, please speak with the nutritionist.
2. Mixing brands of infant formula is sometimes necessary. It is OK to mix brands of transitional formulas (Enfacare/Neosure) OR brands of full-term cow's milk-based formulas (Enfamil/Similac/Good Start/store brand) OR brands of full-term soy milk-based formulas (Prosobee/Isomil/Good Start Soy/store brand). In addition, we sometimes add transitional formula powder to different brands of full-term cow's milk-based formula. This is also safe. Please reassure parents if they have questions. If you have questions, don't hesitate to speak with the nutritionist.
3. The current WIC contract formulas are Enfamil and Prosobee. Most other infant formulas are available through the WIC Program with a physician's prescription.

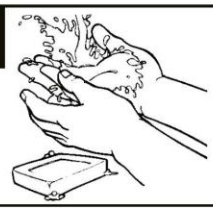
ABBREVIATION

- **tsp = measuring teaspoon (level, <u>not</u> rounded or heaping)**

June 2007

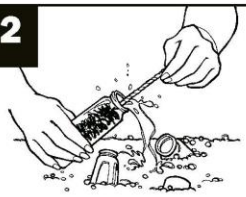
Figure 6a:
Preparation Checklist for Standard Ready-to-Feed Iron-Fortified Infant Formula (using glass or hard plastic bottles)

1



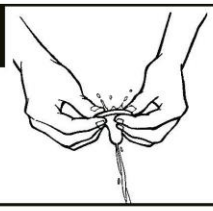
Wash your hands, arms, and under your nails, very well with soap and warm water. Rinse thoroughly. Clean and sanitize your workspace.

2



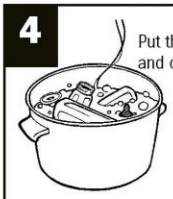
Wash bottles and nipples, using bottle and nipple brushes, and caps, rings, and preparation utensils in hot soapy water before using. Rinse thoroughly.

3



Squeeze clean water through nipple holes to be sure they are open.

4



Put the bottles, nipples, caps, and rings in a pot and cover with water. Put the pot over heat, bring to a boil, and boil for 5 minutes. Remove with sanitized tongs, allow the items to cool, and air dry.

5

Wash the top of the can with soap and water and rinse well to remove dirt. Wash the can opener with soap and hot water.

6

SHAKE CAN WELL and then open the can.

7

Pour the amount of ready-to-feed formula for one feeding into a clean bottle. Do not add water or any other liquid.

8

Attach nipple and cap and SHAKE WELL. Feed prepared formula immediately.

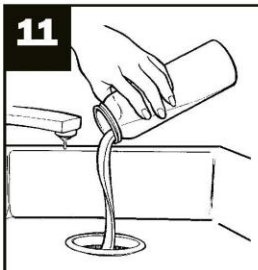
9

If more than one bottle is prepared, put a clean nipple right side up on each bottle and cover with a nipple cap. Label each bottle with the baby's name and the date and time that it was prepared.

10

Refrigerate until feeding time. Use within 48 hours. Do not leave formula at room temperature. To warm bottle, hold under running warm water. **Do not microwave bottles**. If formula is left in the can, cover and refrigerate open can until needed. Use within 48 hours.

11



Throw out unused formula left in bottle after feeding or which has been unrefrigerated for 1 hour or more. Store unopened cans in a cool, dry indoor pantry shelf. Use before the expiration date.

USDA FNS Preparation Checklist for Standard Ready to Feed, Liquid Concentrate and Powdered Infant Formula, page 1 of 3

Figure 6c:
Preparation Checklist for Standard Powdered Iron-Fortified Infant Formula (using glass or hard plastic bottles)

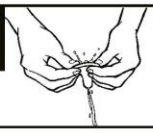
1

Wash your hands, arms, and under your nails, very well with soap and warm water. Rinse thoroughly. Clean and sanitize your workspace.

2

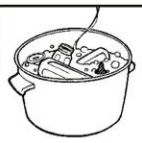
Wash bottles and nipples, using bottle and nipple brushes, and caps, rings, and preparation utensils in hot soapy water before using. Rinse thoroughly.

3



Squeeze clean water through nipple holes to be sure they are open.

4



Put the bottles, nipples, caps, and rings in a pot and cover with water. Put the pot over heat, bring to a boil, and boil for 5 minutes. Remove with sanitized tongs, allow the items to cool, and air dry.

5

For formula, bring water to a very bubbly boil. Keep it boiling for a minute or two, then let it cool. Use this water to mix the formula. Use water from a source approved by the local health department. If tap water is used for boiling, collect only cold tap water allowed to run for 2 minutes first.

6

Remove plastic lid; wash lid with soap and clean water and dry it. Write date on outside of plastic lid. Wash the top of the can with soap and water, rinse well, and dry. Wash the can opener with soap and hot water. Open the can and remove scoop. Make sure that the scoop is totally dry before scooping out powdered formula. Only use the scoop that comes with the formula can.

7

For each 2 ounces of cooled boiled water added to a clean bottle, carefully add 1 level scoop of powdered formula. Thus, if 8 ounces of water is poured into the bottle, 4 level scoops of formula should be added.

8

Attach nipple and ring to the bottle and SHAKE WELL. Feed prepared formula immediately.

9

If more than one bottle is prepared, put a clean nipple right side up on each bottle and cover with a nipple cap. Label each bottle with the baby's name and the date and time that it was prepared.

10

Refrigerate until feeding time. Use within 24 hours. Do not leave formula at room temperature. To warm bottle, hold under running warm water. **Do not microwave bottles.**

11

Throw out unused formula left in bottle after feeding or which has been unrefrigerated for 1 hour or more.

12

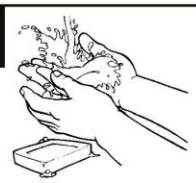
Make sure that no water or other liquid gets into the can of powder. Cover opened can tightly and store in a cool dry place (not in the refrigerator). Use within 4 weeks after opening to assure freshness.

13

To be used again, the scoop should be washed with soap and hot water, rinsed thoroughly, and allowed to air dry. When making formula again, the scoop should be totally dry before using it to scoop powder out of the can. Store unopened cans in a cool, dry indoor pantry shelf. Use before the expiration date.

Figure 6b:
Preparation Checklist for Standard Liquid Concentrated Iron-Fortified Infant Formula (using glass or hard plastic bottles)

1

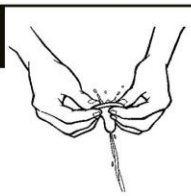


Wash your hands, arms, and under your nails, very well with soap and warm water. Rinse thoroughly. Clean and sanitize your workspace.

2

Wash bottles and nipples, using bottle and nipple brushes, and caps, rings, and preparation utensils in hot soapy water before using. Rinse thoroughly.

3



Squeeze clean water through nipple holes to be sure they are open.

4

Put the bottles, nipples, caps, and rings in a pot and cover with water. Put the pot over heat, bring to a boil, and boil for 5 minutes. Remove with sanitized tongs, allow the items to cool, and air dry.

5

For formula, bring water to a very bubbly boil. Keep boiling it for a minute or two, then let it cool. Use this water to mix the formula. Use water from a source approved by the local health department. If tap water is used for boiling, collect only cold tap water allowed to run for 2 minutes first.

BOIL COOL

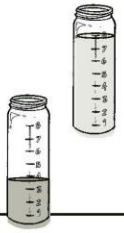
6

Wash the top of the can with soap and water and rinse well to remove dirt. Wash the can opener with soap and hot water.

7

SHAKE CAN WELL and then open the can.

8



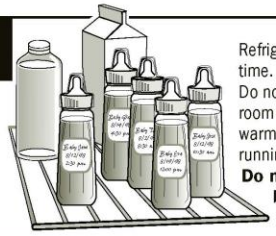
Pour needed amount of formula into a clean bottle using ounce markings to measure formula and add an equal amount of cooled boiled water. Thus, if 4 oz. of formula is poured into the bottle, 4 ounces of water should also be added.

9

Attach nipple and ring to the bottle and SHAKE WELL. Feed prepared formula immediately. If formula is left in the can, cover and refrigerate can until needed. Use within 48 hours.

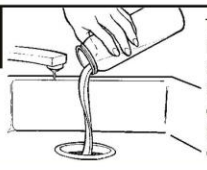
10

If more than one bottle is prepared, put a clean nipple right side up on each bottle and cover with a nipple cap. Label each bottle with the baby's name and the date and time that it was prepared.



Refrigerate until feeding time. Use within 48 hours. Do not leave formula at room temperature. To warm bottle, hold under running warm water. **Do not microwave bottles.**

12



Throw out unused formula left in bottle after feeding or which has been unrefrigerated for 1 hour or more. Store unopened cans in a cool, dry indoor pantry shelf. Use before the expiration date.

Gastrostomy

What is a Gastrostomy?

A Gastrostomy is a feeding tube placed through the skin and stomach wall directly into the stomach. If an infant cannot obtain enough nutrition by mouth, a Gastrostomy can be placed to help the infant gain the nutrition he/she needs to grow and be healthy.

Who needs a Gastrostomy?

- infants with birth defects of the mouth, esophagus, or stomach
- infants that have problems with sucking and swallowing, or who aspirate food while feeding
- infants that are on a ventilator for a long time
- infants that need supplemental feedings to gain weight

Placement of the Tube

The rubber tube is placed through a hole made in your baby's stomach by the surgeon. The tube is sewn in place until the opening heals. Feedings are usually started slowly using the tube, 2-3 days after surgery. The original tube may be replaced with a Mic-key button 2-4 weeks after surgery, or at the time of the surgery.

Caring for the Skin around the Tube

The dressing should be changed every day or sooner if the dressing is soiled, smells badly, drainage is seen, or redness/swelling occurs. This is the best time to evaluate the condition of the skin around the tube. Once the area has healed, the dressing may only need to be changed twice per week. Dressing changes should always be done before feedings or no sooner than one hour after feedings to decrease the risk of upsetting stomach contents.

Cleaning the Site and Applying a Dressing

1. Gather supplies.
2. Wash your hands!
3. Remove the old dressing
4. Wash the skin with a clean cloth around the tube with mild soap and water starting closest to the tube and moving outward, pat dry.
5. Check skin for redness and bleeding. Watch for build-up of red or pink skin around the opening.
6. Your physician and nurse will show you the proper dressing and method to use for your child.

7. Anchor the tube to prevent it from being pulled out by the baby or by accident.

Administering Medications

Your physician will tell you which medications can be given through the G-tube. Ideally medications should be timed to be given with a feeding.

1. Gather supplies.
2. Wash your hands.
3. Mix the medication with 5 mL of breast milk or formula from the feeding in a sterile container and draw up mixture into a 10 ml syringe.
4. Gently push milk and medication mixture through the Gastrostomy tube.
5. After the medication is administered, connect feeding.
6. If a medication is scheduled before or after a feeding is due mix the medication with 5 mL of breast milk or formula, gently push medication through tube and then flush the tube with 5mL of sterile water.

Feeding Using a Feeding Pump

Please refer to the teaching tool for using the feeding pump.

Flushing the Tube

Flush the Gastrostomy tube after feedings and medications.

1. Using a 5 mL syringe, draw up 5mL of water.
2. Connect the syringe to end of the feeding tube and gently push the water through the tube to clear it of formula or medications.
3. If the tube becomes blocked or clogged and the water will not flush through the tube, try flushing the tube with warm water and or pulling back on the syringe. Gently repeat the pushing and pulling on the syringe until the blockage is removed.

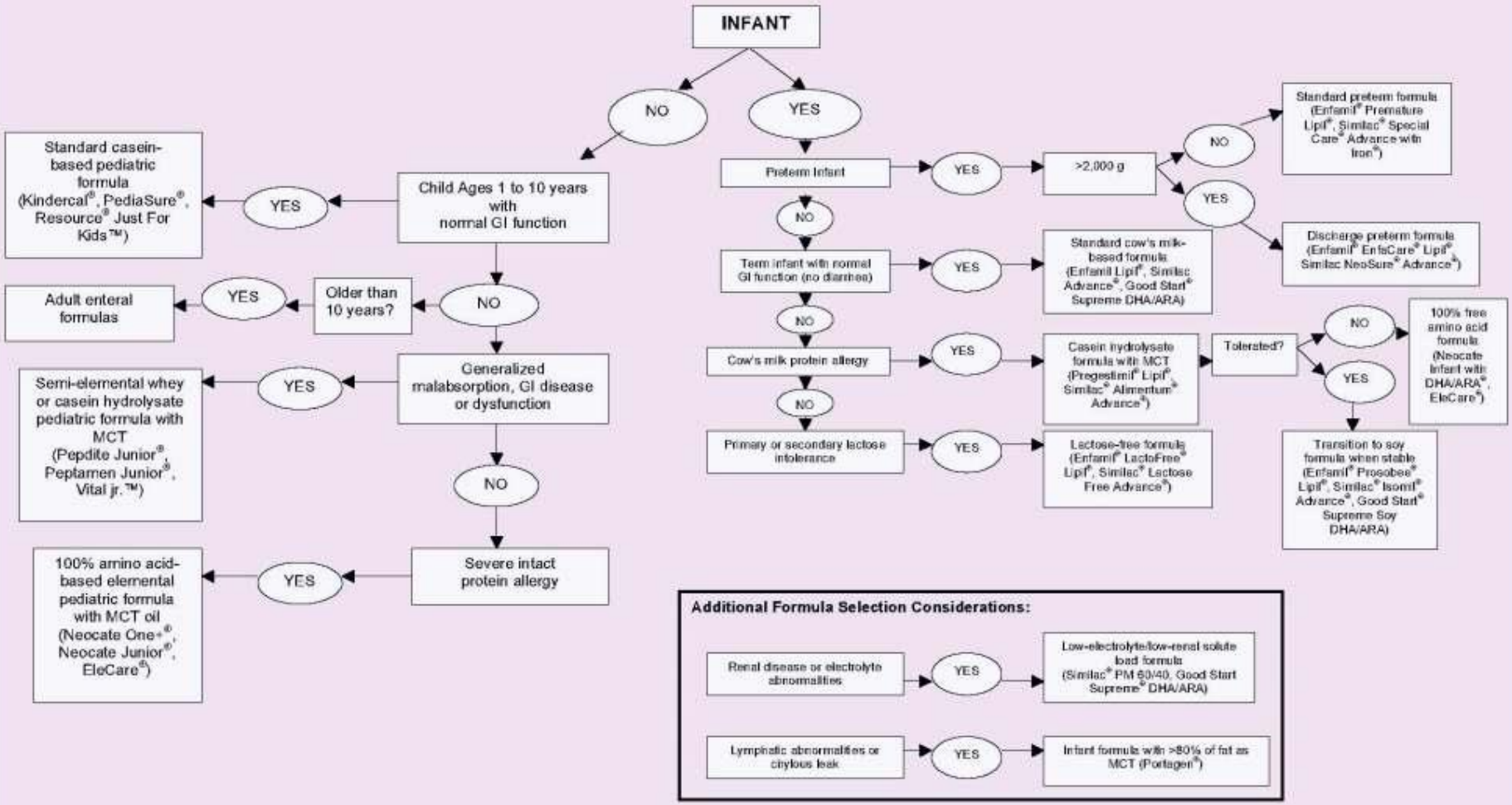
If the tube comes out -

If your child's Gastrostomy tube comes out, do not panic. Call the pediatrician as soon as possible. The stoma will not close immediately, but can close within 3 hours. (Are parents instructed on replacing the tube?)

My baby's surgeon is _____.

My surgeon's phone number is _____.

Figure. Algorithm for selection of infant and pediatric formulas.



GI=gastrointestinal, MCT=medium-chain triglycerides.

EleCare®, PediaSure®, Similac Advance®, Similac® Alimentum® Advance®, Similac® Isomil® Advance®, Similac® Lactose Free Advance®, Similac NeoSure® Advance®, Similac® Special Care® Advance with Iron®, Vital jr.™ (Ross Products Division, Abbott Laboratories Inc., Columbus, Ohio)

Enfamil® EnfaCare® Lipil®, Enfamil® LactoFree® Lipil®, Enfamil Lipil®, Enfamil® Premature Lipil®, Enfamil® Prosobee® Lipil®, Kindercal®, Pregestimil® Lipil® (Mead Johnson Nutritionals, Evansville, Ind.)

Good Start® Supreme DHA/ARA, Good Start® Supreme Soy DHA/ARA, Peptamen Junior® (Nestlé Nutrition, Glendale, Calif.)

Neocate Infant® with DHA/ARA, Neocate Junior®, Neocate One+®, Pepdite Junior® (Nutricia North America, Gaithersburg, Md.)

Resource® Just For Kids™ (Novartis Medical Nutrition U.S., Fremont, Mich.)

The WIC Program

WIC is a federally funded program that provides nutritious foods to supplement diets, information on healthy eating, and referrals to health care. These services are available to low-income pregnant, postpartum and breastfeeding women, to infants, and to children up to the age of five years old who are at nutritional risk. A family's income must be <185% of the poverty level to meet the income guidelines for WIC.

The following are clinic procedures for referring families to the WIC Program:

1. Complete the WIC referral form and, as needed, the formula prescription form. Family members will then take these forms to the nearest WIC office to set up an appointment to apply for WIC. WIC forms are located in a hanging file on the back counter in the clinic work area.

2. Background information:
   a. WIC staff follows federal guidelines to determine nutritional risk status and income eligibility of individuals who apply. WIC is not an entitlement program. Congress votes on its budget annually. For that reason, funds may be limited so that not all who we believe are eligible are enrolled in the program.

   b. Generally, WIC staff determines income eligibility first and then determine nutritional risk status. Premature infants and infants/children who are failure-to-thrive will likely meet the nutrition risk criteria. An infant or child who is underweight or overweight may meet the nutrition risk criteria. Once enrolled in WIC, a person receives vouchers/checks to purchase approved foods/food package. The WIC participant is recertified every 6 months. Nutrition education and referral for health care are vital parts of the program.

   c. WIC supports breastfeeding, but for infants who are not breastfed, WIC provides infant formula. Currently, Enfamil has the contract for full-term cow's milk and soy formulas in our area. Other infant formulas such as transitional (e.g., EnfaCare, NeoSure), or protein hydrolysate (e.g., Alimentum, Neocate, Nutramagen, Pregestimil) are available with a WIC formula prescription form. Children may also receive pediatric formulas (e.g., Kindercal, Nutren Jr., Pediasure) from WIC. For children, pregnant women, and women who are breastfeeding their infants, WIC provides foods rich in key nutrients that these groups need.

   d. WIC foods supplement the diet. For example, WIC provides approximately 26 oz/d of 20 kcal/oz full-term infant formula, most often as powder. WIC issues a quantity of formula based on usage at 20 calorie/oz for term formula and 22 calorie/ounce for transitional formula. Quantities may be insufficient for babies receiving formulas mixed to a higher concentration such as 24 kcal/oz or 27 kcal/oz.

   e. At 1 year chronological age if the infant will need a transitional, pediatric, or specialty formula, please complete a new WIC formula prescription form and give to the parent.

3. Current Rhode Island, Massachusetts, and Connecticut WIC applications, special formula forms, lists of WIC approved foods, and local WIC offices are available on the state WIC Program websites:
   a. RI WIC: www.health.ri.gov/wic
   b. MA WIC: www.mass.gov/eohhs/consumer/basic-needs/food/wic
   c. CT WIC: www.ct.gov/dph/wic

Rhode Island Department of Health
WIC Program
Medical Information Form for Infants & Children

Note to Health Care Provider:

Please print out this form, complete it and give it back to your patient to return to WIC.

A. Patient Information	
Patient Name:	Date of Birth:
Parent/Guardian Name:	

B. All Infants/Children	Infants/Children < Age 2
Date Obtained:	Birth Weight:
Weight:	Birth Length:
Length/Height:	Gestational age at birth: _____weeks
# DtaP Immunizations Given to Date:	

C. Laboratory Results
Date Collected:
*Hgb:
*Hct:
Blood Lead:
*Required between 9-12 months and 12-24 months then once yearly (unless value < 11.1 Hgb or < 33% Hct, then required in 6 months).

D. Health/Medical Concerns (including ICD-9 code (s))

E. Patient's Health Care Provider	
Provider Name:	
Signature:	Date:
Address:	Phone:

WIC-2B 10/09

Rhode Island Department of Health
Medical Documentation for WIC Formula and Approved WIC Foods
Infants & Children

Completion of this form is federally required to ensure that the patient under your care has a medical condition/diagnosis that requires the use of medical formula/food and/or changes to their supplemental food package.

A. Patient Information (Complete All)	
Patients Name:	**DOB:**
Parent/Guardian Name:	
Medical Diagnosis/Qualifying Condition(s):	
*** Please Note: The following non specific symptoms are not considered acceptable medical diagnosis: Constipation, Spitting Up, Colic, Crying, Gas, Fussiness, Intolerance, or Difficulty Feeding. Any request containing these diagnosis will NOT be accepted for special formula exemptions.	

B. Medical Formula / Medical Food
Name of medical formula/medical food:
Prescribed amount: _____oz per day
Requested length of issuance: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Months

C. Supplemental Foods		
**In addition, supplemental foods will be issued for participants over 6 months of age, unless contraindicated. Please review and select the issuance appropriate for your patient:		
WIC foods allowed – *Infants 6-12 months* (Please select all that apply)		
☐ **Baby food fruits & vegetables**		
☐ **Infant cereal**		
☐ **Infant unable to take other foods at this time**		
WIC foods allowed – *Children* (Please select all that apply)		
☐ **Juice**	☐ **Peanut Butter**	☐ **Fruits & Vegetables**
☐ **Eggs**	☐ **Cereal**	☐ **Cheese**
☐ **Legumes**	☐ **Whole grain bread/other whole grains**	☐ **Milk****
** ☐ **Issue whole milk**: WIC provides 1% low fat milk for all children ☐ 2 years. Only participants who need additional calories may receive whole milk.		

D. Health Care Provider Information (Complete all)		
Provider's Name (please print):		
Signature of health care provider:		
Medical office/clinic:		
Phone:	**Fax#:**	**Date:**

WIC-23A 07/11

Rhode Island Department of Health
WIC Program
Medical Information Form for Breastfeeding/Postpartum Women

Note to Health Care Provider:

Please print out this form, complete it and give it back to your patient to return to WIC.

A. Patient Information	
Name:	
Date of Birth:	
Delivery Date:_____	C-Section: Yes___ No___

B. Delivery Information	
Height:	Date Collected:
Pregravid Weight (PGW):	*Hgb:
Weight at Delivery:	*Hct:
	*Must be collected after delivery

C. Most Recent Pregnancy Outcome	
Preterm Delivery: Yes___ No___	If yes, weeks gestation:
☐ LBW	☐ Fetal/Neonatal loss
Multiple Births: Yes___ No___	

D. Health/Medical Concerns (including ICD-9 code (s))

E. Patient's Health Care Provider	
Provider Name:	
Signature:	Date:
Address:	Phone:

WIC-2 9/ 09

Normal and Abnormal Motor Development

The follow-up evaluation of high risk infants, includes cognitive, language motor development, sensory function and behavior. Careful and timely observation and examination of these functional domains is particularly important for infants and children at risk based on established medical conditions, prematurely, perinatal or postnatal events that might compromise establishing skills in any or all of these developmental domains. Assessment in these areas is not exclusive as there is substantial crossover. Testing is useful on several levels. First, it provides a picture in time of development status of the child while also identifying any problems in the child's developmental trajectory. Testing also provides information on abnormalities with varying degrees of prognostic strength. With the identification of normal and abnormal age-related developmental skills appropriate interventions and referrals can be recommended to address developmental needs.

Cognitive and language assessments are made with standardized screeners in infancy and standardized assessments administered by psychologists from 1-5 years.

The neuromotor evaluation including motor developmental assessment, begins at birth and uses validated models of testing to document the status of neuromotor skill and function. Motor development is generally divided into two broad areas: gross motor related to stability and function of upper and lower extremity large muscle and fine motor skills relate to hand movement.

Motor milestones are assessed based on age related gross and fine motor skills. For the purposes of the follow-up, premature infants and infants at developmental risk for other reasons will be evaluated in the newborn period and at the 1, 3, 7, 12, 24, 36 months and five year ages to correspond with follow-up scheduled. In addition the activity level, quality of movement, muscle tone and strength deep tendon reflexes and primitive reflexes are included in the assessment.

The neuromotor examination begins with an observation of baby at rest or the child involved in normal activity. Notice should be taken of any abnormal posturing, movement or behavior. Observation and general assessment should be made of spontaneous movements, including their quality and symmetry. An initial estimation of strength, tone and overall motor function should be made.

Examination of cranial nerve function should include the sensory assessment of auditory responses to voice or bell, and visual fixation and tracking. Extraocular movements should be observed along with facial movements and suck, oral motor activity and swallow. Positioning of the head and neck movements for possible torticollis should be evaluated.

When checking the deep tendon reflexes, the limbs should be in a relaxed and in a *symmetric* position, since this can influence reflex amplitude. It is important to compare each reflex compared to the opposite limb. Deep tendon reflexes are often rated according to the following scale: 0 - absent reflex; 1^+ - trace, or seen only with reinforcement; 2^+ - normal; 3^+ - brisk; 4^+ - unsustained clonus; 5^+ - sustained clonus

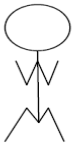
Deep tendon reflexes are normal if they are 1^+, 2^+, or 3^+ unless they are asymmetric or there is a dramatic difference between the arms and the legs. Reflexes rated as 0, 4^+, or 5^+ are usually considered abnormal. Ankle, patellar and bicep reflexes should be tested on all babies and children. Decreased reflexes may occur in babies with significant CNS damage, those with brain abnormalities, chromosomal disorders such as Down syndrome, spinal muscular atrophy, lower motor neuron, muscle diseases and lower motor, metabolic and endocrine disorders. These should be kept in mind during diagnostic assessment of these findings. Hyperreflexia,

clonus and increased reflex response can be found in disorders such as cerebral palsy or other neurologic or biochemical disorders that lead to increased CNS irritability.

Assessment of both active and passive muscle tone should be done on all infants beginning with observation and then with specific testing of the tone. Decreased tone is found in a number of conditions including Down syndrome, chromosome anomalies, some metabolic disorders, endocrine, muscle and neurologic disorders.

Resting Tone Term Newborn

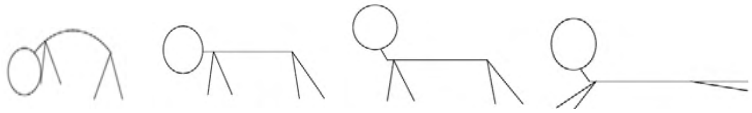
(1)



Term newborn infants should demonstrate good tone in flexed position. This, however, should resolve over the first few months of extra uterine life and show a more relaxed posture. Inability to develop decreasing tone may indicate hypertonia due to CNS abnormality. Both hypotonia and hypertonia require further evaluation.

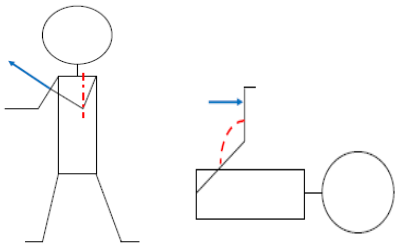
Ventral Suspension or Prone Position

Newborn 6 Weeks 3 months 6 months (1)



There is a typical progression of strength and head control over the first few months of postnatal life that should be monitored. Inability to establish head control may indicate either upper or lower motor neuron deficits that can be related to central nervous system injury or inherited neurologic disorders.

Extremity Tone (1)



Age	Scarf Sign	Popliteal Angle
1-2 month	midline	>80`
4-6 months	+/> midline	>90`
7-9 months	> midline	>110`
10-24 months	> midline	>110`

Passive tone is assessed by angles using scarf sign for upper extremities and hip abduction, heel-ear angle, popliteal angle and foot dorsiflexion to estimate lower extremity tone. The scarf sign and popliteal angel identify lateralized and bilateral tonal abnormalities. There are normal physiologic changes in tone during the first several years of life, with most flexibility seen at approximately 9-18 months. Between ages 2-6 years and above, there is a slow, progressive increase in resistance to passive stretching, which is linked to the extracerebral factors (including development of muscle mass, ligaments, etc).

PRIMITIVE REFLEXES

Primitive reflexes are a group of automatic motor responses that are seen in infant. Most of these resolve in a specific order over time while some persist into adulthood. These reflexes may not be present in children with upper or lower motor neuron dysfunction from any of a broad group of neurologic disorders. Primitive reflexes may persist in infants with significant

central nervous system damage. These reflexes may also reappear in children and adults who have suffered CNS injury from trauma or stroke.

Rooting Reflex

Adapted from www.winfssi.com/appraisals.html

The rooting and suck reflexes are present even in premature babies and usually processed until two months of extra uterine life. However, they may persist in premature infants and resolve at two months of corrected age rather than chronologic age.

Moro Reflex

Adapted from www.binbungstherapie.com

The Moro reflex is a generalized startle motor response that can be elicited by rapidly moving the head backwards or by loud sounds or by abrupt movement. It is characterized by a sudden outward thrusting of the arms and hands with fingers spread that is followed by specific pattern relaxation. It is present at birth tends to become less intense by two months of age and resolves my 3 to 4 months of corrected age. The Moro reflex is an indicator of general central and peripheral sensory and motor integration.

Asymmetric tonic neck

Adapted from www.quizlet.com

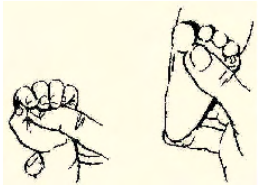
The tonic neck reflex is elicited by turning the infants had to either side of the infant assuming typical fencers posture. Response is related to primarily upper motor neuron function. It is present at birth and term infants. The tonic neck reflex diminishes in strength over time and usually resolves by 4 to 6 months of age. Persistence of the reflex may indicate upper motor neuron and CNS dysfunction.

Step Reflex

Adapted from www.mtnlrincondelvago.com

The step or walking reflex can usually be elicited in term babies by stroking the dorsum of their foot. This will cause a step like movement. This resolves rather quickly by 6 to 8 weeks after birth in term infants. It is a measure of primarily lower motor neuron function.

Digital Grasp Reflexes

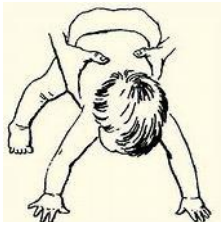


Adapted from www.eweb.furman.edu

Digital grasp occurs both in fingers and toes. The reflex can be elicited by stroking the palm of the hand or sole of the foot causing the digits to fold toward the palmer or plantar surfaces. The palmer reflex resolves gradually by five or six months of age. Plantar reflex can

persist for over a year when there is delayed myelination or if central CNS deficits are present. The plantar reflex can show splaying of toes rather than folding. This would be consistent with Babinsky reflex that would indicate probable upper motor neuron dysfunction.

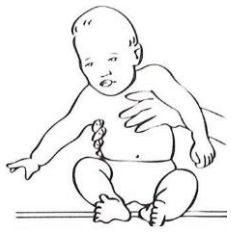
Parachute Reaction



Adapted from ttp://www.winfssi.com/appraisals.html

The parachute reaction is a normal defense reflex, elicited when an infant is held in ventral suspension and is tilted abruptly forward toward the floor, seen in the 8th–12th month of age. It is characterized by protective abduction of arms, extension of elbows and wrists and spreading of fingers, a response that is asymmetrical in infants with hemiparesis and is an early sign of cerebral palsy. A normal parachute response indicates good integration of sensory, labyrinthine and motor coordination.

Postural Response Reaction



Adapted from ttp://www.winfssi.com/appraisals.html

The postural response is a defensive reaction to maintain body position that has been disturbed bilateral movement of the trunk of the child seat position. The typical response is to extend the hand in the direction of disturbance. It develops gradually beginning at 6 to 8 months and is usually well-established in all directions by 11 to 12 months. It is not a primitive reflex tends to be maintained for life. Absence or asymmetry may indicate CNS, upper or lower motor neuron deficits for other motor disorders.

High-risk newborns may show abnormal responses of primitive reflexes, or lack a response entirely. Primitive reflexes in high-risk newborns may vary in response depending on the reflex with absence of reflex or with asymmetrical or atypical patterns of emergence and resolution of specific reflexes.

Fine Motor Developmental Milestones

Vision	
fixation	birth
tracking	1 month
Hands	
holds object	2 months
looks at hand	3 months
hands unfisted	3 months
reaches	4 months
mouthing	4 months
picks up objects	5 months
transfer objects	6 months
holds 2 objects	7 months
picks up 2 objects	8 months
crude grasp	8 months
thumb-finger grasp	10 months
drops object in cup	11 months
turns pages	13 months
2 block tower	13 months
crayon mark	14 months
scribbles	18 months
4 block tower	18 months
turns single page	24 months
draws line	30 months
draws circle	36 months
draws picture	48 months
draws person	54 months
prints name	60 months

The assessment of both fine and gross motor developmental milestones is an essential part of the neurologic and neuro-developmental evaluation of the child at risk. Evaluation includes observation of specific milestones as they develop over time. Fine motors skills relate to vision skills and those that relate to hand skills and manipulations. Visual fixation and tracking are established in early infancy and is maintained for life. Failure to develop visual fixation or tracking might indicate primary vision is deficits related to corneal, retinal or optic nerve disorders. It might also indicate abnormalities of the in visual nerve tracts or the visual cortex. These may also indicate severe global neurodevelopmental deficits. Skills in hand use also begin in early infancy and manifest selves usually at specific corrected ages.

Gross Motor Development Milestones

Head	
side to side	birth
head up	1 month
chest up	2 months
on elbows	3 months
on hands	4 months
Rolls	
front to back	5 months
back to front	6 months
Sits	
with support	5 months
without support	7 months
come to sit	8 months
Ambulation	
kicks	birth
crawling movements	3 months
crawls	9 months
pull to stand	9 months
cruise	10 months
walks 2 hands held	10 months
walks 1 hand held	11 months
walks alone brief	11 months
walks alone steady	12 months
walks well	13 months
runs stiff leg	15 months
kicks ball	18 months
runs well	18 months
upstairs with rail	21 months
up & down stairs	24 months
jumps in place	24 months
climbs	24 months
stairs alternate feet	36 months
hops 1 foot	42 months
skips	54 months
pump on swing	60 months

Gross motor assessment focuses on areas of body control, posture and movement of large muscle groups. In early infancy the focus is on had control and development of strength. Later the ability to roll over, maintain and later obtained sitting position, standing and walking and running. This should be observed carefully during clinical examinations focusing on the ability to develop specific gross motor skills and to maintain posture and develop abilities consistent with typical motor progress in infancy and childhood. Symmetry should also be noted with the possibility of asymmetric motor function indicating CNS abnormalities such as cerebral palsy. Symmetrical loss of motor

function in lower extremities might also indicate the presence cerebral palsy or spinal cord dysfunction. The loss of previously attained skills might indicate that child is at risk of progressive encephalopathy that could be due to metabolic disorders or progressive degenerative CNS disease. In addition to observation during physical examination, periodic formal testing of motor development should be performed. In cases where either fine or gross motor development progress is not attained or if functional abnormalities develop the child should be referred for a complete neurologic evaluation.

Neuromotor testing is intended to provide a clinical picture in time of the state of an infant or child's motor skill development when compared to that of typically developing age-related peers. It is also intended to give indication of the child's strengths and weaknesses and to identify any lags or atypical findings in a child at risk. It also serves to provide information to establish specific diagnoses in the children with atypical development. This would assist in establishing specific diagnoses and to indicate interventions to improve development or to lessen the clinical impact of specific neuromotor impairments.

The general classification of neuromotor impairments falls into four categories: 1. Static disorders, 2. Progressive or degenerative disorders, 3. Spinal cord and peripheral nerve disorders, 4. Structural disorders.

Static disorders can include direct injury to the central nervous system in cases of static encephalopathy that might be related to prematurely including hemorrhagic ischemic or anoxic encephalopathy leading to cognitive and/or motor developments causing any of a variety of motor deficits including cerebral palsy. Static disorders can also include those that are related to chromosome defects such as Down syndrome or genetic conditions which have an impact on cognitive and motor development that may change with time but not of the progressive nature. Progressive disorders would include CNS conditions that have pattern of neuronal loss or CNS degeneration such as Angelman or Rett syndromes. It could also include metabolic disorders that have impact on neuronal survival such as PKU or other amino acid diseases or the recycle disorders. Disorders of spinal cord and peripheral nerves would include spina bifida, cord tethering, spinal muscular atrophy. Structural disorders would include orthopedic disorders with missing limbs or abnormalities of bony and supportive architecture. Also included in this group could be abnormalities muscle function such as myopathies and muscular dystrophies.

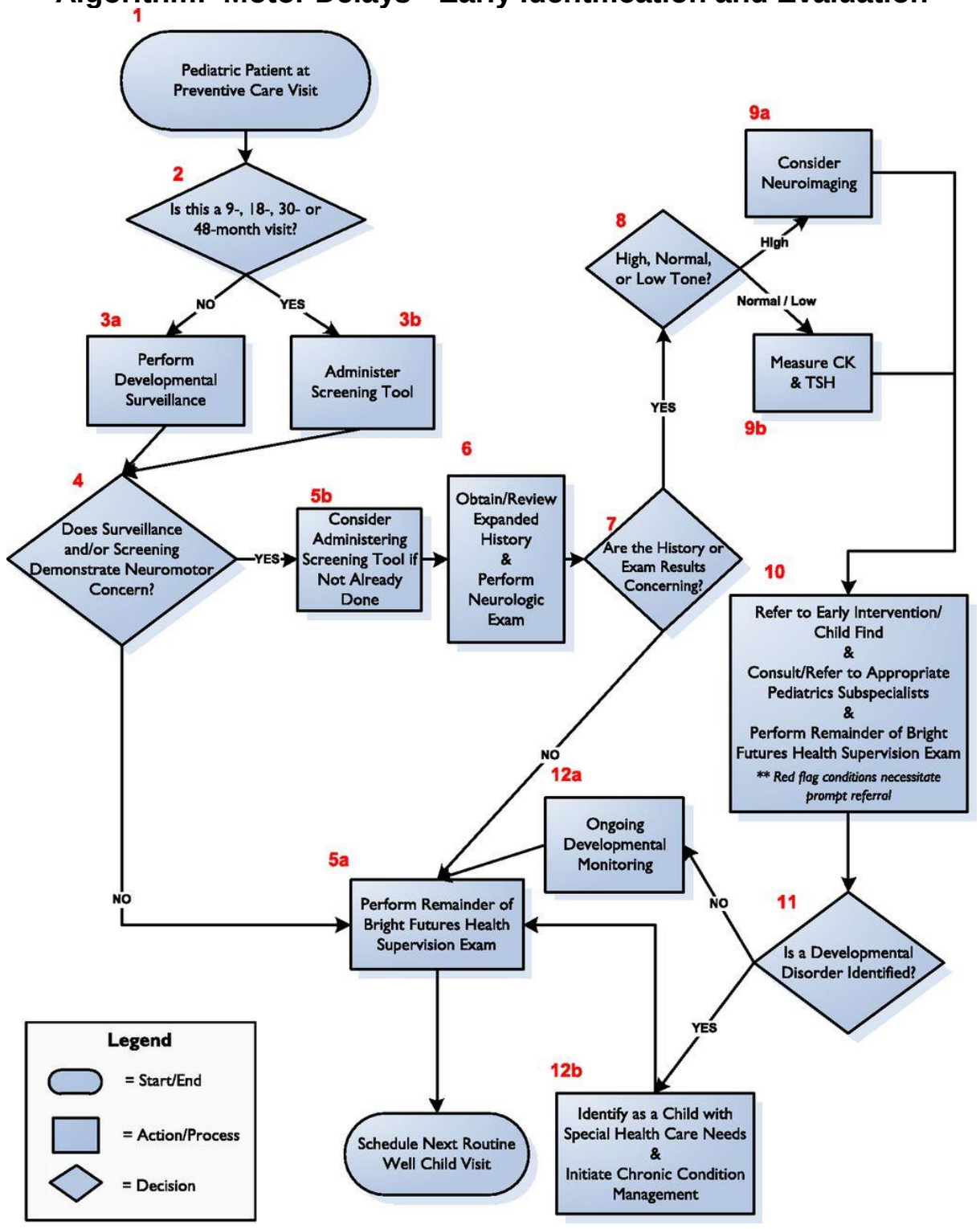
Cerebral palsy is probably the most likely of these disorders and can be found in prematurely born infants because of the risk of intracranial bleeds or anoxia. Likelihood of disability occurs in children with higher levels of cerebral bleeding for injury and leads to spasticity but often with other non-motor disorders and disabilities including seizures and significant cognitive deficits.

The purpose of neonatal follow-up and of schedule neurodevelopmental and neuromotor testing is to distinguish children who are making typical progress from those who have developmental or motor disorders and disabilities. It is also intended to information to establish specific diagnosis and provide prognostic insight. This will help with identifying specific needs and appropriate interventions to lessen the degree of disability and hopefully permit interventions for rent secondary disability and reduce the likelihood of developing no further handicapping conditions.

References:

1. Lester BM, Tronick EZ, Brazelton TB. The Neonatal Intensive Care Unit Network Neurobehavioral Scale procedures. Pediatrics. 2004 Mar;113(3 Pt 2):641-67.

Algorithm: Motor Delays - Early Identification and Evaluation



American Academy of Pediatrics
Clinical Report : Motor Delays: Early Identification and Evaluation
Garey H. Noritz, MD, Nancy A. Murphy, MD, NEUROMOTOR SCREENING EXPERT PANEL
Pediatrics Vol. 131 No. 6 June 1, 2013 pp. e2016 -e2027

Apnea and Reflux and Desaturations

Apnea of prematurity is defined as periodic breathing with pathologic apnea (apnea associated with bradycardia and/or desaturation) in a premature infant. Before 28 weeks, 100% of infants have periodic breathing (a breathing pattern of 3 or more respiratory pauses > 3 seconds with < 20 seconds of respiration between). There is also a linear relationship between increasing gestation and fewer apnea, so that pathologic apnea cease in the majority of premature infants by 36 to 37 weeks gestation. Apneic events which occur in premature infants may be central with absent breathing effort, obstructive or mixed.

- Central apnea occurs with absence of a brainstem stimulus to breathe
- Obstructive apnea occurs when there is a central effort to breathe but air flow is blocked by mucous, airway collapse, etc.
- Mixed apnea contains both central and obstructive components.

Apnea of prematurity is problematic when events are associated with sustained bradycardia < 100 and/or the infant desaturates < 90%, and/or the infant requires stimulation to recover. Observations of pallor, cyanosis, limpness, stiffness, or unresponsiveness indicate a more serious event.

Medical management of apnea may include the use of caffeine as a respiratory stimulant which may eliminate the need for a monitor. If the infant continues to experience frequent apnea with desaturations, further identification of the underlying pathology and additional management of cardiorespiratory problems might be needed.

- If the infant is going to be discharged and events persist an apnea monitor or pulse oximeter may be ordered. Parents will need instruction in cardiorespiratory resuscitation (CPR) and use of the monitor prior to discharge.
- Parents will benefit from Health Care Company and VNA support services.
- If available, a pneumogram may be ordered prior to discharge to assess EKG trend, respiratory effort by impedance, nasal air flow, oxygen saturation, and ph probe to assess presence of any related reflux. Areas of concern on a pneumogram include:

1. Any apnea associated with bradycardia or desaturation.
2. Apnea greater than 20 seconds.
3. ↑ periodic breathing > 5%.
4. ph < 4.0 greater than 6% of time

Reflux should be considered as part of the differential in infants having events since it is relatively common in small premature infants, particularly those with bronchopulmonary dysplasia, increased abdominal pressure, and those receiving steroids or caffeine. Infants with reflux may have events associated with feeds or after feeds. All infants have some spitting.

- Gastro-esophageal reflux disease (GERD) is reflux with the following symptoms: arching, irritability, spit up, gasping, choking, refusal to feed, poor weight gain and respiratory distress.
- A diagnosis of reflux or GERD can be made clinically. It may be confirmed from the pneumogram if the ph drops < 4.0 for > 6% of the overnight recording and/or there are ≥3 events of > 5 minutes duration.

Treatment for reflux includes:

1) Prone or upright positioning for 30 minutes post feeds
2) Elevation of head of bed by 30 degrees with Tucker Sling
3) Thickening of formula with oatmeal cereal (up to 1 tsp per ounce)
4) Small feeds
5) GI consult if GERD symptoms persist

Parent recommendations for infants with a monitor:

- Parents of infants on a home monitor are instructed to keep a daily record of alarms and events and to report any events or concerns to their pediatrician. Alarm report will also be reviewed in NICU Follow-up Clinic.
- Continuing alarms indicate a need for re-evaluation of the monitor to check for technical problems (frequent loose leads) are necessary.
- Continuing events indicate a need for re-evaluation of the infant.
- Parents are also advised to avoid smoking in the home, fireplace smoke, high altitudes, airplane flights and exposure to anyone with a respiratory infection.

Medical management for infants with apnea

- Settings at discharge: apnea: 20 seconds; bradycardia: 80; tachycardia: 220.
- To avoid false positive bradycardia alarms, the low heart rate setting should be lowered at the following intervals:

< 38 weeks	100 beats/minute
38-44 weeks	80 beats/minute
1-3 months*	70 beats/minute
3-12 months*	60 beats/minute

*corrected age

- Allow infants to outgrow caffeine dose naturally. If no events occur, discontinue medication when dosage has decreased by 50%. If events continue, increase dose by weight.
- Once off medication, if the infant is event free for 2-4 weeks discontinue the monitor.
- If parents are anxious about stopping the monitor, suggest turning off monitor during day time hours and use only at night. Order download from home care company if this option is available. Review report, if no events, reassure parents, point out that no events occurred during the day when off monitor and discontinue monitor.

Bronchopulmonary dysplasia and the infant who goes home on Oxygen:

Definition:
Bronchopulmonary dysplasia- treatment with oxygen > 21% for > 28 days plus
(The below criteria apply to < 32 week gestation infants at 36 weeks gestational age or discharge and > 32 weeks gestation after 56 days of life or discharge)
AT 36 weeks:
Mild BPD – breathing room air
Moderate BPD – breathing < 30% oxygen
Severe BPD – breathing > 30 % oxygen and/or needing positive pressure needs

Infants with severe BPD, pulmonary hypertension or confounding respiratory conditions might need to be seen in the pediatric pulmonary clinic at Hasbro Children's Hospital, in addition to the Neonatal Follow-up Clinic. Infants with severe BPD are referred to the BITS Team. All infants discharged home on oxygen will be (irrespective of being a BITS patient or not) will be followed by Pulmonary outpatient for oxygen management. For questions, contact Dr. Karen Daigle at 401 444-8059.

Epidemiology:

- ~10,000 infants each year in US are diagnosed with BPD
- Overall 20% of ventilated premature infants in the US develop BPD
- Incidence of BPD rises with decreasing birth weight
- B. wt.(500-699)gm = 85% of all infants with BPD
- B. wt.(>1500)gm = 5% of all infants with BPD
- 2/3rd of the cases had mild respiratory distress at birth
  [Kendig's Disorders of the Respiratory Tract in Children: Seventh Edition]

Home Management

- Patients on oxygen are seen initially within 2 weeks of discharge and subsequently every 4-6 weeks.
- Parents receive CPR training and instruction in using tanks and pulse oximeter.
- Parents are provided a pulse oximeter to monitor the oxygen saturation.
- Parents keep a record of oxygen desaturations;
- Efforts are made to keep saturations >≥ 93% and parents of preterm infants with BPD, who are discharged home on oxygen, should be instructed to maintain oxygen saturations at 94-96%[1,2]

Evidence for maintaining Oxygen Saturations ≥ 93 % in Preterm Infants with Chronic Lung Disease on oxygen therapy After NICU Discharge

1. Oxygen saturations ≥ 93% decreased rates of SIDS
2. Oxygen saturations ≥ 93% improved weight gain
3. Oxygen saturations ≥ 95% was associated with improved catch-up growth
4. Oxygen saturations of 88-91% for ONE hour at night slowed growth rates
5. Oxygen saturations ≥ 93% decreased Pulmonary Artery Pressure
6. Oxygen saturations of 94-96% (vs 87-91%)
    a. decreased airway resistance
    b. increased lung compliance

c. reduced work of breathing
d. decreased apnea index form 0.62 to 0.04%
e. 50% reduction in time spent <85%

7. Oxygen saturations ≥ 93% optimizes sleep architecture

Clinic Management of BPD

1. Obtain history of O2 needs, dietary intake, medications, and activity level

2. Physical exam with attention to pulmonary status including clinical findings, O_2 saturation and growth velocity
   Goal: O_2 saturation at rest $\geq$ 94% and adequate growth
   - Check O_2 saturation on current level of administered O_2
   - If maintained $\geq$ 94%, lower by 1/8 liter, check O_2 after 30 minutes or with a feed or during crying to determine of O_2 saturation is maintained. If so, can prescribe this new O2 flow as long as sats remain $\geq$ 94%, in the home setting.
   - Decision to discontinue oxygen therapy or to decrease oxygen use are multi factorial and are decided on a case to case basis
   - Most infants can discontinue oxygen therapy at 6-12 months of age

3. Oxygen weaning and medication (diuretics, etc) tapers are typically managed on outpatient basis by Pediatric Pulmonology.

4. Monitor growth velocity – Goal maintaining growth curve; achieving catch up
   Nutrition Assessment – calculate intake: Goal > 120 cal/kg/day

References

1. Poets CF. When do infants need additional inspired oxygen? A review of current literature. Pediatric Pulmonology. 1998; 26:424-428.
2. Kotecha S, Allen J. Oxygen therapy for infants with chronic lung disease. Arch Dis Child Fetal Neonatal Ed. 2002; 87(1):F11-14.

Bronchiolitis

This section is an outpatient adaptation of the most recent (05/2012) evidence based inpatient care guidelines for Bronchiolitis at Hasbro Children's Hospital.

Bronchiolitis is a clinical diagnosis which affects the lower respiratory tract and causes obstruction of smaller airways in children younger than 2 years of age. This obstruction is caused by acute inflammation, edema and necrosis of epithelial cells lining small airways, increased mucus production. Bronchiolitis is initiated by a viral infection of the upper airway. There are numerous viruses which cause bronchiolitis in infants, with RSV being the most common. Bronchiolitis is a self-limited disease. The median duration of illness for children <24 months with bronchiolitis is 12 days with 20% of the children having continued respiratory symptoms after 21 days. Emergency department assessment and hospital admission for respiratory support is sometimes necessary.

Management goals for patients with bronchiolitis:

- Monitoring of clinical and respiratory status to watch for increasing work of breathing, airway obstruction, or impending respiratory failure
- Maintenance of adequate oxygenation/ventilation (oxygen saturation > 94%)
- Maintenance of adequate hydration

Suctioning
The patient should be suctioned as needed, including prior to feeds.
Suctioning does cause trauma to the upper airways and results in swelling, therefore suctioning should be only performed when absolutely necessary.
When suctioning is indicated, the least invasive method having therapeutic effect should be utilized with 0.9% saline solution as needed. **Use of nasal aspirator should be performed, nasopharyngeal suction or "deep suctioning" has no proven benefit and might cause laryngeal trauma. As alternative to "deep suctioning" a mechanical suctioning of the nares can be safely performed with nose suctioning adapters, such as "little suckers".** If inhalation therapy is to be used, suctioning may allow for improved delivery of medication to lower airway.

Nasal Drops
After aggressive nasal suctioning, nasal mucosa may become inflamed creating worsening nasal obstruction and difficulty breathing. Nasal steroid drops or vasoconstrictors have been used to minimize the swelling and obstruction. While this intervention works temporarily, **its effects are short-acting and may result in rebound swelling causing more severe obstruction.** Reducing nasal suctioning will both prevent and resolve this iatrogenic insult.

Albuterol
Routine albuterol therapy is not recommended in treatment of bronchiolitis. Airway edema caused by bronchiolitis is not effectively treated by albuterol. Albuterol treats smooth airway muscle contractions which are the definition for asthma symptoms. A single trial of albuterol, with three consecutive albuterol doses via nebulizer or better four separate doses of 100 µg with a meter dose inhaler and valved holding chamber, may be indicated especially for an infant with a family history of allergy, atopy, or asthma, or exposure to tobacco smoke. If no **objective** improvement in respiratory status **(see Respiratory Scoring Sheet)** is noted 15-30 minutes following treatment, the therapy should not be repeated or continued. Once again, suctioning is recommended prior to respiratory

treatments. Patients with recurring albuterol responsive viral wheezing are not considered to have bronchiolitis.

Systemic Steroids

Steroids are not indicated for bronchiolitis. Systemic glucocorticoids (i.e. prednisolone/prednisone) have been widely given to children with viral bronchiolitis in the past. However, **there is no evidence that use of oral or intravenous steroids improve clinical outcome.** Physicians may consider systemic steroids in children with recurring asthma symptoms

Antibiotics

Bronchiolitis is a viral illness which is not affected by antibiotics. The incidence of a bacterial infection requiring antibiotics in bronchiolitis patients is less than 2% in infants 0-60 days old and decreases further in older infants. Thus, children with the diagnosis of bronchiolitis are usually not benefited by antibiotic therapy.

Chest x-ray

Chest radiographs are rarely indicated in the infant with the clinical diagnosis of bronchiolitis. Transient x-ray findings consistent with the shifting atelectasis associated with bronchiolitis are likely to be misinterpreted as consolidation related to pneumonia, and may lead to unnecessary use of antibiotics. Chest radiographs may occasionally be obtained, at the physician's discretion, in the critically ill patient, the patient with focal lung findings consistent with pneumonia, or in the patient in whom there is concern regarding bacterial super infection.

Respiratory syncytial virus (RSV) (for parents)

Respiratory syncytial virus (RSV) is a very common virus. RSV usually causes mild cold-like symptoms in adults and children. But premature babies or those with lung or heart problems have a high risk of getting very sick if they catch RSV early in life. This is because premature babies do not have fully developed lungs. Also, because they were born early, they may not have received virus-fighting substances (called antibodies) from their mothers that help them fight off RSV and other viruses.

Each year, an estimated 125,000 infants in the United States are hospitalized with severe RSV, the leading cause of infant hospitalization.[1-5] Severe RSV infections may cause up to 500 infants deaths annually in the United States.[6] RSV may also cause more long-term health problems, such as asthma.

RSV season usually starts in the fall and runs through the spring.[7-10] But it can change. In some areas of the United States, RSV season may last all year. Ask your child's healthcare provider when RSV season occurs in your area. If your baby is at high risk for RSV disease, be sure to discuss additional protective steps you can take during your baby's next appointment. Some RSV Symptoms

Usually, RSV causes mild, cold-like symptoms, such as a runny nose and fever. However, in some babies, the symptoms can quickly get worse. Call your healthcare provider right away if your baby has any of these symptoms:

- Persistent coughing
- Wheezing
- Rapid breathing
- Problems breathing or gasping for breath
- Blue color of the lips or around the mouth

Worsening symptoms can be severe and, in some cases, life-threatening. That is why it is so important to help prevent RSV.

Important Safety Information

Synagis® (palivizumab) is indicated for the prevention of serious lung infections caused by respiratory syncytial virus (RSV) in children at high risk of RSV disease. Synagis is given as a shot, usually in the thigh muscle, each month during the RSV season. The first dose of Synagis should be given before RSV season begins. Children who develop an RSV infection while receiving Synagis should continue the monthly dosing schedule throughout the season. Synagis has been used in over 900,000 children in the U.S. since its introduction in 1998.

Very rare cases of severe allergic reactions such as anaphylaxis (<1 case per 100,000 patients) and rare hypersensitivity reactions have been reported with Synagis. These rare reactions may occur when any dose of Synagis is given, not just the first one. Side effects with Synagis may include upper respiratory tract infection, ear infection, fever, and runny nose. In children born with heart problems, Synagis was associated with reports of low blood oxygen levels and abnormal heart rhythms. Synagis should not be used in patients with a history of a severe prior reaction to Synagis or its components.

SEASONAL RSV PROPHYLAXIS

Updated AAP Synagis recommendations are released yearly in the fall and can be found on AAP website. Most recent (2020) guidelines are summarized below and are based on a typical RSV "season" to last from November 1, 2020 through March 31, 2021.

*** However note that 2021 recommendations are likely to be altered due to change in seasonality secondary to COVID-19)*

1. Infants less than 29 weeks and 0 days gestation or less, and less than 1 year old as of November, 2020.
2. Infants less than 32 weeks and 0 days gestation with chronic lung disease (greater than 21% inspired oxygen for at least 28 days after birth) and less than 1 year old in November, 2020.
3. Infants less than 32 weeks and 0 days gestation with chronic lung disease (greater than 21% oxygen for at least 28 days after birth) and between 1 and 2 years old as of November who require ongoing medical treatment for chronic lung disease (supplemental oxygen, diuretic or steroid therapy).
4. Infants under 1 year old with hemodynamically significant congenital heart disease (consultation with a cardiologist is recommended).
5. Infants with pulmonary abnormalities or neuromuscular disease that compromises respiratory secretions.
6. Infants under 2 years of age with profound immunocompromise.

The AAP and our Infectious Disease service recommend prophylaxis beginning in November, 2020 and ending in March, 2021 with a maximum of 5 doses. April doses are not recommended.

Monthly prophylaxis should be discontinued in anyone who develops breakthrough RSV hospitalization. Prophylaxis is not recommended for prevention of RSV nosocomial disease. The benefits of prophylaxis for infants with cystic fibrosis or Down syndrome have not been established.

Beginning in November, WIH shall initiate RSV prophylaxis in the NICU as a first dose prior to discharge for appropriate infants expected to go home between November and March. For preterm infants, we will inform medical providers at discharge of their treatment eligibility and date of their first dose. Whenever possible, we will give the first dose of Synagis 15 mg/kg 2 to 4 days before anticipated discharge

References

1. Leader S, Kohlhase K. *Ped Infec Dis J*. 2002;21:629-632.
2. Glezen WP, Taber LH, Frank AL, et al. *Am J Dis Child*. 1986;140:543-546.
3. Groothuis JR, Gutierrez KM, Lauer BA. *Pediatrics*. 1988;82:199-203.
4. Nelson WE, Behrman RE, Kliegman R, et al. In: *Nelson Textbook of Pediatrics. 15th ed*. Philadelphia, Pa: W. B. Saunders; 1996.
5. Shay DK, Holman RC, Newman RD, et al. *JAMA*. 1999;282:1440-1446.
6. Shay DK, Holman RC, Roosevelt GE, Clark MJ, Anderson LJ. *J Infect Dis*. 2001;183:16-22.
7. Halstead DC, Jenkins SG. Continuous non-seasonal epidemic of respiratory syncytial virus infection in the southeast United States. *South Med J*. 1998;91:433-436.
8. Ledbetter JC, et al. Incidence of infants and children with respiratory syncytial virus infection admitted to a children's hospital during traditional seasonal and non-seasonal periods of time. Presented at the APS/SPR/APA meeting 2002. Abstract 2787.
9. Mavunda K, Djokic B. Prevalence of RSV infections in S. Florida. Presented at the ATS meeting 2000. Abstract G55.
10. Washburne JF, Bocchini JA Jr, Jamison RM. Summertime respiratory syncytial virus infection: epidemiology and clinical manifestations. *South Med J*. 1992;85:579-583.

Procedures for Prior Authorization of Synagis for Respiratory Syncytial Virus Season 2019-2020

The clinical criteria used by N.C. Medicaid for the 2019-2020 Respiratory Syncytial Virus (RSV) season are consistent with guidance published by the *American Academy of Pediatrics (AAP): 2015 Report of the Committee on Infectious Diseases, 30th Edition*. This guidance for Synagis use among infants and children at increased risk of hospitalization for RSV infection is available online by subscription. The coverage season is Nov. 1, 2019, through March 31, 2020. Providers are encouraged to review the AAP guidance prior to the start of the RSV season. Early and Periodic Screening, Diagnosis and Treatment (EPSDT) criteria are evaluated for Synagis requests.

Guidelines for Evidenced-Based Synagis Prophylaxis

Infants younger than 12 months at start of season with a diagnosis of:

- Prematurity - born before 29 weeks 0 days gestation
- Chronic Lung Disease (CLD) of prematurity (defined as birth at less than 32 weeks 0 days gestation and requiring greater than 21 percent oxygen for at least 28 days after birth),
- Hemodynamically significant acyanotic heart disease, receiving medication to control congestive heart failure, and will require cardiac surgical procedures
- Moderate to severe pulmonary hypertension

Infants during first year of life with a diagnosis of:

- Neuromuscular disease or pulmonary abnormality that impairs the ability to clear secretions from the upper airways.
- Profound immunocompromise during RSV season
- CLD of prematurity (see above definition) and continue to require medical support (supplemental oxygen, chronic corticosteroid or diuretic therapy) during the six-month period before start of second RSV season
- Cardiac transplantation during RSV season

Note: Infants with cyanotic heart disease may receive prophylaxis with cardiologist recommendation.

- Infants less than 24 months of age with a diagnosis of:

Prior Approval Request

During the Synagis coverage period, submit all prior approval (PA) requests electronically to www.documentforsafety.org. The web-based program will process PA information in accordance with the guidelines for use. A PA request can be automatically approved based on the information submitted. The program allows a provider to self-monitor the status of a request. Up to five doses can be approved for coverage. Coverage of Synagis for neuromuscular disease or congenital anomaly that impairs ability to clear respiratory secretions from the upper airway will terminate when the beneficiary exceeds 12 months of age. Coverage of Synagis for CLD, profound immunocompromise, or cardiac transplantation will terminate when the beneficiary exceeds 24 months of age.

Provider Information

Providers without internet access should contact the Medicaid Outpatient Pharmacy Program at (919) 855-4300 to facilitate submission of a PA request for Synagis. More information about the Synagis program is available at www.documentforsafety.org.

Synagis is manufactured by MedImmune. There is a representative available who is available to answer questions.

MedImmune Representative: Nina Sweppenheiser
401-301-7578
sweppenheisern@medimmune.com

There are some savings and copay programs that can provide financial assistance to families in regards to obtaining Synagis. Both of these programs are explained below. **NOTE THAT THE PATIENT'S PRIMARY CARE PROVIDER IS RESPONSIBLE FOR FACILITATING THE PROCESS OF COMPLETING THE NECESSARY APPLICATIONS FOR THESE PROGRAMS FOR THEIR PATIENTS**

AZ&Me Prescription Savings Programs

• The AZ&Me Prescription Savings Programs are a group of programs offered by AstraZeneca that allows patients to get free medicines, including Synagis, if they qualify. It is neither a government program nor an insurance plan.
• Patients who qualify may receive free AstraZeneca medicines for up to 1 year.

Patients may qualify for the Program if:

- They are a US Citizen, or a Green Card or Work Visa holder
- The patient's household meets certain income limits
- And one of the following applies: The patient does not have prescription drug coverage that helps pay for SYNAGIS
  OR
  The patient has insurance coverage but has had an appeal for SYNAGIS coverage denied by their insurance company

*****The patient's Primary Care Physician's office is responsible for completing the necessary application for the AZ&Me Prescription Savings Program*****

For additional information, call 1-800-292-6363 M-F 9 am- 6pm ET or visit www.azandme.com

Access 360

Access 360 is the Patient Savings program for SYNAGIS that assists qualified **commercially insured** patients with their copays for SYNAGIS. Eligible patients pay the first $30 of each dose of SYNAGIS and have access to a virtual debit account with up to $2000 to cover the balance.

Eligibility

- Patients with a copay/coinsurance >$30
- Patients not covered by Medicaid, TriCare, or other state or federal government healthcare programs
- Patients with a prescription for SYNAGIS that is consistent with the product label

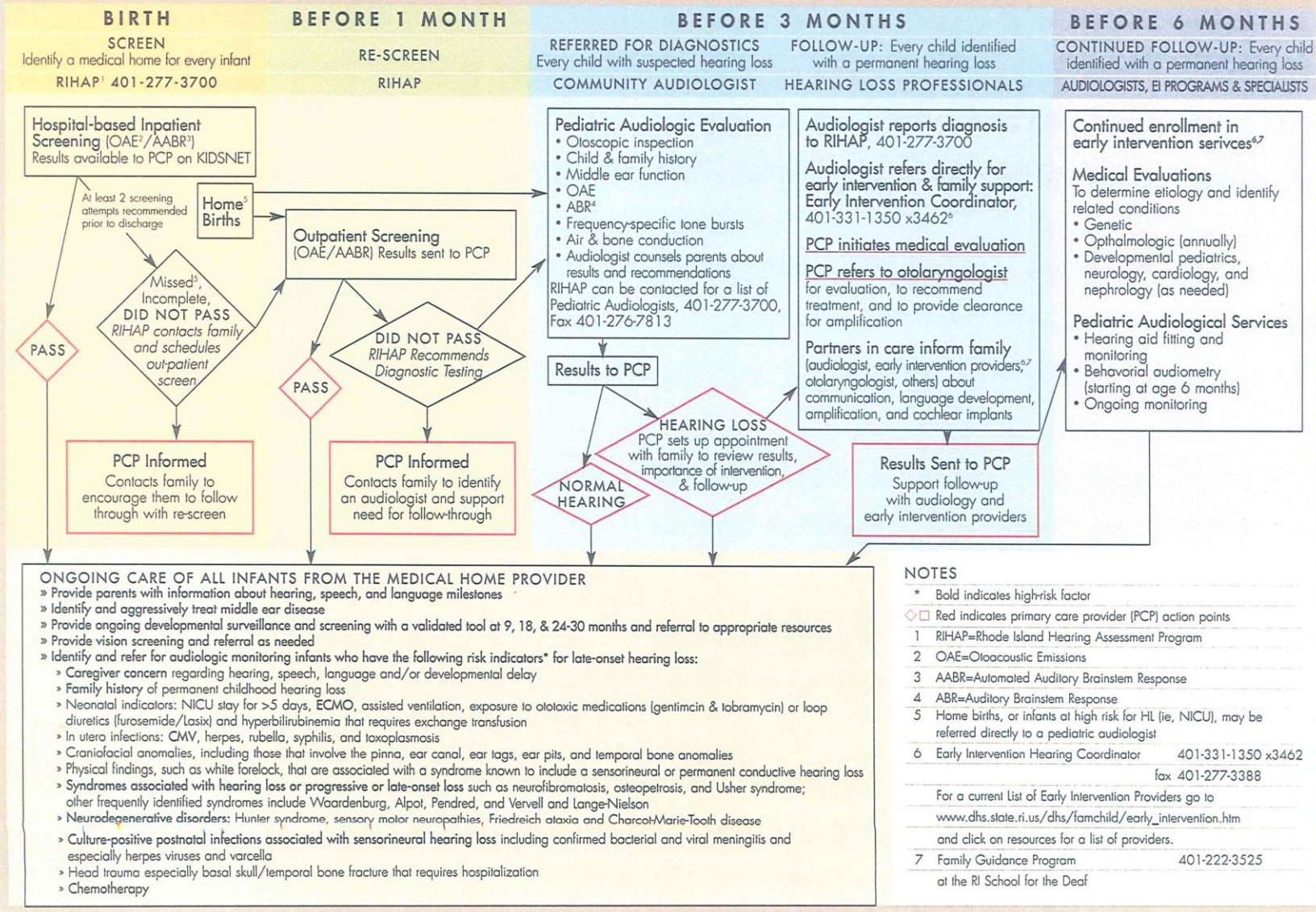
Patients are ineligible if prescriptions are paid by any state or other federally funded programs including, but not limited to, Medicaid, VA, DoD, or TriCare, or where prohibited by law.

Patient is responsible for applicable taxes, if any. The program does not cover costs associated with a patient visit including prescriber, staff, or administrative charges associated with administering the applicable AstraZeneca product. Additional restrictions may apply.

For additional information, call 1-844-ASK-A360 (1-844-275-2360).

Universal Newborn Hearing Screening, Diagnosis, and Intervention

GUIDELINES FOR RHODE ISLAND PEDIATRIC MEDICAL HOME PROVIDERS



Department of Children Youth and Families

The Department of Children Youth and Families is an agency established by the state of RI to protect children whose health and welfare may be adversely affected through injury and neglect; to strengthen the family and to make the home safe for children by enhancing the parental capacity for good child care; to provide a temporary or permanent nurturing environment for children when necessary; and for these purposes to require the mandated reporting of known or suspected child abuse and neglect, investigation of those reports by a social agency, and provision of services, where needed, to the child and family. (RIGL 40-11-1)

DCYF is comprised of Child Protective Investigations and Screening/Intake. Investigations consist of 12 units of Child Protective Investigators who specialize in the investigation of child abuse and neglect cases. The program operates 24 hours a day, 7 days a week and responds to allegations of child abuse or neglect state wide. Work is done to determine if there is evidence of abuse or neglect, and if so what actions are necessary to protect the child from further harm.

Mandated Reporting
All Rhode Island residents are mandated reporters. This means that all persons, who have reasonable cause to know or suspect that any child has been abused and/or neglected or has been a victim of sexual abuse by another child, are required by Rhode Island General Law (RIGL) 40-11-3 to report this information to the Department of Children, Youth and Families within twenty-four (24) hours. If a child is at imminent risk, a report should be made immediately to DCYF.

Reasonable cause may result from any personal observation, admission or response from a child or any communication (even if secondhand or hearsay) which would suggest to a reasonable person that a child has been abused.

Definitions Of Child Abuse (RIGL 40-11-2)
When used and unless the specific context indicates otherwise:

(1) "Abused and/or neglected child" means a child whose physical or mental health or welfare is harmed, or threatened with harm, when his or her parent or other person responsible for his or her welfare:

(i) Inflicts, or allows to be inflicted, upon the child physical or mental injury, including excessive corporal punishment; or

(ii) Creates, or allows to be created, a substantial risk of physical or mental injury to the child, including excessive corporal punishment; or

(iii) Commits, or allows to be committed, against the child, an act of sexual abuse; or

(iv) Fails to supply the child with adequate food, clothing, shelter, or medical care, though financially able to do so or offered financial or other reasonable means to do so; or

(v) Fails to provide the child with a minimum degree of care or proper supervision or guardianship because of his or her unwillingness or inability to do so by situations or conditions such as, but not limited to: social problems, mental incompetency, or the use of a drug, drugs, or alcohol to the

extent that the parent or other person responsible for the child's welfare loses his or her ability or is unwilling to properly care for the child; or

(vi) Abandons or deserts the child; or

(vii) Sexually exploits the child in that the person allows, permits, or encourages the child to engage in prostitution as defined by the provisions in § 11-34.1-1 et seq., entitled "Commercial Sexual Activity"; or

(viii) Sexually exploits the child in that the person allows, permits, encourages, or engages in the obscene or pornographic photographing, filming, or depiction of the child in a setting that, taken as a whole, suggests to the average person that the child is about to engage in, or has engaged in, any sexual act, or that depicts any such child under eighteen (18) years of age performing sodomy, oral copulation, sexual intercourse, masturbation, or bestiality; or

(ix) Commits, or allows to be committed, any sexual offense against the child as such sexual offenses are defined by the provisions of chapter 37 of title 11, entitled "Sexual Assault", as amended; or

(x) Commits, or allows to be committed, against any child an act involving sexual penetration or sexual contact if the child is under fifteen (15) years of age; or if the child is fifteen (15) years or older, and (1) force or coercion is used by the perpetrator, or (2) the perpetrator knows, or has reason to know, that the victim is a severely impaired person as defined by the provisions of § 11-5-11, or physically helpless as defined by the provisions of § 11-37-1(6).

(2) "Child" means a person under the age of eighteen (18).

(3) "Child protective investigator" means an employee of the department charged with responsibility for investigating complaints and/or referrals of child abuse and/or neglect and institutional child abuse and/or neglect.

(4) "Department" means department of children, youth and families.

(5) "Educational program" means any public or private school, including boarding schools, or any home-schooling program.

(6) "Health-care provider" means any provider of health care services involved in the delivery or care of infants and/or care of children.

(7) "Institution" means any private or public hospital or other facility providing medical and/or psychiatric diagnosis, treatment, and care.

(8) "Institutional child abuse and neglect" means situations of known or suspected child abuse or neglect where the person allegedly responsible for the abuse or neglect is a foster parent or the employee of a public or private residential child-care institution or agency; or any staff person providing out-of-home care or situations where the suspected abuse or neglect occurs as a result of the institution's practices, policies, or conditions.

(9) "Law-enforcement agency" means the police department in any city or town and/or the state police.

(10) "Mental injury" includes a state of substantially diminished psychological or intellectual functioning in relation to, but not limited to, such factors as: failure to thrive; ability to think or reason; control of aggressive or self-destructive impulses; acting-out or misbehavior, including incorrigibility, ungovernability, or habitual truancy; provided, however, that the injury must be clearly attributable to the unwillingness or inability of the parent or other person responsible for the child's welfare to exercise a minimum degree of care toward the child.

(11) "Person responsible for child's welfare" means the child's parent; guardian; any individual, eighteen (18) years of age or older, who resides in the home of a parent or guardian and has unsupervised access to a child; foster parent; an employee of a public or private residential home or facility; or any staff person providing out-of-home care (out-of-home care means child day care to include family day care, group day care, and center-based day care). Provided, further, that an individual, eighteen (18) years of age or older, who resides in the home of a parent or guardian and has unsupervised access to the child, shall not have the right to consent to the removal and examination of the child for the purposes of § 40-11-6.

(12) "Physician" means any licensed doctor of medicine, licensed osteopathic physician, and any physician, intern, or resident of an institution as defined in subsection (7).

(13) "Probable cause" means facts and circumstances based upon as accurate and reliable information as possible that would justify a reasonable person to suspect that a child is abused or neglected. The facts and circumstances may include evidence of an injury, or injuries, and the statements of a person worthy of belief, even if there is no present evidence of injury.

(14) "Shaken-baby syndrome" means a form of abusive head trauma, characterized by a constellation of symptoms caused by other than accidental traumatic injury resulting from the violent shaking of and/or impact upon an infant or young child's head.

Medical Neglect

The Child Abuse Prevention and Treatment Act (PL 98 457) and RIGL 40-11-3 require the Department to receive and respond to reports of medical neglect, including reports of the medical neglect of or withholding medically indicated treatment from a disabled infant with life threatening conditions. Medically indicated treatment is defined as treatment, including appropriate nutrition, hydration and medication, which, in the treating physician/nurse practitioner's reasonable medical judgment, will be most likely to be effective in ameliorating or correcting the infant's life threatening conditions. Any person who has knowledge or suspicion or such medical neglect or withholding of medical treatment from a disabled infant (aged one year or less) must report it to the Child Protective Services Hotline immediately. While federal law provides specific protections for medically fragile infants, RI General Law requires that medical neglect or the withholding of medically indicated treatment from any child be reported to the Child Protective Services Hotline immediately.

RIGL 40-11-2 defines a "person responsible for child's welfare" as the child's parent or guardian, any individual, eighteen (18) years of age or older, who resides in the home of a parent or guardian and has unsupervised access to a child, a foster parent, an employee of a public or private residential home or facility or any staff person providing out-of-home care, which includes family child care, group family child care and center-based child care.

Legal Liability

a. Immunity: Any person making a good faith report shall have immunity from any civil or criminal liability (40-11-4).
b. Penalty for Failure to Report: Any person who knowingly fails to report or prevents any person from making a reasonable report is subject to a fine of $500.00 or imprisonment up to one year or both (40-11-6.1).

Reporting Child Abuse/Neglect

The Department has a single, centralized, statewide toll free telephone intake and information system to effectively and efficiently control and monitor the flow of child abuse and/or neglect (CA/N) reports. The Child Protective Services (CPS) hotline is staffed by Child Protective Investigators (CPI), highly trained employees who receive and process reports through the CPS Hotline twenty-four (24) hours per day, seven (7) days per week. The contact information for the DCYF hotline is
1.800. 742.4453 (1.800.RI.CHILD). Reports to the hotline are electronically recorded and placed in the central registry established by § 42-72-7.

Procedure for making report to DCYF

1. Department for Children, Youth and Families -24/7 Child Abuse Hotline Number:
   1 (800) RI-CHILD
   1 (800) 742-4453

2. When contacting the hotline, the caller should provide their name, phone number as well as the location that they are calling from.

3. Obtain the name of the DCYF hotline worker who is taking the report.

4. All reports made to the Child Abuse Hotline at DCYF should include the name, age, and DOB of the child.

5. Provide the contact number and address where the child is currently residing.

6. Provide the name(s), DOB(s), address(es) and contact information for the child's legal guardians.

7. Report specific and detailed information regarding the concerns or reason for suspicion of abuse or neglect of the child.

8. If known, provide any and all information regarding the alleged perpetrators of the abuse/neglect.

9. If known, provide information regarding any other children living in the home.

10. Provide information regarding the current location and condition of the child.

11. The reporter most likely will be contacted at a later date for additional information, in instances in which DCYF conducts and investigation.

Documentation of reports made to DCYF

Any reports made to DCYF regarding concerns of abuse or neglect must be documented in the child's medical record. The date time of the call and the name of the DCYF hotline worker to whom the report was made should be included.

.

COMMONLY PRESCRIBED MEDICATIONS

Medication	*Dose*	*Interval*	*Concentration*
Diuretics			
Diuril (Chlorothiazide)	20-40mg/kg/day	Divided q12	50mg/ml
Aldactone (Spironolocatone)	1-3 mg/kg/day	Daily	1,2, 3 or 5mg/ml (compounded)
Lasix (Furosemide)	1-2 mg/kg/day	Daily	10 mg/ml
Apnea Control			
Caffeine Citrate	Load 20mg/kg Maintenance 5-10mg/kg	Daily	20mg/ml
Bronchodilators			
Albuterol MDI	1-2 puffs (180-540mcg)	Every 4-6 hours	90mcg/actuation
Albuterol Nebulizer	0.05-0.15 mg/kg/dose	Every 4-6 hours	0.5% solution
Montelukast (Singular)	4mg/day for 6 mo.to 5 yrs	5mg/day for 6 yr.to14 yrs	Give in the evening without regard to meals as granule packet or chewable tabs
CONSTIPATION AIDES			
MiraLAX (polyethylene Glycol 3350) Prune/Pear juice Lactulose (Enulose,Generlac)	0.5 g /kg 10 cc PO 1.7 to 6.7 gms/day (2.5 -10 cc/d)	Once per day Once per day 3-4 x/day	 May increase to 3 x /d Titrate to 2 -3 soft stools/day
Corticosteroids			
Flovent (Fluticasone) oral inhalation	44 mcg/puff x 2	2-4 x /day	Via face mask and spacer 10.6 g/device
Pulmicort (budesonide)	0.25-0.5mg	Daily	0.25, 0.5 or 1mg neb
QVAR (beclaethasone)oral inhalation	40 mcg	2 x per day	Ages 5-11 yrs
ANTICONVULSANTS			
Dilantin (phenytoin)	5-8mg/kg/day	Divided 2-3 times/d	125mg/5ml
Phenobarbital	3-6mg/kg/day	Daily or divided bid	20mg/5ml
Keppra (levetiracetam)	10mg/kg/dose	BID	100mg/ml
Antibiotics			
Amoxicillin treatment	25-50mg/kg/day	Divided BID	125 or 250mg/5ml
Amoxicillin prophylaxis	25mg/kg/day	Daily	
Reflux			
Reglan (metaclopromide)	0.1-0.2mg/kg/dose	3-4 times daily	5mg/5ml
Zantac (ranitidine)	2mg/kg/dose	2 to 3 x /day	15mg/ml

Prilosec (omeprazole)	1mg/kg/day	Daily or divided BID	2mg/ml (compound)
Maalox/Mylanta	1-2 ml/kg/dose (max 15ml)	4-6 times daily	
Prevacid (lansoprazole)	0.5–1.0mg/kg/day	BID or QD	(not under 6 months)

Medication	*Dose*	*Interval*	*Concentration*
RSV			
Synagis Epinephrine	15mg/kg 0.01 mg/kg	IM monthly ETT,IM,or IV	RSV season Code med, asthma
SECRETIONS			
Robinul (glycopyrrolate) Aka Cuvposa	40-100mc/kg/dose	3-4 x/day	Solution= 1mg/5 cc
CANDIDA TREATMENTS			
Oral thrush Nystatin	200,000 to 400,000units per dose	4 x per day	Suspension = 100,000 units per cc (comes in 5cc and 60 cc sizes)
Fluconazole (Diflucan)	Day 1 : 6 mg/kg Day 2- 14 : 3 mg/kg	Once per day	Minimum duration of therapy is 14 days
Skin candida			
Topical Nystatin powder	100,000 units / g	4 x per day	Comes in 15 g,30g and 60 g sizes
Nystatin Ointment/cream	100,000 units / g	4 x per day	Comes in 15 g or 30 g
Triamicinolone+nystatin 0.1% ointment or cream	1 skin application	2-4 x per day	Comes in 15 g or 30g, or 80 g tubes
PULMONARY HYPERTENSION			
Sildenafil (Viagra)	0.25-0.5 mg/kg/dose	Every 4 to 8 hrs	Increase dose as needed /tolerated to 1 mg/kg/dose q 4-8 hrs
PEDIATRIC VITAMINS			
Poly vi sol with/without iron	0.5 to 1 ml	Once daily	
Tri vi sol with/without iron	0.5 to 1 m.	Once daily	Note: tri vi sol only has Vitamin A, D and C
Cholecalciferol(Vitamin D)	400 IU (use the formulation with 1 drop = 400 IU	Once daily	Watch as some formulations use 400 IU per 1 ml
ENDOCRINE MEDICATIONS			
Levothryoxine (T4)	10-15 micrograms/kg/dose	Once daily	(trade name=Synthroid)
LIVER MEDICATIONS:			
Ursodiol (Actigall)	10-20 mg/kg/24 hours	Divide the dose to BID to TID po	Treats direct hyperbilirubinemia

Recommendations for Preventive Pediatric Health Care (RE9535)

Committee on Practice and Ambulatory Medicine

Each child and family is unique; therefore, these **Recommendations for Preventive Pediatric Health Care** are designed for the care of children who are receiving competent parenting, have no manifestations of any important health problems, and are growing and developing in satisfactory fashion. **Additional visits may become necessary** if circumstances suggest variations from normal.

These guidelines represent a consensus by the Committee on Practice and Ambulatory Medicine in consultation with national committees and sections of the American Academy of Pediatrics. The Committee emphasizes the great importance of **continuity of care** in comprehensive health supervision and the need to avoid **fragmentation of care.**

	INFANCY[4]									EARLY CHILDHOOD[4]					MIDDLE CHILDHOOD[4]				ADOLESCENCE[4]										
AGE[5]	PRENATAL[1]	NEWBORN[2]	2-4d[3]	By 1mo	2mo	4mo	6mo	9mo	12mo	15mo	18mo	24mo	3y	4y	5y	6y	8y	10y	11y	12y	13y	14y	15y	16y	17y	18y	19y	20y	21y
HISTORY																													
Initial/Interval	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MEASUREMENTS																													
Height and Weight		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Head Circumference		•	•	•	•	•	•	•	•	•	•	•																	
Blood Pressure													•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SENSORY SCREENING																													
Vision		S	S	S	S	S	S	S	S	S	S	S	O[6]	O	O	O	O	O	S	O	S	S	O	S	S	O	S	S	S
Hearing		O[7]	S	S	S	S	S	S	S	S	S	S	S	O	O	O	O	O	S	O	S	S	O	S	S	O	S	S	S
DEVELOPMENTAL/ BEHAVIORAL ASSESSMENT[8]		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PHYSICAL EXAMINATION[9]		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PROCEDURES-GENERAL[10]																													
Hereditary/Metabolic Screening[11]		◄	•	►																									
Immunization[12]		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Hematocrit or Hemoglobin[13]								•	►	•					►				◄			•[14]							►
Urinalysis															•				◄				•[15]						►
PROCEDURES-PATIENTS AT RISK																													
Lead Screening[16]								•	►			•																	
Tuberculin Test[17]									•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Cholesterol Screening[18]												•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
STD Screening[19]																			•	•	•	•	•	•	•	•	•	•	•
Pelvic Exam[20]																			•	•	•	•	•	•	•	◄	•[20]	►	•
ANTICIPATORY GUIDANCE[21]	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Injury Prevention[22]	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Violence Prevention[23]	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Sleep Positioning Counseling[24]	•	•	•	•	•	•	•																						
Nutrition Counseling[25]	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DENTAL REFERRAL[26]									◄				•																

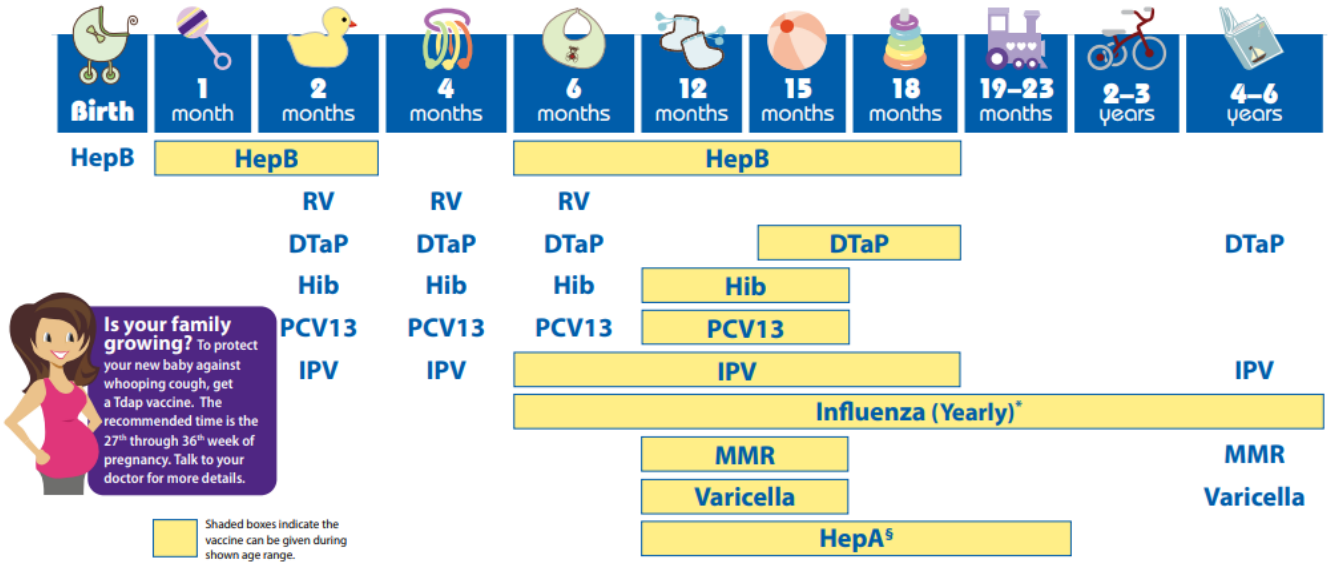
1. A prenatal visit is recommended for parents who are at high risk, for first-time parents, and for those who request a conference. The prenatal visit should include anticipatory guidance, pertinent medical history, and a discussion of benefits of breastfeeding and planned method of feeding per AAP statement "The Prenatal Visit" (1996).
2. Every infant should have a newborn evaluation after birth. Breastfeeding should be encouraged and instruction and support offered. Every breastfeeding infant should have an evaluation 48-72 hours after discharge from the hospital to include weight, formal breastfeeding evaluation, encouragement, and instruction as recommended in the AAP statement "Breastfeeding and the Use of Human Milk" (1997).
3. For newborns discharged in less than 48 hours after delivery per AAP statement "Hospital Stay for Healthy Term Newborns" (1995).
4. Developmental, psychosocial, and chronic disease issues for children and adolescents may require frequent counseling and treatment visits separate from preventive care visits.
5. If a child comes under care for the first time at any point on the schedule, or if any items are not accomplished at the suggested age, the schedule should be brought up to date at the earliest possible time.
6. If the patient is uncooperative, rescreen within 6 months.
7. All newborns should be screened per the AAP Task Force on Newborn and Infant Hearing statement, "Newborn and Infant Hearing Loss: Detection and Intervention" (1999).
8. By history and appropriate physical examination: if suspicious, by specific objective developmental testing. Parenting skills should be fostered at every visit.
9. At each visit, a complete physical examination is essential, with infant totally unclothed, older child undressed and suitably draped.
10. These may be modified, depending upon entry point into schedule and individual need.
11. Metabolic screening (eg, thyroid, hemoglobinopathies, PKU, galactosemia) should be done according to state law.
12. Schedule(s) per the Committee on Infectious Diseases, published annually in the January edition of *Pediatrics*. Every visit should be an opportunity to update and complete a child's immunizations.
13. See AAP *Pediatric Nutrition Handbook* (1998) for a discussion of universal and selective screening options. Consider earlier screening for high-risk infants (eg, premature infants and low birth weight infants). See also "Recommendations to Prevent and Control Iron Deficiency in the United States. *MMWR.* 1998;47 (RR-3):1-29.
14. All menstruating adolescents should be screened annually.
15. Conduct dipstick urinalysis for leukocytes annually for sexually active male and female adolescents.
16. For children at risk of lead exposure consult the AAP statement "Screening for Elevated Blood Levels" (1998). Additionally, screening should be done in accordance with state law where applicable.
17. TB testing per recommendations of the Committee on Infectious Diseases, published in the current edition of *Red Book: Report of the Committee on Infectious Diseases*. Testing should be done upon recognition of high-risk factors.
18. Cholesterol screening for high-risk patients per AAP statement "Cholesterol in Childhood" (1998). If family history cannot be ascertained and other risk factors are present, screening should be at the discretion of the physician.
19. All sexually active patients should be screened for sexually transmitted diseases (STDs).
20. All sexually active females should have a pelvic examination. A pelvic examination and routine pap smear should be offered as part of preventive health maintenance between the ages of 18 and 21 years.
21. Age-appropriate discussion and counseling should be an integral part of each visit for care per the AAP *Guidelines for Health Supervision III* (1998).
22. From birth to age 12, refer to the AAP injury prevention program (TIPP®) as described in *A Guide to Safety Counseling in Office Practice* (1994).
23. Violence prevention and management for all patients per AAP Statement "The Role of the Pediatrician in Youth Violence Prevention in Clinical Practice and at the Community Level" (1999).
24. Parents and caregivers should be advised to place healthy infants on their backs when putting them to sleep. Side positioning is a reasonable alternative but carries a slightly higher risk of SIDS. Consult the AAP statement "Positioning and Sudden Infant Death Syndrome (SIDS): Update" (1996).
25. Age-appropriate nutrition counseling should be an integral part of each visit per the AAP *Handbook of Nutrition* (1998).
26. Earlier initial dental examinations may be appropriate for some children. Subsequent examinations as prescribed by dentist.

Key: • = to be performed; ★ = to be performed for patients at risk; S = subjective, by history; O = objective, by a standard testing method; ◄—•—► = the range during which a service may be provided, with the dot indicating the preferred age.

NB: Special chemical, immunologic, and endocrine testing is usually carried out upon specific indications. Testing other than newborn (eg, inborn errors of metabolism, sickle disease, etc) is discretionary with the physician.

American Academy of Pediatrics

2021 Recommended Immunizations for Children from Birth Through 6 Years Old



NOTE:
If your child misses a shot, you don't need to start over. Just go back to your child's doctor for the next shot. Talk with your child's doctor if you have questions about vaccines.

FOOTNOTES:

* Two doses given at least four weeks apart are recommended for children age 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.

§ Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 months after the first dose. All children and adolescents over 24 months of age who have not been vaccinated should also receive 2 doses of HepA vaccine.

If your child has any medical conditions that put him at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that he or she may need.

See back page for more information on vaccine-preventable diseases and the vaccines that prevent them.

For more information, call toll-free
1-800-CDC-INFO (1-800-232-4636)
or visit
www.cdc.gov/vaccines/parents

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

AAFP
AMERICAN ACADEMY OF FAMILY PHYSICIANS

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Vaccine-Preventable Diseases and the Vaccines that Prevent Them

Disease	Vaccine	Disease spread by	Disease symptoms	Disease complications
Chickenpox	Varicella vaccine protects against chickenpox.	Air, direct contact	Rash, tiredness, headache, fever	Infected blisters, bleeding disorders, encephalitis (brain swelling), pneumonia (infection in the lungs)
Diphtheria	DTaP* vaccine protects against diphtheria.	Air, direct contact	Sore throat, mild fever, weakness, swollen glands in neck	Swelling of the heart muscle, heart failure, coma, paralysis, death
Hib	Hib vaccine protects against *Haemophilus influenzae* type b.	Air, direct contact	May be no symptoms unless bacteria enter the blood	Meningitis (infection of the covering around the brain and spinal cord), intellectual disability, epiglottitis (life-threatening infection that can block the windpipe and lead to serious breathing problems), pneumonia (infection in the lungs), death
Hepatitis A	HepA vaccine protects against hepatitis A.	Direct contact, contaminated food or water	May be no symptoms, fever, stomach pain, loss of appetite, fatigue, vomiting, jaundice (yellowing of skin and eyes), dark urine	Liver failure, arthralgia (joint pain), kidney, pancreatic and blood disorders
Hepatitis B	HepB vaccine protects against hepatitis B.	Contact with blood or body fluids	May be no symptoms, fever, headache, weakness, vomiting, jaundice (yellowing of skin and eyes), joint pain	Chronic liver infection, liver failure, liver cancer
Influenza (Flu)	Flu vaccine protects against influenza.	Air, direct contact	Fever, muscle pain, sore throat, cough, extreme fatigue	Pneumonia (infection in the lungs)
Measles	MMR** vaccine protects against measles.	Air, direct contact	Rash, fever, cough, runny nose, pink eye	Encephalitis (brain swelling), pneumonia (infection in the lungs), death
Mumps	MMR**vaccine protects against mumps.	Air, direct contact	Swollen salivary glands (under the jaw), fever, headache, tiredness, muscle pain	Meningitis (infection of the covering around the brain and spinal cord) , encephalitis (brain swelling), inflammation of testicles or ovaries, deafness
Pertussis	DTaP* vaccine protects against pertussis (whooping cough).	Air, direct contact	Severe cough, runny nose, apnea (a pause in breathing in infants)	Pneumonia (infection in the lungs), death
Polio	IPV vaccine protects against polio.	Air, direct contact, through the mouth	May be no symptoms, sore throat, fever, nausea, headache	Paralysis, death
Pneumococcal	PCV13 vaccine protects against pneumococcus.	Air, direct contact	May be no symptoms, pneumonia (infection in the lungs)	Bacteremia (blood infection), meningitis (infection of the covering around the brain and spinal cord), death
Rotavirus	RV vaccine protects against rotavirus.	Through the mouth	Diarrhea, fever, vomiting	Severe diarrhea, dehydration
Rubella	MMR** vaccine protects against rubella.	Air, direct contact	Sometimes rash, fever, swollen lymph nodes	Very serious in pregnant women—can lead to miscarriage, stillbirth, premature delivery, birth defects
Tetanus	DTaP* vaccine protects against tetanus.	Exposure through cuts in skin	Stiffness in neck and abdominal muscles, difficulty swallowing, muscle spasms, fever	Broken bones, breathing difficulty, death

* DTaP combines protection against diphtheria, tetanus, and pertussis.
** MMR combines protection against measles, mumps, and rubella.

Last updated February 2021 • CS322257-A

Home Health Care Companies: Supplies, Monitors, Etc.

Apria Health Care - RI
70 Catamore Blvd, Suite 200
East Providence, RI 02914
(401) 435-8500
(800) 992-9411 - RI
FAX: (781) 762-9301

Apria Health Care - MA
4 Presidential Way, Unit A
Woburn, MA 01801
(978) 737-9008

Apria Health Care - MA
170 Carando Drive
Springfield, MA 01104
(413) 736-4529

Vanguard Home Medical Equipment - RI
155 Jefferson Blvd.
Warwick, RI 02888
(401) 468-1300
(800) 696-3000
FAX: (401) 633-6736 or (401) 468-1333

Kent Home Medical Equipment
11 Knight Street, Unit D15
Warwick, RI 02886
(401) 732-0022

Dartmouth Medical Equipment - MA
19 Old Westport Road
Dartmouth, MA 02747
(508) 997-1241

Advantage Home Medical Equipment – RI
1507 Atwood Ave.,
Johnston, RI 02919
(401) 331-5374

The Claflin Company – RI
455 Warwick Industrial Drive
Warwick, RI 02886
(401) 739-4150

Respiratory Solutions – RI
24 Albion Road
Lincoln, RI 02865
(401) 333-1500
(866) 455-0500

New England Home Therapies
(BioScrip Infusion Services)
337 Turnpike Road
Southborough, MA 01772
(508) 480-8409
(800) 966-2487
FAX: (508) 480-0724

Hearing Loss and the Neonatal Intensive Care Unit (NICU) Population

Newborn hearing screening began due to the increased risk for hearing loss associated with the NICU population. Whereas universal newborn hearing screening is a standard across the United States due to the incidence of hearing loss among the general population, the necessity for screening and subsequent diagnosis of the high/at-risk population remains. While estimates as to the prevalence of hearing loss in the high risk/at-risk (NICU) population are variable, the consensus is at least 10/1000 or 1-2/100 (1, 2, 3). Risk factors in addition to length of stay in the NICU (>5 days) will influence the possibility of hearing loss. The Joint Commission on Infant Hearing (JCIH) has outlined risk factors for hearing loss regardless of length of stay in the NICU to include ECMO, assisted ventilation, exposure to ototoxic medications (gentamycin and tobramycin) or loop diuretics (furosemide/Lasix) and hyperbilirubinemia requiring exchange transfusion. Along with increased prevalence of permanent hearing loss in the NICU population is an increased incidence of auditory neuropathy compared to the general population (4,5). Risk of delayed onset and progressive hearing loss is significant in the NICU population most often attributed to the comorbid risk factors outlined by JCIH regardless of length of stay in the NICU (6). The possible effects of hearing loss on speech and language development, psychosocial impact and educational needs is well documented regardless of type and/or degree of hearing loss and is the primary consideration in the need for accurate and timely screening, diagnostic and follow-up/tracking for hearing loss.

DeCapua B, Constantini D, Martufi C, Latin G, Gentile M, DeFelice : Universal neonatal hearing screening: The Siena (Italy) experience on 19,700 newborns. Early Human Development 2007; 83(9): 601-606.
Nagapoornima P, Ramesh A, Srilaskshm, Rao S, Patricia PL, Gore M, Dominic M. Swarnarekha: Universal Hearing Screening. Indian Journal Pediatrics. 2007; 74: 545-9.
Vohr, b, Simon P, McDermot, C, Kurtzer-White E, Johnson MJ, Topol D. Early Hearing Screening, Detection and Intervention (EHDI) in Rhode Island. Medicine and Health/Rhode Island. 2002; 85(12): 369-372.
Foerst A, Beutner D, Lang-Roth R, Huttenbrink KB, von Wedel H, Walger M. Prevalence of auditory neuropathy/snaptopathy in a population of children with profound hearing loss. International Journal of Pediatric Otorhinolaryngology. 2006; 70(8): 1415-1422.
Boudewyns A, Declau F, van den Ende J, Hofkens A, Dirckx S, Van de Heyning P. Auditory neurophathy spectrum disorder (ANSD) in referrals from neonatal hearing screening at a well-baby clinic. European Journal of Pediatrics. 2016; 175(7): 993-1000.
Kraft C, Malhotra S, Boerst, Thorne M. Risk Indicators for Congenital and Delayed-Onset Hearing Loss. Otology & Neurotology. 2014; 35: 1839-1843.

Degree Of Long-Term Hearing Loss To Psychosocial Impact And Educational Needs			
Degree of Hearing Loss Based on modified pure tone average (500-4000 HZ)	**Possible Effect of Hearing Loss on the Understanding of Language & Speech**	**Possible Psychological Impact of Hearing Loss**	**Potential Educational Needs and Programs**
NORMAL HEARING -10 - + 15 dB HL	Children have better hearing sensitivity than the accepted normal range for adults. A child with hearing sensitivity in the -10 to +15 dB range will detect the complete speech signal even at soft conversation levels. However, good hearing does not guarantee good ability to discriminate speech in the presence of background noise.		
MINIMAL (BORDERLINE) 16-25 dB HL	May have difficulty hearing faint or distant speech. At 15 dB student can miss up to 10% of speech signal when teacher is at a distance greater than 3 feet and when the classroom is noisy, especially in the elementary grades when verbal instruction predominates	May be unaware of subtle conversation cues which could cause child to be viewed as inappropriate or awkward. May miss portions of fast-paced peer interactions which could begin to have an impact on socialization and self concept. May have immature behavior. Child may be more fatigued than classmates due to listening effort needed.	May benefit from mild gain/low MPO hearing aid or personal FM system dependent on loss configuration. Would benefit from soundfield amplification if classroom is noisy and/or reverberant. Favorable seating. May need attention to vocabulary or speech, especially with recurrent *otitis media* history. Appropriate medical management necessary for conductive losses. Teacher requires inservice on impact of hearing loss on language development and learning.
MILD 26-40 dB HL	At 30 dB can miss 25-40% of speech signal. The degree of difficulty experienced in school will depend upon the noise level in classroom, distance from teacher and the configuration of the hearing loss. Without amplification the child with 35-40 dB loss may miss at least 50% of class discussions, especially when voices are faint or speaker is not in line of vision. Will miss consonants, especially when a high frequency hearing loss is present.	Barriers beginning to build with negative impact on self esteem as child is accused of "hearing when he or she wants to", "daydreaming", or "not paying attention". Child begins to lose ability for selective hearing, and has increasing difficulty suppressing background noise which makes the learning environment stressful. Child is more fatigued than classmates due to listening effort needed.	Will benefit from a hearing aid and use of a personal FM or soundfield FM system in the classroom. Needs favorable seating and lighting. Refer to special education for language evaluation and educational follow-up. Needs auditory skill building. May need attention to vocabulary and language development, articulation or speech reading and/or special support in reading. May need help with self esteem. Teacher inservice required.
MODERATE 41-55 dB HL	Understands conversational speech at a distance of 3 -5 feet (face-to-face) only if structure and vocabulary controlled. Without amplification the amount of speech signal missed can be 50% to 75% with 40 dB loss and 80%	Often with this degree of hearing loss, communication is significantly affected, and socialization with peers with normal hearing becomes increasingly difficult. With full time use of hearing aids/FM	Refer to special education for language evaluation and for educational follow-up. Amplification is essential (hearing aids and FM system). Special education support may be needed, especially for primary children.

	to 100% with 50 dB loss. Is likely to have delayed or defective syntax, limited vocabulary, imperfect speech production and an atonal voice quality.	systems child may be judged as a less competent learner. There is an increasing impact on self-esteem.	Attention to oral language development, reading and written language. Auditory skill development and speech therapy usually needed. Teacher inservice required.
MODERATE TO SEVERE 56-70 dB HL	Without amplification, conversation must be very loud to be understood. A 55 dB loss can cause child to miss up to 100% of speech information. Will have marked difficulty in school situations requiring verbal communication in both one-to-one and group situations. Delayed language, syntax, reduced speech intelligibility and atonal voice quality likely.	Full time use of hearing aids/FM systems may result in child being judged by both peers and adults as a less competent learner, resulting in poorer self concept, social maturity and contributing to a sense of rejection. Inservice to address these attitudes may be helpful.	Full time use of amplification is essential. Will need resource teacher or special class depending on magnitude of language delay. May require special help in all language skills, language based academic subjects, vocabulary, grammar, pragmatics as well as reading and writing. Probably needs assistance to expand experimental language base. Inservice of mainstream teachers required.
SEVERE 71-90 dB HL	Without amplification may hear loud voices about one foot from ear. When amplified optimally, children with hearing ability of 90 dB or better should be able to identify environmental sounds and detect all of the sounds of speech. If loss is of prelingual onset, oral language and speech may not develop spontaneously or will be severely delayed. If hearing loss is of recent onset speech is likely to deteriorate with quality becoming atonal.	Child may prefer other children with hearing impairments as friends or playmates. This may further isolate the child from the mainstream, however, these peer relationships may foster improved self concept and a sense of cultural identity.	May need full-time special aural/oral program for with emphasis on all auditory language skills, speech reading, concept development and speech. As loss approaches 80-90dB, may benefit from a Total Communication approach, especially in the early language learning years. Individual hearing aid/personal FM system essential. Need to monitor effectiveness of communication modality. Participation in regular classes as much as beneficial to student. Inservice of mainstream teachers essential.
PROFOUND 91 dB HL or more	Aware of vibrations more than tonal pattern. Many rely on vision rather than hearing as primary avenue for communication and learning. Detection of speech sounds dependent upon loss configuration and use of amplification. Speech and language will not develop spontaneously and is likely to deteriorate rapidly if hearing loss is of recent onset.	Depending on auditory/oral competence, peer use of sign language, parental attitude, etc., child may or may not increasingly prefer association with the deaf culture.	May need special program for deaf children with emphasis on all language skills and academic areas. Program needs specialized supervision and comprehensive support services. Early use of amplification likely to help if part of an intensive training program. May be cochlear implant or vibrotactile aid candidate. Recent onset. requires continual appraisal of needs in regard to communication and learning mode. Part-time in regular classes as much as beneficial to student.
UNILATERAL One normal hearing ear and one ear with at least a permanent mild hearing loss	May have difficulty hearing faint or distant speech. Usually has difficulty localizing sounds and voices. Unilateral listener will have greater difficulty understanding speech when environment is noisy and/or reverberant. Difficulty detecting or understanding soft speech from side of bad ear, especially in group	Child may be accused of selective hearing due to discrepancies in speech understanding in quiet versus noise. Child will be more fatigued in classroom setting due to greater effort needed to listen. May appear inattentive or frustrated. Behavior problems sometimes evident.	May benefit from personal FM or soundfield FM system in classroom. CROS hearing aid may be of benefit in quiet settings. Needs favorable seating and lighting. Student is at risk for educational difficulties. Educational monitoring warranted with support services provided as soon as difficulties appear. Teacher

	discussion.		inservice is beneficial.

NOTE: All children with hearing loss require periodic audiologic evaluation, rigorous monitoring of amplification and regular monitoring of communication skills. All children with hearing loss (especially conductive) need appropriate medical attention in conjunction with educational programming.

Developed by:
Karen L. Anderson, Ed.S & Noel D. Matkin, Ph.D (1991)

Visual Reinforcement Audiometry (VRA) Testing for 7 months and older

RHODE ISLAND

Bristol
Aquidneck Hearing Center
567 Metacom Avenue, Unit 6
(401) 254-4327

East Greenwich
University Otolaryngology
1351 South County Trail, Suite 303
(401) 885-8484

Kingston
University of Rhode Island
Dept of Communicative Disorders
3071 Kingstown Road
(401) 874-4742

Lincoln
Hear For You Hearing & Balance Center
6 Blackstone Valley Place, Bldg 3, Ste 307
(401) 475-6116

Middletown
Aquidneck Hearing Center
850 Aquidneck Avenue, Unit B-9
(401) 849-4448

Pawtucket
Memorial Hospital
111 Brewster Street
(401) 729-2022

Providence
RI Hospital Audiology/Speech
115 Georgia Avenue
(401) 444-5485

* RI Hearing Center
RI School for the Deaf
1 Corliss Park
(401) 222-3525

University Otolaryngology
830 Eddy Street
(401) 274-2300

Women & Infants Hospital
Dept of Audiology
134 Thurbers Avenue, Suite 215
(401) 453-7751

Wakefield
University Otolaryngology
116 Main Street
(401) 782-4400

Westerly
ENT Associates of Westerly
17 Wells Street, Suite 201
(401)596-2033

****

*** Free evaluations at Rhode Island School for the Deaf**

****

AUDITORY BRAINSTEM RESPONSE TESTING (ABR)

Rhode Island

UNSEDATED TESTING
(0 - 3 months corrected age)

Providence
RI Hospital Audiology/Speech
115 Georgia Ave
(401) 444-5485

Women & Infants Hospital
Dept of Audiology
134 Thurbers Ave, Suite 215
(401) 453-7751

SEDATED TESTING
(3 months and older corrected age)

Providence
RI Hospital Audiology/Speech
Hasbro Childrens Hospital
593 Dudley St
(401) 444-5485

RHODE ISLAND DEPARTMENT OF HEALTH

** please verify audiological assessment coverage with your health insurance*

Rhode Island Early Intervention

EI Agencies Working with Children who are Deaf or Hard of Hearing and Their Families

Rhode Island's Early Intervention (EI) providers are working to meet the needs of children who are deaf or hard of hearing and their families. The providers listed below have staff with experience in supporting the unique needs of children who are deaf or hard of hearing. They understand the importance of early language development with an emphasis on each child's unique strengths and needs. They work closely with our community partners to provide your child with a well-rounded team of professionals. Our EI providers encourage and support families in the exploration of all communication opportunities for their child and family,

If your child has been identified with any degree of hearing loss, contact one of these Early Intervention programs today.[1]

Family Service of RI
134 Thurbers Avenue
Providence, RI 02905-4754
Ph. 331-1350, Fax. 277-3388
Referral line. 519-2307
Referral line for Spanish speaking families. 519-2308

Looking Upwards, Inc.
2974 East Main Road
Portsmouth, RI 02871
Mailing Address: PO Box 838
Portsmouth, RI 02871
Ph. 293-5790, Fax. 293-5796

Meeting Street
1000 Eddy Street
Providence, RI 02905
Ph. 533-9100, Fax. 533-9105
Referral line. 533-9104

Seven Hills Rhode Island
178 Norwood Ave.
Cranston, RI 02905
Ph. 921-1470, Fax. 762- 0837

Seven Hills Rhode Island
30 Cumberland Street
Woonsocket, RI 02895
Ph. 921-1470, Fax. 762- 0837

[1] Each EI agency covers a range of cities and towns. If you reach out to a program who does not provide services in your area, they will gladly help you reach one that does.

Rhode Island Early Intervention Providers

Children's Friend
621 Dexter Street
Central Falls, RI 02863-2603
Ph. 721-9200
Fax. 729-0010
Director: Natalie Redfearn Ph. 721-9294
Supervisor: Elizabeth Lanni Ph.752-7834
Supervisor: Joshua Wizer-Vecchi Ph. 721-9249
Supervisor: Christine Crohan Ph.721-9229
Parent Consultant: Open

Community Care Alliance
8 Court Street
Mailing Address: PO Box 1700
Woonsocket, RI 02895
Referral Line: 235-6029
Ph. 235-7000, Fax. 767-4099
Director: Darlene Magaw Ph. 767-4078
Program Manager: Linda Majewski Ph. 235-6026
Supervisor: Katie Hardenbergh Ph. 235-6028
Supervisor: Alyssa Parlee Ph. 235-6076
Parent Consultant: Denise Bouley Ph. 235-6012

Easter Seals
320 Phillips St. Unit D # 103
North Kingstown RI 02852.
Ph. 284-1000, Fax. 284-1006
Director: Sue Hawkes x11
Supervisor: Tara Kiernan-Downey x12
Parent Consultant: Open

Family Service of RI
134 Thurbers Avenue
Providence, RI 02905-4754
Ph. 331-1350, Fax. 277-3388
Referral line: 519-2307
Referral line for Spanish speaking families: 519-2308
Director: Randi Walsh x3358
Supervisor: Monique DeRoche x3343
Supervisor: Jamie Simone Ph. 301-9332
Parent Consultant: Carey Fudge Ph. 378-6772

Groden Center Early Intervention
610 Manton Ave.
Providence, RI 02909
Ph. 525-2380, Fax. 525-2382
Director: Leslie Weidenman
Program Manager: Carol LaFrance
Parent Consultant: Lynette Kapinsow Ph. 680-3202

Looking Upwards, Inc.
2974 East Main Road
Portsmouth, RI 02871
Mailing Address: PO Box 838
Portsmouth, RI 02871
Ph. 293-5790, Fax. 293-5796
Director: A. Valory McHugh x330
Supervisor: Carolyn Souza x310
Supervisor: Celeste Whitehouse x324
Parent Consultant: Martha Costa Ph. 603-8135

Meeting Street
1000 Eddy Street
Providence, RI 02905
Ph. 533-9100, Fax. 533-9105
Referral line: 533-9104
Assistant Director: Amanda Silva Ph. 533-9172
Supervisor: Jennifer Demello Ph. 533-9210
Supervisor: Antonio Martins Ph. 533-9261
Supervisor: Courtney Moran Ph. 261-4073
Parent Consultant: Pamela Donor Ph. 302-2802

Seven Hills Rhode Island
178 Norwood Ave.
Cranston, RI 02905
Ph. 921-1470, Fax. 762- 0837
Director: Laurie Farrell x7206
Supervisor: Amanda Hall x 7214
Supervisor: Caitlyn Mercer Ph. 309-6996
Parent Consultant : Stephanie Trafka Ph. 465-4958

Seven Hills Rhode Island
68 Cumberland Street
Woonsocket, RI 02895
Ph. 921-1470, Fax. 762- 0837

J. Arthur Trudeau Memorial Center
3445 Post Road
Warwick, RI 02886
Ph. 823-1731, Fax. 823-1849
Director: Jacqueline Ferreira x 268
Supervisor: Kate Donaldson x 234
Supervisor: Monica Arnold x 264
Supervisor: Roberta Judge x208
Parent Consultant: Arynne Palmisciano Ph. 302-0932

Early Intervention Lead Agency
Executive Office of Health and Human Services
3 West Road, Virks Building #325i
Cranston, RI 02920
Part C Coordinator: Jennifer Kaufman Ph. 462-3425

All phone numbers are area code (401)

Rev.10.23.19

Rhode Island Early Intervention Providers

Children's Friend
621 Dexter Street
Central Falls, RI 02863-2603
Ph. 721-9200
Fax. 729-0010
Director: Natalie Redfearn Ph. 721-9294
Supervisor: Christine Crohan Ph.721-9229
Supervisor: Kristyn Gontarek Ph. 721-9211
Supervisor: Elizabeth Lanni Ph.752-7834
Parent Consultant: Open

Community Care Alliance
8 Court Street
Mailing Address: PO Box 1700
Woonsocket, RI 02895
Referral Line: 235-6029
Ph. 235-7000, Fax. 767-4099
Director: Darlene Magaw Ph. 767-4078
Program Manager: Linda Majewski Ph. 235-6026
Supervisor: Katie Hardenbergh Ph. 235-6028
Supervisor: Alyssa Parlee Ph. 235-6076
Parent Consultant: Denise Bouley Ph. 235-6012

Easter Seals, RI
213 Robinson Street
Wakefield, RI 02879
Ph. 284-1000, Fax. 284-1006
Director: Sue Hawkes x11
Supervisor: Tara McGarty x12
Parent Consultant: Kellie Gaunya Ph. 578-1363

Family Service of RI
134 Thurbers Avenue
Providence, RI 02905-4754
Ph. 331-1350, Fax. 277-3388
Referral line. 519-2307
Referral line for Spanish speaking families. 519-2308
Director: Randi Walsh x3358
Supervisor: Monique DeRoche x3343
Supervisor: Rebecca Collins-Hughes x3353
Parent Consultant: Open

Groden Center Early Intervention
203 Concord Street, Suite 335
Pawtucket, RI 02860
Ph. 525-2380, Fax. 525-2382
Director: Leslie Weidenman
Program Manager: Carol LaFrance
Parent Consultant: Lynette Kapinsow Ph. 680-3202

Looking Upwards, Inc.
2974 East Main Road
Portsmouth, RI 02871
Mailing Address: PO Box 838
Portsmouth, RI 02871
Ph. 293-5790, Fax. 293-5796
Director: A. Valory McHugh x330
Supervisor: Carolyn Souza x310
Supervisor: Celeste Whitehouse x324
Parent Consultant: Martha Costa Ph. 603-8135

Meeting Street
1000 Eddy Street
Providence, RI 02905
Ph. 533-9100, Fax. 533-9105
Referral line. 533-9104
Assistant Director: Amanda Boisvert Ph. 533-9172
Supervisor: Nicole Constantino Ph. 533-9168
Supervisor: Jennifer Demello Ph. 533-9210
Supervisor: Antonio Martins Ph. 533-9261
Supervisor: Courtney Moran Ph. 261-4073
Parent Consultant: Pamela Donor Ph. 302-2802
Parent Consultant: Shantia Espinal De Moya Ph.602-9116

Seven Hills Rhode Island
178 Norwood Ave.
Cranston, RI 02905
Ph. 921-1470, Fax. 762- 0837
Director: Laurie Farrell x7206
Supervisor: Lynne Gilpatrick x7213
Supervisor: Amanda Hall x 7214
Parent Consultant : Stephanie Trafka Ph. 465-4958

Seven Hills Rhode Island
30 Cumberland Street
Woonsocket, RI 02895
Ph. 921-1470, Fax. 762- 0837

J. Arthur Trudeau Memorial Center
3445 Post Road
Warwick, RI 02886
Ph. 823-1731, Fax. 823-1849
Director: Jacqueline Ferreira x 268
Supervisor: Kate Donaldson x 234
Supervisor: Danielle Stewart x 234
Supervisor: Roberta Judge x208
Parent Consultant: Kelly Fantozzi Ph. 477-6544

Early Intervention Lead Agency
Executive Office of Health and Human Services
3 West Road, Virks Building #325i
Cranston, RI 0292
Part C Coordinator: Jennifer Kaufman Ph. 462-3425

All phone numbers are area code (401) ***Rev. 3.15.18***

Massachusetts Department of Public Health
Universal Newborn Hearing Screening Program
Approved Audiological Diagnostic Centers

Babies who do not pass their hearing screening must be given an appointment at one of the following centers:

Audiology and Hearing Solutions, Inc.
955 Main St., Suite 306
Winchester, MA 01890
(781) 218-2225

Baystate Medical Center
Rehabilitation Services/Audiology
360 Birnie Avenue
Springfield, MA 01107
(413) 794-5600 option 3 Voice

Berkshire Medical Center
510 North Street
Suite 6, Room 202
Pittsfield, MA 01201
(413) 447-2225 Voice

Beverly Hospital
Center for Communication Disorders
75 Herrick Street
Beverly, MA 01915
(978) 816-2690 Voice

Boston Children's Hospital, Boston
Audiology Program
333 Longwood Avenue, 3rd Floor
Boston, MA 02115
(617) 355-6462 Voice
(617) 730-4634 Fax

Boston Children's at North Dartmouth
Audiology Program
500 Faunce Corner Road
North Dartmouth, MA 02747
(617) 355-6462 Voice
(617) 730-4634 Fax

Boston Children's at Lexington
Audiology Program
482 Bedford Street
Lexington, MA 02420
(617) 355-6462 Voice
(617) 730-4634 Fax

Boston Children's at Peabody
Audiology Program
10 Centennial Drive
Peabody, MA 01960
(617) 355-6462 Voice
(617) 730-4634 Fax

Boston Children's at Waltham
Audiology Program
9 Hope Avenue
Waltham, MA 02453
(617) 355-6462 Voice
(617) 730-4634 Fax

Boston Children's Physicians Weymouth
Audiology Program
541 Main Street
Weymouth, MA 02190
(617) 355-6462 Voice
(617) 730-4634 Fax

Boston Medical Center
Daniels Hearing Center
J. Joseph Moakley Bldg., Otolaryngology 830 Harrison Avenue, Suite 1400
Boston, MA 02118
(617) 414-4901 Voice

Charlton Memorial Hospital
Southcoast Rehabilitation Services
235 Hanover Street
Fall River, MA 02720
(508) 973-9470 Voice

Franciscan Children's
Speech/Language-Hearing Department
30 Warren Street
Boston, MA 02135
(617) 254-3800 x5220 Voice

Harvard Vanguard Medical Center, Kenmore Center
Audiology
133 Brookline Avenue
Boston, MA 02215
(617) 421-5984 Voice

Massachusetts Eye and Ear, Boston
Audiology Department
243 Charles Street
Boston, MA 02114
(617) 573-3266 Voice

Massachusetts Eye and Ear, Concord
54 Baker Avenue Extension, Suite 303
Concord, MA 01742
(978) 369-8780 Voice

Morton Hospital, A Steward Family Hospital
Speech, Hearing & Language Center
Northwoods Medical Center
2007 Bay Street, Suite B-100
Taunton, MA 02780
(508) 823-3050 Voice

St. Elizabeth's Medical Center
Audiology Services
736 Cambridge Street, SMC 8
Brighton, MA 02135
(617) 789-5004 Voice

Spaulding Outpatient Center for Children Salem
Audiology
Shetland Park Suite 211
35 Congress Street
Salem, MA 01970
(978) 825-8800 Voice

The Learning Center for the Deaf
Audiology Unit
848 Central Street
Framingham, MA 01701
(508) 875-4559 Voice

Tufts Medical Center
Department of Speech Language Pathology and Audiology
860 Washington Street
Box 823
Boston, MA 02215
(617) 636-5300 Voice

UMass Memorial Health Alliance-Clinton Hospital, Burbank Campus
Speech & Hearing
275 Nichols Road
Fitchburg, MA 01420
(978) 466-2660 Voice

UMass Memorial Medical Center
Dept. of Audiology
University Campus
55 Lake Avenue North
Worcester, MA 01655
(508) 856-3996 Voice

Hearing testing for babies who are older than six months is also available at these centers:

Baystate Rehabilitation Care at Franklin Medical Center
48 Sanderson Street
Greenfield, MA 01301
(413) 773-2227 Voice

Clarke Schools for Hearing and Speech
Clarke Hearing Center
45 Round Hill Road
Northampton, MA 01060
(413) 582-1114 Voice

Harvard Vanguard Medical Center, Quincy Center
Audiology
President's Place - South Tower
1250 Hancock Street
Quincy, MA 02169-4339
(617) 774-0750 Voice

Harvard Vanguard Medical Center, Wellesley Center
Audiology
230 Worcester Street
Wellesley, MA 02181-5491
(781) 431-5255 Voice

Holyoke Medical Center
Speech and Hearing Center
575 Beech Street
Holyoke, MA 01040
(413) 534-2508 Voice

Massachusetts Eye and Ear, East Bridgewater
400 North Bedford Street, Suite 100
East Bridgewater, MA 02333
(508) 350-2800 Voice

Massachusetts Eye and Ear, Longwood
800 Huntington Avenue, First Floor
Boston, MA 02115
(617) 936-6160 Voice

Massachusetts Eye and Ear, Mashpee
5 Industrial Drive, Suite 202
Mashpee, MA 02649
(508) 539-2444

Massachusetts Eye and Ear, Medford
101 Main Street, Suite 211
Medford, MA 02155
(781) 874-1965 Voice

Massachusetts Eye and Ear, Stoneham
One Montvale Avenue, Suite 203
Stoneham, MA 02180
(617) 573-5630 Voice

Massachusetts Eye and Ear, Stoneham
41 Montvale Avenue
Stoneham, MA 02180
(781) 729-0971 Voice

Massachusetts Eye and Ear, Newton-Wellesley
2000 Washington Street, Suite 668
Newton, MA 02462
(617) 573-6850 Voice

Massachusetts Eye and Ear Wellesley
65 Walnut Street, Suite 590
Wellesley, MA 02481
(617) 630-1699 Voice

Spaulding Rehabilitation Hospital Cape Cod
Audiology
311 Service Road
East Sandwich, MA 02537
(508) 833-4141 Voice

Massachusetts Department of Public Health
Universal Newborn Hearing Screening Program

Available centers for newborn hearing screening referrals by region:

Boston Metro

Boston Children's Hospital, Boston
Boston, (617) 355-6462
Boston Children's at Lexington
Lexington, (617) 355-6462
Boston Children's at Waltham
Waltham, (617) 355-6462
Boston Children's Physicians Weymouth
Weymouth, (617) 355-6462
Boston Medical Center
Boston, (617) 414-4901
Franciscan Children's
Boston, (617) 254-3800 x5220
Harvard Vanguard Medical Center, Kenmore Center
Boston, (617) 421-5984
Massachusetts Eye and Ear, Boston
Boston, (617) 573-3266
Massachusetts Eye and Ear, Concord
Concord, (978) 369-8780
St. Elizabeth's Medical Center
Brighton, (617) 789-5004
Tufts Medical Center
Boston, (617) 636-5300

Central

The Learning Center for the Deaf
Framingham, (508) 875-4559
UMass Memorial Medical Center
Worcester, (508) 856-3996
UMass Memorial Health Alliance-Clinton Hospital, Burbank Campus
Fitchburg, (978) 466-2660

Northeast

Audiology and Hearing Solutions, Inc.
Winchester, (781) 218-2225
Beverly Hospital
Beverly, (978) 816-2690
Boston Children's at Peabody
Peabody, (617) 355-6462
Spaulding Outpatient Center for Children Salem
Salem, (978) 825-8800

Southeast

Boston Children's at North Dartmouth
North Dartmouth, (617) 355-6462
Charlton Memorial Hospital
Fall River, (508) 973-9470
Morton Hospital, A Steward Family Hospital
Taunton, (508) 823-3050

Western

Baystate Medical Center
Springfield, (413) 794-5600 option 3
Berkshire Medical Center
Pittsfield, (413) 447-2225