

A smiling male pediatrician with glasses and a beard, wearing a white lab coat over a light blue shirt and a purple and white striped tie. He has a green stethoscope around his neck and is holding a baby. The baby is looking towards the camera. The background is a bright, clinical setting.

The First 1,000 Days

A Pocket Reference Guide to Early
Screenings and Follow-Up for
Pediatric Health Care Providers



Early Screenings and Follow-Up For Pediatric Patients Within Their First 1,000 Days

Thank you for partnering with EmblemHealth.

EmblemHealth is committed to increasing the quality and efficiency of pediatric screenings for children within their first 1,000 days of life – between the ages of 0 and 3. It is critical that screenings begin early, and are followed up appropriately, when children are most at risk.

We have developed this reference guide to support identification, prevention, diagnosis, treatment, and intervention for the following high-risk areas:

- Lead screening
- Newborn hearing loss
- Developmental screening

Early screening for these conditions is critical to growth and healthy development in children.

We hope you find this reference guide useful in helping you keep your EmblemHealth patients on track to live their healthiest lives!



Table of Contents:

Lead Screening	Page 3
Newborn Hearing Loss.....	Page 9
Developmental Screening.....	Page 15
Resources for Health Care Providers.....	Page 20

Lead Screening

Childhood lead poisoning occurs when a child is exposed to lead during their most vulnerable years, **between the ages of 9 and 36 months old**. It is **100% preventable**. The long-term effects caused by lead exposure can be prevented through timely screenings and interventions.

Health care providers are required by New York State Public Health Law and Regulations to:

- Test the Blood Lead Levels (BLLs) of all children **twice** before they turn 36 months old:
 - **1-year-old test** between 9 and 18 months old.
 - **2-year-old test** between 18 and 36 months old.
- Assess all children between the ages of 6 months and 6 years old for lead exposure during every well-child visit, and **test those at risk**.
- Provide guidance to all caregivers of children younger than 6 years old on ways to protect their children from lead exposure and how to prevent lead poisoning.

Screening for lead exposure

Blood lead testing is the best, and most readily available, way to measure BLLs in children. It is also the single most essential safety net for children who may have already been exposed to lead (Centers for Disease Control and Prevention, 2019).

A “fingerstick” capillary specimen is typical for testing BLLs. However, the **New York State Department of Health (NYSDOH) recommends** using a “venipuncture” venous specimen to **confirm BLLs** in cases where:

- Results show an elevated capillary BLL (BLLs ≥ 5 mcg/dL).

A risk assessment can help determine whether a child is being exposed to lead. The NYSDOH recommends using the following **Lead Exposure Risk Assessment Questions** in your practice, as part of a routine well-care visit for all children younger than 6 years old.

Lead Exposure Risk Assessment Questions*

1. Does your child live in, or regularly visit, an older home/building with peeling or chipping paint, or with recent or ongoing renovation or remodeling?

- Lead-based paint has been banned for residential use in New York City since 1960. Older buildings may have lead-based paint under new paint. Examples may include your home, child's day care, preschool, school, or another relative's home.

2. Has your child spent any time outside the U.S. in the past year?

3. Does your child have a sibling, housemate/playmate with an elevated blood lead level and your child has not been tested for lead poisoning?

4. Does your child have developmental disabilities and/or exhibit behaviors that puts him/her at higher risk for lead exposure?

- Young children and children with developmental disabilities (autism spectrum disorder and Down syndrome) may have behaviors that place them at higher risk for lead exposure. These may include: pica; putting nonfood items (e.g., fingers, toys, jewelry, keys, or soil) in their mouth; mouthing painted surfaces; any behaviors that disturb painted surfaces.

5. Does your child frequently come in contact with an adult whose job or hobby involves exposure to lead?

- e.g., house painting, plumbing, renovation, construction, auto repair, welding, electronics repair, battery recycling, lead smelting, jewelry, stained glass or pottery making, fishing (weights), making or shooting firearms, or collecting lead or pewter figurines.

6. Does your family use traditional medicine, health remedies, cosmetics, powders, spices, or food from other countries?

- More information is available at: [cdc.gov/nceh/lead/tips/sources.htm](https://www.cdc.gov/nceh/lead/tips/sources.htm).

*Adapted from the *New York State Department of Health Guidelines for the Identification and Management of Lead Exposure in Children*.

Recommendations for managing BLLs. According to the Centers for Disease Control and Prevention (CDC), there is no safe BLL. Even the lowest levels of lead (below 5 mcg/dL) have shown to decrease cognitive function (impacting IQ and academic achievement), affect the ability to pay attention, and increase hyperactivity in children less than 6 years old.

A patient may not show any clinical signs of lead poisoning; however, a child with higher levels of lead exposure can present with anemia, abdominal pain, vomiting, seizures, symptoms of encephalopathy, hypertension, or kidney problems that can lead to organ damage and death. (NYCDOH, 2019).



Recommendations for Lead Exposure Testing and Follow-Up Care at Various BLLs:

Blood Lead Levels (BLLs)	Recommendations
<p><5 mcg/dL</p>	<ul style="list-style-type: none"> • Review and discuss the test results with your patient’s family. <ul style="list-style-type: none"> – Note: The average BLL for children between 1 and 5 years old is approximately 1.4 mcg/dL. • Perform routine health care and nutritional assessment to include the risk of iron, calcium, and vitamin C deficiencies. • Provide guidance on the prevention of lead exposure from common sources like paint in homes built prior to 1978, soil, dust from scraped or sanded paint, ingesting water flowing through lead pipes, adult work environments (plumbing, welding, construction, etc.), and some cookware.
<p>5 to <25 mcg/dL</p>	<ul style="list-style-type: none"> • Retest venous BLL every 1 to 3 months until BLLs are confirmed below 5mcg/dL: <ul style="list-style-type: none"> – Note: A venous specimen is more accurate than a fingerstick specimen. – A confirmatory venous test is required within 1 to 2 weeks if a fingerstick specimen resulted in BLLs 5 to <45. • Follow recommendations for BLL <5 mcg/dL. • Perform Clinical Lead Exposure Assessment, including an environmental history, to identify possible sources of lead and advise on reducing/eliminating exposures. • Provide nutritional counseling; encourage the consumption of iron-rich foods, which may decrease the gastrointestinal absorption of lead.
<p>25 to <45 mcg/dL</p>	<p>Follow recommendations for BLL 5 to <25 mcg/dL.</p> <ul style="list-style-type: none"> • Re-test venous BLL as soon as possible, but no later than 48 hours. • Provide evaluation for iron deficiency anemia. • Nutritional deficiencies in iron, calcium, and zinc can promote lead absorption, and worsen neurotoxicity due to common absorptive properties (AAP, 2013).
<p>45 to <70 mcg/dL</p>	<p>Follow recommendations for BLL 25 to <45 mcg/dL.</p> <ul style="list-style-type: none"> • Re-test venous BLL as soon as possible, but no later than 24 hours. • Consult with Regional Lead Resource Center within 24 hours to discuss hospitalization and/or chelation therapy based on the NYCDOH “Recommended Chelation Protocol for Children with BLLs ≥45” <ul style="list-style-type: none"> – BLLs greater than 70 is a medical emergency. Confirm immediately with a venous test.

*Adapted from the New York City Department of Health and Mental Hygiene Guidelines for Health Care Providers *Lead Exposure in Children*, 2019.

Follow-Up

- The NYSDOH requires that all children be tested at **1 year old and again at 2 years old**, regardless of initial results.
- Assess risk at the next well-child visit.
- **Repeat blood lead test if the child is high risk** or their risk level has changed, based on your assessment.

Coordinate care with local or state health department including environmental education and management.

- Consult with a Regional Lead Resource Center (RLRC) on frequency of follow-up for testing children with previously elevated BLLs: health.ny.gov/environmental/lead/resource_centers.htm.

Child may be at risk for developmental and behavioral problems.

Consider consulting with a Regional Lead Resource Center

- **An abdominal x-ray should be considered** if ingestion of paint chips or other particles of lead is suspected and/or has been confirmed by caregiver.
- Structured developmental screenings and evaluations should be performed.

The NYCDOH “Recommended Chelation Protocol for Children with BLLs ≥ 45 ”:
www1.nyc.gov/assets/doh/downloads/pdf/lead/lead-chelation.pdf.

- Notify NYCDOH or NYSDOH within 24 hours for environmental investigation and follow-up services.
- NYCDOH should inspect the home before the child is discharged back to their home.
- Additional resource available on weekends: Poison Control Center: **212-POISONS (212-764-7667)**.



Newborn Hearing Loss

Hearing loss has significant negative effects on the cognitive, language, speech, auditory, social-emotional, and academic development of infants and children. (American Academy of Pediatrics – AAP, 2019). That's why it is important to identify and treat hearing loss early.

Health care providers are asked to:

- **Follow the Early Hearing, Detection, and Intervention (EHDI) 1-3-6 Guidelines**, which promote the timely screening and reporting of all newborn hearing screening results according to state laws and regulations. **The New York State EHDI (NY EHDI) program recommends:**
 - Screening by **1-month** of age.
 - Diagnosis of hearing loss by **3 months** old (audiologic evaluation).
 - Early intervention (EI) services by **6 months** old.

Perform screenings for hearing loss:

- Hearing screening should be conducted, and hearing loss identified, as quickly as possible after birth.
- The most common screening methods for babies are:
 - **Otoacoustic Emissions (OAE):** This method is optimal for screening infants and toddlers for hearing loss because it is portable and does not require a behavioral response. OAE is also very effective in identifying mild, as well as severe, bilateral hearing loss in children.
 - **Auditory Brainstem Response (ABR):** Tests how the cochlea (inner ear) and brain pathways work by recording brain wave activities in response to soft sounds played through a headphone.

Recommendations for hearing testing and follow-up care:

Hearing Screening	Recommendations
Newborn	<ul style="list-style-type: none"> All maternity hospitals and birthing centers are required by New York State (NYS) Public Health Law to administer newborn hearing screening and provide parents with the results. If a baby did not pass the initial newborn hearing screening, they may be re-screened prior to discharge. (<i>New York State Department of Health, 2019</i>)
1 month	<p>All babies should be screened for hearing loss by 1 month old, regardless of their newborn hearing test results (pass or fail).</p> <ul style="list-style-type: none"> If a baby did not pass their newborn hearing test, they may be referred to your practice for re-screening. Discuss the test results with parents and provide follow-up options as needed. Hearing screening follow-up should be documented in the patient’s medical record. <p>Note: Newborn screening results may be obtained through Secure Remote Viewer (SRV) via the Health Commerce System (HCS), or by calling 518-473-7552 for preliminary results (NYSDOH, 2019).</p>
3 months	<p>Newborn hearing loss must be diagnosed by 3 months old.</p> <ul style="list-style-type: none"> Review the results of your patient’s audiological evaluation with their caregiver and make recommendations as necessary. Discuss possible causes of hearing loss with your patient’s caregiver and provide treatment and intervention follow-up options as needed. Treatment and intervention for children at risk for hearing loss may include close monitoring, and follow-ups (CDC, 2019).
6 months	<p>Babies diagnosed with hearing loss should be referred for treatment and intervention by 6 months old.</p> <ul style="list-style-type: none"> Babies that are diagnosed with hearing loss may be at risk for developmental delays. Early Intervention (Part C) services are available for children from 0 to 36 months old through the Individuals with Disabilities Education Improvement Act 2004 (IDEA 2004). Discuss treatment and intervention with your patient’s caregiver and provide follow-up options as necessary.

Follow-up

If re-screening does not occur prior to discharge, or a baby does not pass re-screening, a prescription for an outpatient screening will be given to the parents of that child.

As an EmblemHealth provider, you may re-screen a patient with a referral.

Note: A complete screening on both ears is recommended for re-screening, even if only one ear failed the initial screening (AAP, 2007).

If baby did not pass the 1-month hearing screening:

- A full diagnostic/audiological evaluation by a pediatric audiologist is required as soon as possible.
- Provide a referral to your patient's caregiver; assist with scheduling as needed.

If baby passes the 1-month screening:

- Remind parents that it is important to check their baby's hearing often.
- Parents may be referred to the NYSDOH website at health.ny.gov to access materials on newborn hearing.

If baby did not pass the audiological evaluation:

- Federal guidelines mandate that once any degree of hearing loss is diagnosed in a child, a referral should be initiated to an Early Intervention Program within 2 days of confirmation of hearing loss (AAP, 2019).
- An evaluation by an ophthalmologist should be conducted for every infant with a confirmed hearing loss to document visual acuity and rule out related or late-onset vision disorders such as Usher syndrome (AAP, 2019).
- Referrals to other medical subspecialists, including developmental pediatricians, neurologists, cardiologists, and nephrologists, should be facilitated and coordinated by the primary health care professional (AAP, 2019).

Early Intervention Services sources for referral and follow-up:

- **New York State Department of Health, Early Hearing Detection and Intervention Program (NY EHDl):**
518-474-5110 (*Follow-up Coordinator*)
- **Local Early Intervention Program (EIP):**
Growing Up Healthy
800-522-5006
TTY: **800-655-1789**
In New York City, call **311**

Early identification of hearing loss

There are serious developmental problems associated with untreated hearing loss. Early identification is important to prevent these issues, especially for:

- Children who were not tested for newborn hearing loss.
- Children who do not receive follow-up after failing a newborn hearing screening.
- Children with later onset hearing loss.

The following chart about early childhood hearing loss summarizes facts, causes, risk factors, and recommendations for follow-up from the Joint Committee on Infant Hearing (JCIH).

Early Childhood Hearing Loss Summary	
Facts	<ul style="list-style-type: none">• A child who has passed their newborn hearing screening may demonstrate signs of permanent hearing loss later.• Infants with specific risk factors, such as those who received Extracorporeal Membrane Oxygenation (ECMO) therapy and those with Cytomegalovirus (CMV) infection, are at increased risk of delayed-onset or progressive hearing loss.• About 30% to 40% of children with confirmed hearing loss will demonstrate signs of developmental delays or other disabilities.
Causes	<ul style="list-style-type: none">• Otitis media with effusion (OME) is fluid in the middle ear without signs or symptoms of acute ear infection.• Acute Otitis Media (AOM), usually lasting two to three weeks, is a middle ear infection of recent onset with symptoms and signs of infection such as fever, pain, and irritability.• OME may occur spontaneously due to eustachian tube dysfunction or as an inflammatory response to AOM.• Middle ear effusion may account for more than 90% of all middle ear pathology in children (Brooks, 1978).

Early Childhood Hearing Loss Summary

Risk indicators

- **Caregiver concern** regarding hearing, speech, language, or developmental delay.
- **Family history** of permanent childhood hearing loss.
- **Neonatal intensive care** stay of more than 5 days or any of the following regardless of length of stay: ECMO, assisted ventilation, exposure to ototoxic medications (gentimycin and tobramycin) or loop diuretics (furosemide/Lasix), and hyperbilirubinemia that requires exchange transfusion.
- **In utero infections**, such as CMV, herpes, rubella, syphilis, and toxoplasmosis.
- **Craniofacial anomalies**, including those that involve the pinna, ear canal, ear tags, ear pits, and temporal bone anomalies.
- **Physical findings**, such as white forelock, that are associated with a syndrome known to include a sensorineural or permanent conductive hearing loss.
- **Syndromes associated with hearing loss** or progressive or late-onset hearing loss, such as neurofibromatosis, osteopetrosis, and Usher syndrome.
- **Neurodegenerative disorders**, such as Hunter syndrome, or sensory motor neuropathies, such as Friedreich ataxia and Charcot-Marie-Tooth syndrome.
- **Culture-positive postnatal infections** associated with sensorineural hearing loss, including confirmed bacterial and viral (especially herpes viruses and varicella) meningitis.
- **Head trauma**, especially basal skull/temporal bone fracture requiring hospitalization.
- **Chemotherapy**.

Early Childhood Hearing Loss Summary

Recommendations

- Review every infant's medical and family history for risk indicators of delayed-onset or progressive hearing loss that require monitoring.
- Ensure that an audiological evaluation is completed for all children with a risk indicator for hearing loss at least once by 24 to 30 months of age, regardless of their newborn screening results.
- Closely monitor developmental milestones and initiate referrals related to suspected disabilities.
- Ongoing surveillance of parent concerns about language and hearing, auditory skills, and developmental milestones of all infants and children regardless of risk status, as outlined in the pediatric periodicity schedule published by the American Academy of Pediatrics (AAP).

*Adapted from the *Year 2007 Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs*, JCIH, AAP 2007.



Developmental Screening

One in every four children is at risk for a developmental delay. Preterm birth, low birthweight, untreated hearing loss, and lead poisoning can contribute to developmental disorders in children. The early identification of developmental disorders (or delays in meeting developmental milestones) is critical to the social, emotional, language, cognitive, and physical health of a child (AAP, 2007 and CDC, 2019).

Universal early childhood screening provides an opportunity to identify delays early and intervene during the most critical period of development (AAP, 2019).

Screening for developmental disorders

According to the **AAP**, the identification of developmental delays and disorders in children should spur further developmental and/or medical evaluation, diagnosis, treatment, and early intervention services. **The AAP recommends:**

- **Routine developmental surveillance** at every well-child visit.
- **Standard developmental screening** using a standardized tool at **9 months, 18 months, and 24 to 30 months of age.**
- **Screening for autism spectrum disorder (ASD)** at ages 18 months and 24 to 30 months.

Routine developmental surveillance is the monitoring of a child's progress in meeting key developmental milestones to identify any concerns early. This can be done by parents, caregivers, and the primary health care doctor.

Standard developmental screening is the formal testing of a child’s motor, cognitive, language, and social-emotional skills, at **9 months, 18 months, and 24 to 30 months** of age, and requires the use of an evidence-based standardized screening tool.

- **Ages & Stages Questionnaires® (ASQ-3™)** is the most common research-based screening tool used today by practices. It provides a series of questions to be answered by parents about their child’s physical ability, and social, communication, and problem-solving skills.
- **Modified Checklist for Autism in Toddlers, Revised, with Follow-Up (M-CHAT – R/F)™** is used to assess the risk for ASD. This tool is also reported by the parent/caregiver and interpreted by the primary care doctor.

Recommendations for developmental screenings and follow-up care:

Developmental Screening	Recommendations
9 months	<p>Perform routine health care for 9-month-old well-child visit to include:</p> <ul style="list-style-type: none"> • Measurements (i.e., BMI, length, weight). • Physical examination. • Oral health. • Sensory screening: Risk assessments for hearing and vision. • Procedural: Immunizations as needed and risk assessment for lead exposure.* • Developmental Screening: <ul style="list-style-type: none"> – Score and review results of ASQ-3™ questionnaire with patient’s caregiver. – Perform psychosocial/behavioral assessment. <p>*Note: 1-year-old lead screening may be performed between 9 and 18 months old.</p>

In preparation for standardized developmental screening:

- The primary care doctor can choose the age-appropriate **ASQ-3™ questionnaire** and give to the parents/caregivers to complete at home and return it at the scheduled 9, 18, or 24 to 30 months well-visit for their child.
- The option for parents/caregivers to complete the ASQ-3™ questionnaire is also available online at easterseals.com/mtffc/.
- The **(M-CHAT – R/F)™** can also be accessed online at mchatscreen.com.
- Additional screening tools are available for use by providers, and can be found at cdc.gov/ncbddd/childdevelopment/screening-hcp.html.

Follow-up

Provide ASQ-3™ 18-month questionnaire to parent/caregiver in preparation for the next formal developmental screening (18-month well-child visit). Find it at agesandstages.com.

If there is potential for developmental delays:

- A thorough assessment and medical exam can identify underlying medical conditions that may be related and need to be treated.
- Primary care doctor should monitor patient using the **ASQ:SE™**, which tests social-emotional development and is administered in 6-month increments.

Information and resources to support parents/caregivers:

- Primary care doctor can provide milestone checklists to parents.
- Recommend that parents download the CDC's Milestone Tracker App and review more resources at cdc.gov/ActEarly.

Developmental Screening	Recommendations
18 months	<p>Perform routine health care for 18-month-old well-child visit to include:</p> <ul style="list-style-type: none"> • Measurements. • Physical examination. • Oral health: Risk assessment with appropriate action to follow. • Sensory screening: Risk assessments for hearing and vision. • Procedural: Immunizations as needed and risk assessment for anemia and lead exposure.* • Developmental Screening: <ul style="list-style-type: none"> – Score and review results of ASQ-3™ questionnaire with patient’s caregiver. – Perform M-CHAT-R screening for ASD. – Perform psychosocial/behavioral assessment. <p>*Note: 2-year-old lead screening may be performed between 18 and 36 months old.</p>
24 to 30 months	<p>Perform routine health care for 24- to 30-month-old well-child visit to include:</p> <ul style="list-style-type: none"> • Measurements. • Physical examination. • Oral health: Risk assessment with appropriate action to follow. • Sensory screening: Risk assessments for hearing and vision. • Procedural: Immunizations as needed and risk assessment for anemia, tuberculosis, Dyslipidemia, and lead exposure.* • Developmental Screening: <ul style="list-style-type: none"> – Score and review results of ASQ-3™ questionnaire and ASQ:SE™ with your patient’s caregiver. – Perform M-CHAT-R screening for ASD. – Perform developmental surveillance and psychosocial/behavioral assessment. <p>*Note: 2-year-old lead screening must be completed by 36 months old.</p>

Follow-up

Provide ASQ-3™ 24- to 30-month questionnaire to parent/caregiver in preparation for the next formal developmental screening (24- to 30-month well-child visit). Find it at [agesandstages.com](https://www.agesandstages.com).

If there is potential for developmental delays:

- Monitor patient using the **ASQ:SE™**.
- Perform thorough medical exam to rule out underlying conditions.
- Provide referral to a specialist for diagnostic evaluation and early intervention services. Suggest your patient's caregiver visits [cdc.gov/FindEI](https://www.cdc.gov/FindEI) to learn more.

Provider resources for developmental surveillance and screening:

- Visit [hhs.gov/WatchMeThrive](https://www.hhs.gov/WatchMeThrive) for a provider toolkit and additional resources to support developmental and behavioral screening.

If there is potential for developmental delays:

- Monitor patient using the **ASQ:SE™**.
- Perform thorough medical exam to rule out underlying conditions.
- Provide referral to a specialist for diagnostic evaluation and early intervention services. Suggest your patient's caregiver visits [cdc.gov/FindEI](https://www.cdc.gov/FindEI) to learn more.

Information and resources to support parents/caregivers:

Local early intervention program:

Growing Up Healthy

800-522-5006

TTY: **800-655-1789**

In New York City: Call **311**

Resources for Health Care Providers:

Please refer to the following resources for help with referrals and determining treatment options for your EmblemHealth patients:

American Academy of Pediatrics:

888-227-1782 (Screening); Email: screening@aap.org
screeningtime.org/star-center/#/screening-tools#top

Beacon Health Options Referral/Scheduling:

877-695-9449 (Routine/Urgent Consultations)
beaconhealthoptions.com

Emblem Behavioral Health Services Program:

888-447-2526
emblemhealth.com/providers/manual/behavioral-health-services

New York State Department of Health, Bureau of Early Intervention:

518-473-7016; Email: beipub@health.ny.gov
www1.nyc.gov/site/doh/providers/resources/early-intervention-information-for-providers.page

New York State Department of Health, Early Hearing Detection and Intervention Program (NY EHDI):

518-474-5110 (Follow-up Coordinator)
health.ny.gov/community/infants_children/early_intervention/newborn_hearing_screening/resources_for_providers/

Conducting appropriate screenings for lead exposure, newborn hearing loss, and developmental disorders for your EmblemHealth patients when they are most at risk is good clinical practice. It also reflects quality and cost-effective health care.

Thank you for partnering with us to care for our members.





Group Health Incorporated (GHI), Health Insurance Plan of Greater New York (HIP), HIP Insurance Company of New York and EmblemHealth Services Company, LLC are EmblemHealth companies. EmblemHealth Services Company, LLC provides administrative services to the EmblemHealth companies.