



Newborn Screening News

Summer 2015

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

Michigan is celebrating its 50th Anniversary of Newborn Screening! To recognize this milestone, the Michigan Newborn Screening Program has participated in a variety of events across the State of Michigan including baby fairs, trainings and workshops for healthcare providers and statewide conferences to educate the public and health professionals.

On September 16, 2015 in Lansing, Michigan there will be a special recognition of birthing hospitals that have exceeded expectations in regards to newborn screening responsibilities. The acclaimed hospitals will be notified of the recognition in late summer to identify a representative from the institution to attend the ceremony.

If you would like to host an educational event during the year or want materials to post around your hospital, please contact Kristy Tomasko at (517) 241-0332 or by email at tomaskok@michigan.gov.

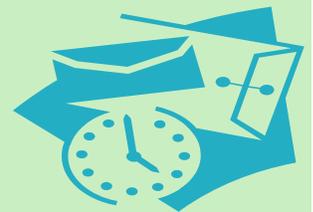
Up to date details on scheduled events can be found at: www.michigan.gov/newbornscreening.

Celebrate 50 years of Newborn Screening!



NBS Transit Time Information

In November 2013, the Milwaukee Journal Sentinel released an article called *Deadly Delays*. This article was based on a national investigation and highlighted individual cases of infants who were severely affected by their specimen's delay in reaching their state laboratory. As a result of this article, many state NBS programs began focusing efforts on decreasing specimen transit time. Additionally, the March of Dimes announced an award that would be given to state NBS programs that have 95% of specimens received within 72 hours of collection **and** have hospital-specific transit times available online. So far, Arizona is the only state to receive this award.



In Michigan, approximately 97% of initial specimens are received within 72 hours of collection, but hospital-specific information has not been posted online. In the spring of 2015, staff from the NBS Program attended the Michigan Health and Hospital Association's Quality Improvement Meeting and presented several different formats for displaying hospital-specific transit times. The committee members expressed support for having this information available online in an effort to encourage transparency. As a result of this support, the NBS Program decided to post a data table on the NBS website with the percent of initial specimens received within 72 hours for each hospital. The table will be updated quarterly and available under the NBS Guides, Forms and Reports portion of the NBS website. (Please visit www.michigan.gov/newbornscreening and click on the Guides, Forms and Reports to access the data table.) If you have any questions about your hospital's information, please contact Mary Kleyn (Epidemiologist, NBS Program) at kleynm@michigan.gov.

NBS Follow-up Program Contact Information

Phone: 517-335-4181

Email: newbornscreening@michigan.gov

Congenital Hypothyroidism

Congenital hypothyroidism (CH) was the second disorder added to the Michigan newborn screening (NBS) panel in 1977. Like most disorders detected through NBS, babies born with CH usually appear normal at birth. Early symptoms, such as problems feeding, jaundice and low activity levels, may be mild and can mimic other conditions. If not caught early, untreated CH can lead to complications such as poor growth and brain damage. Early detection and treatment will allow the baby to develop normally. The goal of the Michigan NBS Program is to start treatment for all babies born with CH by the baby's 14th day of life.

CH is caused by a deficiency of the thyroid hormone thyroxine (T4). The most common causes in the newborn are thyroid dysgenesis resulting in thyroid gland aplasia (defective development or absence), hypoplasia (underdevelopment) or ectopy (displacement). Other causes include failure of the thyroid gland to synthesize T4, thyroid stimulating hormone (TSH) deficiency, and conditions that lead to transient CH. Although hypothyroidism can develop at any age due to a variety of underlying causes, the goal of newborn screening is to detect the most severe forms of primary hypothyroidism present at birth.

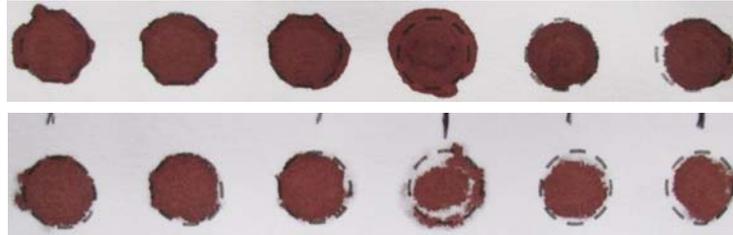
Michigan tests for CH by determining TSH levels. Because TSH levels surge shortly after birth, specimens collected before 24 hours of age are considered inconclusive for CH. Cutoff levels after 24 hours vary depending on the baby's age, see table below. Sick and premature infants with very low body weight may have a delayed TSH surge, which is one reason the NBS Program requests a repeat newborn screen for babies hospitalized eight days or longer. Since 1977, approximately 2,050 babies with CH have been identified through newborn screening.

Michigan Cutoff levels	
Age	Expected TSH Result (uIU/mL)
<24 hours	Not defined; Inconclusive
24 to 36 hours	<33
37 hours to 6 days	<25
7 to 31 days	<13
>31 days	<=10



Spotlight on Unsatisfactory Specimens - Layered and Clotted

Do you wonder why a specimen was found unsatisfactory when you thought it looked so good? Are you hoping to decrease your unsatisfactory specimen rate but reluctant to change your collection practice? The specimens pictured below were collected with capillary tubes. Note the swirl patterns caused by “painting” the circle, resulting in uneven saturation, clotting on one side and areas of white on the reverse side. Hash marks indicate that five of the six circles were unsatisfactory due to clotting and layering, leaving an insufficient amount of blood for testing. This sample illustrates why the NBS Program strongly discourages the use of capillary tubes to collect the NBS specimen. Direct application of one large drop of blood from the heel to each circle on the filter paper results in the best specimen quality.



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:

- Delayed valid test results that could have a negative impact on the health of the baby
- 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
- Increased cost to the hospital

Please
remember to
submit CCHD
records on a
weekly basis!



NBS Quarterly Reports and Stellar Performance

During the first quarter of 2015, three hospitals met all six of the NBS performance goals. We would like to congratulate the following hospitals on their impressive efforts!

- **Beaumont Hospital—Troy**
- **Mid-Michigan Medical Center—Midland**
- **McLaren Port Huron**

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 by the appropriate day
3. <1% of screens are unsatisfactory
4. >95% of electronic birth certificates have the NBS card number recorded
5. >90% of specimens have a returned BioTrust for Health consent form that is completed appropriately
6. >90% of newborns with a dried blood spot have pulse oximetry screening results reported

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!

Submitter Code: Please remember that staff members need to record the correct hospital submitter code on the newborn screening card. The last digit indicates the type of nursery: 0 means regular nursery, 1 means NICU, and 2 means SCN. The submitter code is used to make separate quarterly reports for each unit, so it's important that we can correctly identify which unit submitted each specimen.

Phone Number: Please remember only one phone number per provider should be used on the newborn screening card. Many requestors are using cell phone numbers or multiple different phone numbers for lines in provider offices and the laboratory is receiving new entries every day. Please have hospital staff clean up these lists and include one phone number per provider. Only include on the newborn screening card the doctor who is in charge of the baby's care when the baby leaves the hospital.

Birth Weight: Please remember to record birth weight in **grams** on the first sample newborn screening card. Enter the current weight in grams on the repeat sample card.

TECHNICAL ASSISTANCE

Lois Turbett, NBS nurse consultant, 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 turbett@michigan.gov to answer your questions. Keri Urquhart, CCHD nurse educator, is also available to work with hospitals on CCHD pulse oximetry screening and reporting, and can be reached at urquhartk1@michigan.gov. 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