



**Early Hearing Detection
and Intervention Program**

2022

**Congenital
Cytomegalovirus
Screening Guidelines**

November 2022



Targeted Congenital Cytomegalovirus (cCMV) Screening Guidelines Florida Department of Health Florida Newborn Hearing Screening (NBHS) Program

Purpose

To provide guidance and recommendations for procedures on how best to implement targeted cCMV screening as outlined in [Section 383.145](#), Florida Statutes, effective January 1, 2023.

These guidelines include best practices that reflect recommendations beyond minimal standards of care and were developed in collaboration with a diverse multidisciplinary workgroup representing the NBHS Program, the Newborn Screening Program (NBS), audiologists, neonatologists, otolaryngologists, nurses, hospital staff, early interventionists, and parents. Timely targeted CMV screening is one component of a comprehensive approach to the diagnosis and medical management of infants with cCMV. A comprehensive approach should involve a multidisciplinary team including, but not limited to, audiologists, ophthalmologists, neurologists, early intervention providers, and parents.

Use the links throughout the document for additional information and resources to aid in developing cCMV screening procedures.

NBHS Responsibilities

The NBHS Program is committed to support early detection and targeted cCMV screening for newborns who do not pass the newborn hearing screening. The NBHS Program's cCMV-related responsibilities include:

- Provide technical assistance and support to hospitals conducting high quality hearing screens.
 - Technical assistance requests to address hearing screening refer rates over 4% can be made by emailing CMS.NBSHearing@flhealth.gov.
- Provide education to parents and stakeholders on cCMV prevention and screening. cCMV education and resources are available on the [Florida Newborn Screening Website](#) under the Hearing section.
- Receive cCMV screening results submitted through the electronic reporting portal, eReports™, by hospitals and Primary Care Physicians (PCP).
 - eReports™ account requests can be made by completing the [eReports™ Registration Form](#). cCMV screening results must be reported to NBHS Program within seven days of receiving the results.
- Notify PCPs of positive cCMV screening results and provide recommendations for next steps. The NBHS Program can be contacted by calling (866) 289-2037.
- Refer newborns with confirmed cCMV to the Early Steps Program for evaluation, monitoring, and early intervention services. Referrals are made to [Local Early Steps Offices](#).
 - Early Steps provides early intervention services statewide to eligible infants and toddlers from birth to 36-months, with developmental delays, disabilities, and at-risk conditions.
- Conduct follow-up for newborns who do not pass the hearing screen.
 - NBHS Program staff will continue to reach out to PCPs, audiologists, and parents of children who do not pass the hearing screen to encourage additional evaluation and

- diagnosis.
- Specialized follow-up and support are provided to families of children diagnosed with hearing loss.

NBHS Recommendations

The Florida Guidelines for NBHS recommend a repeat inpatient hearing screen when a newborn does not pass the initial inpatient hearing screen in one or both ears. The result of the repeat hearing screen should be reported to the NBHS Program. Information regarding the process for failed hearing screening results can be found in Section five of the [Florida Guidelines for Newborn Hearing Screening](#).

Hospitals that use the initial inpatient hearing screening results to trigger the cCMV screening should test all specimens that are collected and report the results to the NBHS Program, regardless of the results of the repeat inpatient hearing screen.

Hospital and Birthing Facility Responsibilities and Recommendations

Legislation requires hospitals and birthing facilities to perform the following cCMV-related activities:

- Administer a cCMV test approved by the United States Food and Drug Administration or another diagnostically equivalent test on infants who do not pass the hearing screen before the newborn becomes 21 days of age or before discharge, whichever occurs earlier.
- Report cCMV screening results to the NBHS within 7 days after receipt of results.

For hospitals and birthing facilities to implement the legislative requirements for targeted cCMV screening, the facility should develop internal procedures that contemplate the present infrastructure and procedures. Hospitals and birthing facilities should designate a minimum of two hospital employees who are primarily responsible for overseeing or coordinating targeted cCMV screening. The two individuals will act as the primary points of contact between the facility and the NBHS Program and must have access to the state electronic reporting system, eReports™.

Hospitals and birthing facilities should develop internal procedures to operationalize targeted cCMV screening that address the following considerations:

- Identify individuals responsible for conducting cCMV screening.
- Identify which of the two inpatient hearing screens will be used as the trigger for cCMV screening.
- Specimen collection method and documentation.
- Train personnel to conduct cCMV screening and maintenance of training records.
- Reduce delays in cCMV screening and ensure internal compliance, e.g., create standing orders.
- Consider cCMV screening for newborns with prolonged neonatal intensive care (NICU) stays who may not be eligible for hearing screens before 21 days of age.

[A 2014 University of Alabama Study](#) indicated very low birthweight infants with cCMV have higher rates of disability than term infants or uninfected very low birthweight infants. cCMV positive very low birthweight infants had significantly higher rates of sensorineural hearing loss, abnormal neuroimaging, and poor motor outcomes when compared with cCMV negative very low birthweight infants.

- Communicate cCMV screening results to the PCP and parents.
- Develop treatment and medical management recommendations for infants who remain inpatients and who screen positive for cCMV.
- Process for referrals for patients who do not have a PCP due to limited access or income.
- Document cCMV screening results in the birthing hospital medical record.
- Process for reporting cCMV screening results to the NBHS Program through eReports™ within 7 days of receipt of results.

Other considerations for implementation of targeted cCMV screening may include:

- Third-party screening programs that do not have access to electronic medical records may, in some cases, require more coordination to ensure effective and timely communication of hearing screening results to trigger cCMV screening.
- The type of hearing screening equipment used by the facility may impact the hearing screening refer rate. Use of Automated Auditory Brainstem Response screening equipment is associated with a lower refer rate than use of Otoacoustic Emission screening equipment.
- The facility's current hearing screening refer rate will impact cCMV screenings. Two high quality inpatient hearing screens are recommended prior to discharge. Hospitals with a refer/fail rate over 4% should review the current hearing screening process and request technical assistance from the NBHS Program.

Birthing Center and Home Birth Provider Responsibilities and Recommendations

Birthing centers and home birth providers are important partners to ensure newborns born at a birthing center or at home receive a newborn hearing screening and, when necessary, a cCMV screening. Legislation requires birthing centers and home birth providers to refer newborns for outpatient hearing screening within seven days of life. Legislation reduced the timeline for hearing referrals to help ensure that cCMV screening occurs within 21 days of age.

After 21 days of age, it is not possible to determine whether a positive CMV screening is from congenital or acquired CMV.

To help expediate the completion of the newborn hearing screen, birthing centers should refer newborns to a pediatric audiologist or outpatient hearing screening provider prior to discharge. Birthing centers and home birth providers can access [EHDI PALS](#) to assist with making referrals for hearing screening. EHDI PALS is a web-based searchable national directory of pediatric audiologists for children birth to five. Birthing centers and home birth providers can also contact the NBHS Program by calling (866) 289-2037 for additional support in providing referrals for hearing screening.

It is necessary for outpatient hearing screening providers to prioritize conducting newborn hearing screenings well before newborns reach 21 days of age to allow time for the newborns who fail the hearing screening to be screened for cCMV.

Outpatient Hearing Screening Providers Recommendations

Hearing screening providers should develop and implement procedures to expedite reporting of failed newborn hearing screens to the PCP to help ensure the PCP is able to make a referral for cCMV screening to occur before 21 days of age.

PCP Responsibilities and Recommendations

PCPs provide the medical home for the newborns and are essential to ensuring timely cCMV screening for newborns born in birthing facilities and at home who fail the newborn hearing screening. PCPs have the responsibility to provide medical management and coordinate timely referrals for baseline examinations of newborns who screen positive for cCMV. Legislation requires PCPs to:

- Refer newborns born at birthing centers and at home and who fail the newborn hearing screening for a cCMV screening to be completed prior to 21 days of age.
- Report final cCMV screening and diagnostic results to the NBHS Program through the electronic reporting portal, eReports™, within seven days of receipt.

For newborns who screen positive for cCMV, the following steps should be taken:

- Review the results of the cCMV screen and, if necessary, refer the newborn for confirmatory testing.
- Consult with an [Infectious Disease Specialist](#) for recommendations on medical management.
- Communicate cCMV screening results and diagnostic results to parents using [Parent Friendly Language](#).
- Refer the newborn to specialists to conduct additional diagnostic testing and ongoing assessment of newborns' development at recommended intervals. Relevant initial specialties may include audiology, ophthalmology, and neurology.
- Refer infants diagnosed with cCMV to the [Local Early Steps Office](#) for early intervention services

[The Joint Committee on Infant Hearing 2019 Position Statement](#) recommends newborns diagnosed with cCMV receive a diagnostic follow-up no later than 3 months of age and every 12 months to age 3 or at shorter intervals based on parent concerns.

Resources

Centers for Disease Control and Prevention

[Congenital CMV Infection for Healthcare Providers](#)

[Laboratory Testing](#)

[CMV Fact Sheet for Healthcare Providers](#)

[Congenital CMV and Hearing Loss: What's the Risk?](#)

Florida Association of Community Health Centers

[Community Health Locator Tool](#)

Florida Newborn Screening

[For Hearing Providers - Florida Newborn Screening](#)

National CMV Foundation:

[For Healthcare Providers](#)

Hospital Births
Initial Inpatient Hearing Screen as Trigger for CMV Screen
CMV Screening Flow

1. **Conduct the initial high quality hearing screen.**
 - Newborn fails the initial screen – MOVE TO STEP 2.
2. **Collect a sample before the infant is discharged or before 21 days of life, whichever occurs earlier.**

Urine is ACCEPTABLE



OR

Saliva is ACCEPTABLE
1.5 Hours or more after feeding



Blood is UNACCEPTABLE



3. **Conduct a second high quality hearing screen.**
4. **Give the parents:**
 - [Can You Tell Which Child Has Hearing Loss? brochure](#) and highlight the section on CMV to provide education on why their baby is being screened for cCMV.
5. **Test sample.**
6. **Report CMV screening results to the newborns primary care physician and the parent(s).**
7. **Report CMV screening results to Newborn Hearing Screening via eReports.**

Hospital Births

Repeat Inpatient Hearing Screen as Trigger for CMV Screen CMV Screening Flow

1. **Conduct two high quality hearing screens.**
 - Newborn passes repeat screen – STOP.
 - Newborn fails repeat screen – MOVE TO STEP 2.
2. **Collect a sample before the infant is discharged or before 21 days of life, whichever occurs earlier.**

Urine is ACCEPTABLE



OR

**Saliva is ACCEPTABLE
1.5 Hours or more after feeding**



Blood is UNACCEPTABLE



3. **Give the parent**
 - [Can You Tell Which Child Has Hearing Loss? brochure](#) and highlight the section on CMV to provide education on why their baby is being screened for cCMV.
4. **Test sample.**
5. **Report CMV screening results to the newborns primary care physician and parent(s).**
6. **Report CMV screening results to Newborn Hearing Screening via eReports.**