



Michigan Department of Community Health

Newborn Screening News

Winter 2014

The Michigan Department of Community Health (MDCH) Newborn Screening Follow-up Program works together with the State Newborn Screening Laboratory to find and treat infants who need early medical care.

MICHIGAN HIGHLIGHTS

Time Matters!

Did you know that some infants affected with a disorder on the Michigan Newborn Screening (NBS) panel can become seriously ill in the first few days of life? Turnaround time from birth to treatment is the most important measure of an effective NBS Program. The primary objective of NBS is to detect the targeted disorder and initiate treatment prior to the onset of symptoms. Infants with some disorders such as galactosemia, congenital adrenal hyperplasia, maple syrup urine disease, citrullinemia and argininosuccinic acidemia can become severely symptomatic within the first few days after birth. Early diagnosis and treatment can often mean the difference between life and disability or death.

Ideally, NBS specimens should arrive by courier for testing at the State Laboratory by the infant's third or fourth day of life. Specimen transit delays can often be traced to deficiencies in hospital NBS procedures. NBS programs nationally are in the process of evaluating hospital practices related to specimen turnaround time. During the next several months, the Michigan NBS Program will begin identifying and working with hospitals that have slower than average specimen turnaround times. For more information on ways you can improve your hospital's NBS procedures now, contact the Michigan NBS Program at newbornscreening@michigan.gov or 517-335-4181.

Spotlight on Unsatisfactory Specimens

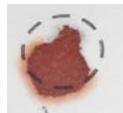
This issue: Serum Rings

The State Laboratory received over 3,000 unsatisfactory specimens in 2013. One cause of unsatisfactory specimens is serum rings. These can be caused by:

- allowing filter paper to come in contact with alcohol, hand lotion, liquids, etc.
- squeezing the area surrounding the incision site excessively
- drying the specimen improperly
- applying blood to the filter paper with a capillary tube.



Serum rings caused by the use of a capillary tube to collect the specimen.



Serum separation because the filter paper had come in contact with a damp washcloth prior to the collection.

Points to remember when collecting the NBS specimen:

1. Wipe away the first drop of blood
2. Apply *only* one large drop of blood to each preprinted circle
3. Apply blood to *only* one side of the card
4. Make sure the blood has soaked through to the other side

Unsatisfactory specimens can result in:

- Infant distress caused by the need for a repeat specimen collection
- Additional work for hospital and NBS staff
- Unnecessary burden on parents who have to bring their baby back for a repeat screen
- Delayed valid test results that could have a negative impact on the health of the baby
- Increased cost to the hospital

NBS Follow-up Program Contact Information

Phone: 517-335-4181

Email: newbornscreening@michigan.gov

Michigan Department
of Community Health



Rick Snyder, Governor
James K. Haveman, Director

Critical Congenital Heart Disease

NICU Protocol

Starting April 1, 2014 all babies born in Michigan will need to be screened for critical congenital heart disease (CCHD) using pulse oximetry. Delayed detection of these heart defects puts the baby at risk for serious complications.

The screening algorithm developed by the MDCH focuses on “well” (asymptomatic) babies in the birthing center. There are currently no national guidelines on screening newborns in the neonatal intensive care unit (NICU). Infants in the NICU are often continuously monitored but do not routinely undergo pre- and post-ductal oxygen saturation assessment. Infants in the NICU should be screened for CCHD just as they are screened for other disorders on the recommended newborn screening panel.¹

With assistance from the CCHD Advisory Committee, as well as physicians, nurse practitioners, and nurses from NICUs throughout the state, the Newborn Screening Program has developed a Michigan CCHD Screening Algorithm for the NICU. The method of screening remains the same as with well babies. However, screening in the NICU is performed based on the infant’s oxygen status (see below).

Timely recognition of CCHD through the use of pulse oximetry allows for early diagnosis and can improve overall health outcomes. Screening newborns in the NICU will support timely recognition, early treatment and improved health outcomes for individuals with CCHD. For more information please visit our website www.michigan.gov/cchd.

¹Suresh, GK (2013). Pulse oximetry screening for critical congenital heart disease in neonatal intensive care units. Journal of Perinatology 33, 586–588.

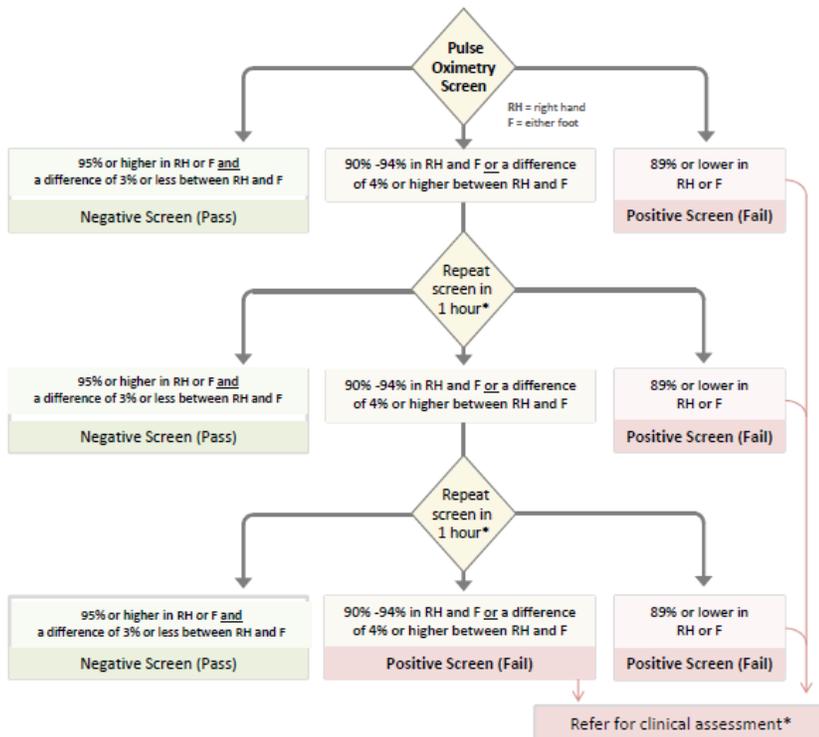
Michigan Algorithm for Pulse Oximetry Screening – NICU

Infants with a previous ECHO or known CCHD diagnosis do not require screening.

ASSESS INFANT’S OXYGEN REQUIREMENT DURING NICU STAY:

- Infants not requiring supplemental oxygen and asymptomatic – screen at or after 24 hours of life.
- Infants requiring oxygen during NICU stay – screen 24 hours after weaning to room air (requiring no supplemental O₂ or respiratory support).
- Infants going home on oxygen – consider ECHO if not already done during hospitalization.

All NICU infants should be screened using these guidelines; if not previously screened, screen prior to discharge from the unit.



Updated Nov 2013

**Always consult your unit's policy on physician notification.*

CCHD Screening- DATA REPORTING

With the CCHD NBS mandate that takes effect April 1, 2014 there is required data reporting.

Hospitals will be required to electronically submit CCHD screening data to the MDCH Newborn Screening Program.

For more information on data submission please visit our website www.michigan.gov/cchd or contact Keri Urquhart, CCHD Nurse Educator at urquhartk1@michigan.gov.



A Look Back at 2013: A Busy Year for the BioTrust!



The Michigan BioTrust for Health is an example of how strong partnerships can help support public health programs. Thank you for making 2013 a successful year! During 2013, ~79% of BioTrust parental consent forms were completed and returned to the State Laboratory. This work by birthing hospital staff helped ensure parents have the opportunity to make a choice about the BioTrust. In order to increase parent awareness before delivery, MDCH staff also contacted over 200 prenatal care providers to encourage provision of BioTrust and newborn screening information during pregnancy.

Over **65,000** parents consented in 2013 for the use of their newborn's blood spot samples in health research approved through the BioTrust (*preliminary results*). This participation helps maintain a robust pool of samples available for important health research. Researchers, both state and nationwide, submitted 15 study protocols in 2013 for approval to use blood spots. By the end of the year, 13 of the studies had received conditional approval, and summaries of these studies can be found on the BioTrust website (www.michigan.gov/biotrust).

Work begun in 2013 includes investigating:

- new methods for newborn screening
- whether assisted reproductive technologies alter DNA methylation
- the genetic contribution for a group of congenital heart defects
- the effects of prenatal exposure to heavy metals on hearing loss.

MDCH staff looks forward to our continued partnership with birthing hospitals and more successful years!



NBS Quarterly Reports and Stellar Performance

During the third quarter of 2013, three hospitals met all six NBS performance goals. We would like to congratulate the following hospitals on their impressive efforts!

Lakeland of Niles
St. Joseph Mercy Hospital Pontiac
William Beaumont Hospital-Troy

Performance Goals for NBS Quarterly Reports

1. <2% of screens are collected >36 hours after birth
2. >90% of screens arrive in the state laboratory ≤4 days after collection
3. <1% of screens are unsatisfactory
4. <2% of envelopes are batched (i.e., contain screens with collection dates >2 days)
5. >95% of electronic birth certificates have the NBS card number recorded
6. >90% of specimens have a returned BioTrust for Health consent form that is completed appropriately

We hope you will be able to use information in the quarterly reports to improve your part of the NBS system. If you have any questions, please call the NBS Follow-up Program at 1-517-335-4181.



Important Reminders!

Technical Assistance and Site Visit Surveys

As part of the Governor's efforts to ensure good government, the NBS Program has been asked to identify metrics for monitoring and improving our performance. We've created two electronic surveys that you may receive via email. One survey will be sent to the point person following a site visit from NBS staff to learn more about how the staff member set up and conducted the site visit. The other survey will be sent to anyone who receives technical assistance from a NBS staff member to learn more about the experience. If you receive an email with a link to either survey, please take the time to complete the brief survey. Your responses are valuable and will help us better serve the needs of your hospital staff!

For more information on CCHD



The current issue of the [Michigan Monitor](#), a newsletter from the MDCH Birth Defects Prevention Program, highlights the newest disorder to be added to Michigan's newborn screening panel, Critical Congenital Heart Disease. Not only does this issue introduce the screening, it includes information about CCHD occurrence in Michigan, system quality improvement efforts and resources. It also provides a brief summary of efforts to prevent Sudden Cardiac Death of the Young.

Lois Turbett is available to work with staff in any hospital that requests help with specimen collection. She can be reached toll-free at (866) 673-9939 or by email at TurbettL@michigan.gov to answer your questions. Together we can achieve our goal that all children diagnosed through newborn screening receive prompt and careful treatment in order to live the healthiest lives possible.



Please remember to share the quarterly newsletter with staff!

If you have questions please contact the NBS Follow-up Program at 517-335-4181 or newbornscreening@michigan.gov or visit our website at www.michigan.gov/newbornscreening