



Education Annual Report 2023

March 2025

Michigan Department of Health and Human Services
Newborn Screening Program





Acknowledgements

State of Michigan
Governor Gretchen Whitmer

Michigan Department of Health and Human Services
Director Elizabeth Hertel

Public Health Administration
Senior Deputy Director Sarah Lyon-Callo, Ph.D.

Bureau of Epidemiology and Population Health
Interim Director Mary Kleyn, M.S.

Bureau of Laboratories
Director Sandip Shah, Ph.D.

Authors

Kristen Thompson, MPH
Newborn Screening Program Coordinator, Newborn Screening Section,
Division of Lifecourse Epidemiology and Genomics

Angie Aldrich, MSN RN
Newborn Screening Nurse Consultant, Newborn Screening Section,
Division of Lifecourse Epidemiology and Genomics

Isabel Hurden, MPH
Newborn Screening Epidemiologist, Maternal and Child Health Epidemiology Section,
Division of Lifecourse Epidemiology and Genomics

Shelby Heppe, MPH
Manager, Newborn Screening Follow-up Section,
Division of Lifecourse Epidemiology and Genomics



Table of Contents

Program Overview.....4

Provider Education.....5

- **Figure 1: Newborn Screening Program Hospital Visits Completed, 2023**
- **Figure 2: Newborn Screening Hospital Conference Attendees, 2023**

Parent/ Public Education.....11

Education Resources for Providers and Public.....13

New Materials Developed.....15

Educational Events and Presentations Timeline.....16

Areas of Focus.....17

References.....18

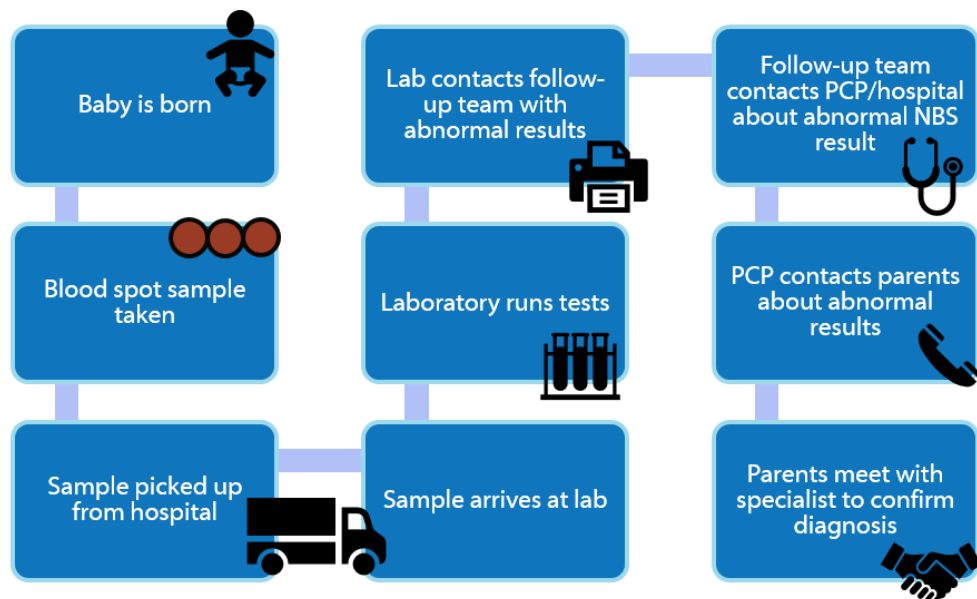


Program Overview

What is newborn screening (NBS) and why is education important?

Newborn screening is a public health program required by Michigan law (MCL 333.5431) to find babies with rare but serious disorders that require early treatment. Infants with these disorders benefit greatly from early treatment, as they appear healthy at birth but can become ill in a very short time. Of the 96,914 Michigan babies screened in 2023, 316 were diagnosed with one of the disorders included on the NBS panel – a rate of about one in every 307 babies.

Studies have found that parents generally have limited awareness of NBS [1,2]. Education efforts are crucial to improve outcomes for babies and experiences for families. Parental awareness that the blood spot screen was collected could improve the notification process when a baby has an abnormal screen [3] and result in more prompt follow-up and compliance with necessary next steps. Providing information to expectant parents may increase satisfaction with the process [4] or lead to increased support for screening [3,5].



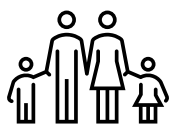
Target audiences for newborn screening education:



Providers, including nursing and other hospital staff collecting the NBS or reporting results to the NBS Program, midwives, home birthing attendants, doulas, obstetricians, pediatricians and other primary care providers (PCPs).



Parents with a child who screened positive for a disorder on the NBS panel or required NBS follow-up.



Parent and public, including pregnant/expecting parents, college and university students, and any other residents of the state of Michigan.



Key partners, including state and national partners, local health department staff, and advisory committees.



Provider Education

Snapshot of NBS provider education efforts in 2023

Hospital Visits

21



Online Trainings Hosted by the NBS Program

55

Views

902

Completions

500

Continuing Education Units
Awarded



Grant Activity



The NBS Program received funding for three different projects focused on provider education in 2023.

1

Critical Congenital Health Disease Continuous Quality Improvement Grant: a project aimed at improving Critical Congenital Heart Disease (CCHD) screening rates among the Michigan homebirth community.

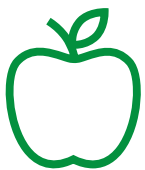
2

Unite NBS Learning Community: an opportunity to collaborate to advance NBS education in Michigan for community birth providers. Michigan's NBS and EHDI Programs came together to develop a training for birthing attendants.

3

Propel Grant: a project with goals of exploration of an infrastructure and framework for next-generation sequencing (NGS)-based newborn screening for cystic fibrosis and to address the educational needs of parents and primary care providers (PCPs) as NBS continues to evolve and become increasingly complex.

Educational
Resources



4

Created

2

Updated



Hospital Conferences

A total of **119** people, representing **55** birth hospitals and **six** Michigan community birth attendants, attended.

Newsletter



Four distributed to **300** individuals from birthing hospitals across Michigan.

Blood Spot Quarterly Report

Includes data on **six** metrics comparing the hospital metrics to statewide performance.



Each quarter, birthing hospitals receive a NBS blood spot and critical congenital heart disease (CCHD) Quality Assurance Report.

CCHD Quarterly Report

Includes data on **three** metrics comparing the hospital metrics to statewide performance.



Provider Education

Hospital Visits

The NBS team meets virtually with individual hospitals to discuss their newborn screening process through educational site visits.

Topics discussed:

- ✓ NBS updates and resources.
- ✓ Hospital's metrics from the previous year.
- ✓ Technical assistance for any areas of concern.
- ✓ Pulse oximetry screening for CCHD.
- ✓ Parent education.
- ✓ Courier process.

Typical hospital representation at the visits includes:

- ✓ NBS coordinator.
- ✓ Backup NBS coordinator.
- ✓ CCHD contact.
- ✓ Hospital lab contact (if applicable).



Figure 1. Newborn Screening Program Hospital Visits Completed, 2023



Hospital Conferences

The NBS Program hosted two virtual conferences in May 2022 for hospital staff and homebirth attendants.

Hospital Conferences

A total of **119** people, representing **55** birth hospitals and **six** Michigan homebirth attendants, attended.



The conference covered a variety of topics including:

- ✓ A cystic fibrosis (CF) highlight.
- ✓ Communication strategies for reluctant parents.
- ✓ Using performance metrics for quality improvement.
- ✓ A parent's experience with having a child diagnosed with CF.
- ✓ CCHD screening data reporting.
- ✓ Early hearing detection and intervention.
- ✓ Emergency weather specimen transport plan.

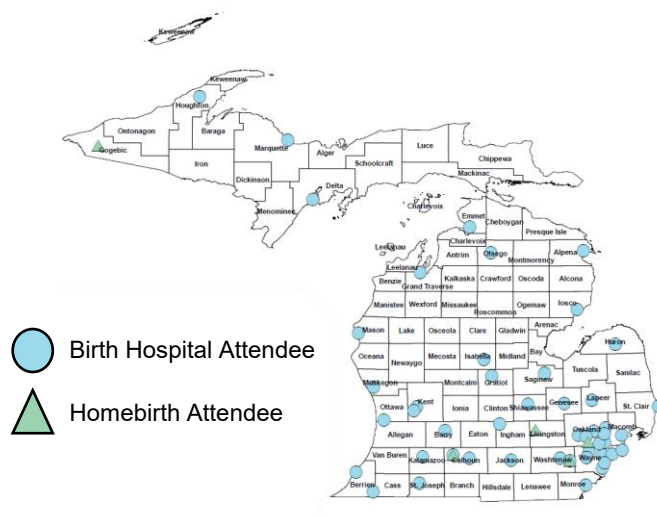
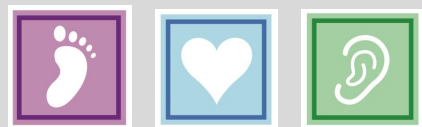


Figure 2. Newborn Screening Hospital Conference Attendees, 2023



Quarterly Newsletter



Three hundred individuals from birthing hospitals across Michigan, including designated NBS coordinators and other staff upon request, received quarterly newsletters in 2023. Newsletters cover topics such as screening updates and technical assistance. PDF versions of the newsletters can be found online at Michigan.gov/NewbornScreening.

Blood Spot Quarterly Reports

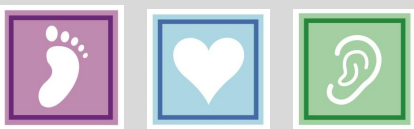
Michigan birthing hospitals receive quarterly NBS Quality Assurance Reports comparing the individual hospital's performance on statewide performance level metrics. Statewide data on each metric for 2023 is listed below:

| The six performance measurement goals are: | | State Average Q1 | State Average Q2 | State Average Q3 | State Average Q4 |
|--|---|------------------|------------------|------------------|------------------|
| ① | Less than 1% of screens collected are greater than 36 hours after birth (note this changed from 2% in Q2 2023). | 0.5 | 0.5 | 0.5 | 0.4 |
| ② | Greater than 90% of screens arrive in the state laboratory by the appropriate day. | 92.1 | 91.9 | 92.3 | 94.3 |
| ③ | Less than 1% of screens are unsatisfactory specimens. | 2.2 | 1.6 | 1.7 | 1.9 |
| ④ | Greater than 95% of electronic birth certificates have the NBS number recorded. | 96.7 | 96.5 | 95.9 | 95.9 |
| ⑤ | Less than 2% of specimens have errors in the demographic data on the NBS card (note this changed from 1% in Q2 2023). | 3.3 | 2.3 | 2.3 | 2.3 |
| ⑥ | At least 90% of specimens have a returned BioTrust for Health consent form that is completed appropriately. | 86.0 | 86.8 | 85.9 | 85.9 |

CCHD Quarterly Reports

Michigan birthing hospitals receive quarterly NBS Quality Assurance Notifications on CCHD screening performance metrics. Statewide data on each metric for 2023 is listed below:

| The three performance measurement goals are: | | State Average Q1 | State Average Q2 | State Average Q3 | State Average Q4 |
|--|---|------------------|------------------|------------------|------------------|
| ① | 95% or greater of pulse oximetry screens performed on newborns are reported to the newborn screening program. | 93.5 | 96.1 | 97.6 | 96.6 |
| ② | 90% or greater of pulse oximetry screens reported to the state less than 10 days after the screen is taken. | 72.6 | 71.3 | 72.8 | 67.6 |
| ③ | 90% or greater of newborns have a pulse oximetry screen completed between 20 and 28 hours after birth. | 88.8 | 94.0 | 94.2 | 94.9 |



Online Training Modules

The Michigan NBS Program offers three trainings covering newborn blood spot screening and critical congenital heart disease screening. These trainings can be accessed at courses.mihealth.org/PUBLIC/home.html. Continuing education units (CEUs) are awarded upon completion of these courses.

Newborn Screening – Michigan:

Focuses on collection of blood spots.

- 42 views.
- 635 completions.
- 318 CEUs awarded.

Critical Congenital Heart Disease

Focuses on pulse oximetry screening protocols in hospital settings.

- 11 views.
- 255 completions.
- 175 CEUs awarded.

Critical Congenital Heart Disease for Home Birthing Attendants

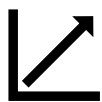
Focuses on pulse oximetry screening protocols in community settings.

- 2 views.
- 12 completions.
- 7 CEUs awarded.

Definitions for online training metrics:

- Views: users who viewed but did not complete a course in the given month; OR, users who previously completed a course but accessed it again in the given month
- Completions: users who completed a course in the given month

Critical Congenital Heart Disease Continuous Quality Improvement Grant



Grant Activity

The NBS Program received funding for a project aimed at improving CCHD screening rates among the Michigan homebirth community.

1

Establish a foundation for educating home birthing attendants on CCHD screening.

2

Increase reporting rates by promoting pulse oximeter loan program.

3

Promote the use of eReports™ online module for reporting CCHD screening results.



Progress Update

- Goal: Thirty home birthing attendants have completed the online training
 - Progress: 13.
- Goal: Six home birthing attendants have completed an application for the pulse oximetry loan program and received their pulse oximeter
 - Progress: 12.
- Goal: Increase the number home birthing attendants who have registered for eReports™ by 13. Pre-grant we were at 19 and the goal is 33.
 - Progress: 41.
- Goal: Increase the percent of infants born at home had valid pulse oximetry screening results reported out of newborns with blood spot screens submitted to 85%
 - 87% of midwife births had reported pulse oximetry screens in Q2 after follow-up was conducted.

Unite Newborn Screening Learning Community

The State of Michigan has two areas of the health department supporting all three methods of NBS: Dried Bloodspot (DBS); Critical Congenital Heart Disease (CCHD); and Early Hearing Detection and Intervention (EHDI). While both screening programs are part of the Michigan Department of Health and Human Services (MDHHS), they are overseen by different bureaus and divisions. No comprehensive joint training programs exist in Michigan for community birth providers interested in learning about NBS.

Project Aim: Increase the number of babies born to newly trained midwives that receive dried blood spot (DBS), CCHD, and newborn hearing (NBH) screening to 50%.

Sub Aim: Increase the average comfort level, as measured on a six-point scale, of newly trained midwives on performing all three types of screening.

Approximately 2% of births in Michigan are community births, and this percentage is expected to increase. In August 2023, the two programs sought an opportunity to collaborate to advance NBS education in Michigan for community birth providers. Using the guidance and financial support of the Unite Newborn Screening Learning Community, a partnership with the Association of Public Health Laboratories and National Center for Hearing Assessment and Management, Michigan’s NBS and EHDI Programs came together to develop a training for birthing attendants. A survey was developed to evaluate if collaborative efforts enhance NBS knowledge among community birth providers in Michigan. Planning meetings started in late 2023 to prepare for the training sessions scheduled for early 2024, aimed at birthing attendants using the newly developed training.

State Newborn Screening System Priorities Program (NBS Propel)

The NBS Program was awarded a Health Resources and Services Administration (HRSA) State Newborn Screening System Priorities Program (NBS Propel) five-year grant in 2023. The initiative of this HRSA program is to support state NBS programs in addressing state-specific challenges and to pursue priorities to enhance, improve and expand the NBS system.

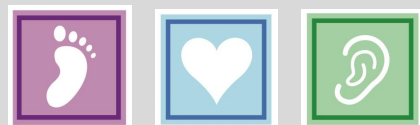
The Michigan NBS propel project is a collaboration between the Follow-up Section in the Bureau of Epidemiology and Population Health and the NBS Laboratory Section within the Bureau of Laboratories. Funding began in July 2023 and supports the following goals:

Focus Area 1 (Newborn Screening Laboratory): Explore establishing infrastructure and framework for next-generation sequencing (NGS)-based newborn screening, beginning with cystic fibrosis (CF). Activities surrounding the expansion of the second-tier CF variant assay to include additional disease-causing variants will be supported.

Focus Area 2 (Newborn Screening Follow-up): Address the educational needs of parents and primary care providers (PCPs) as NBS continues to evolve and become increasingly complex.

In 2023, the Michigan NBS laboratory began preparing to transition second-tier CF testing to the next generation sequencing-based Illumina TruSight Cystic Fibrosis 139-Variant assay. The use of this assay will more than double the number of disease-causing variants detected in Michigan. Activities completed include purchasing of instrumentation and completing training with the manufacturer.

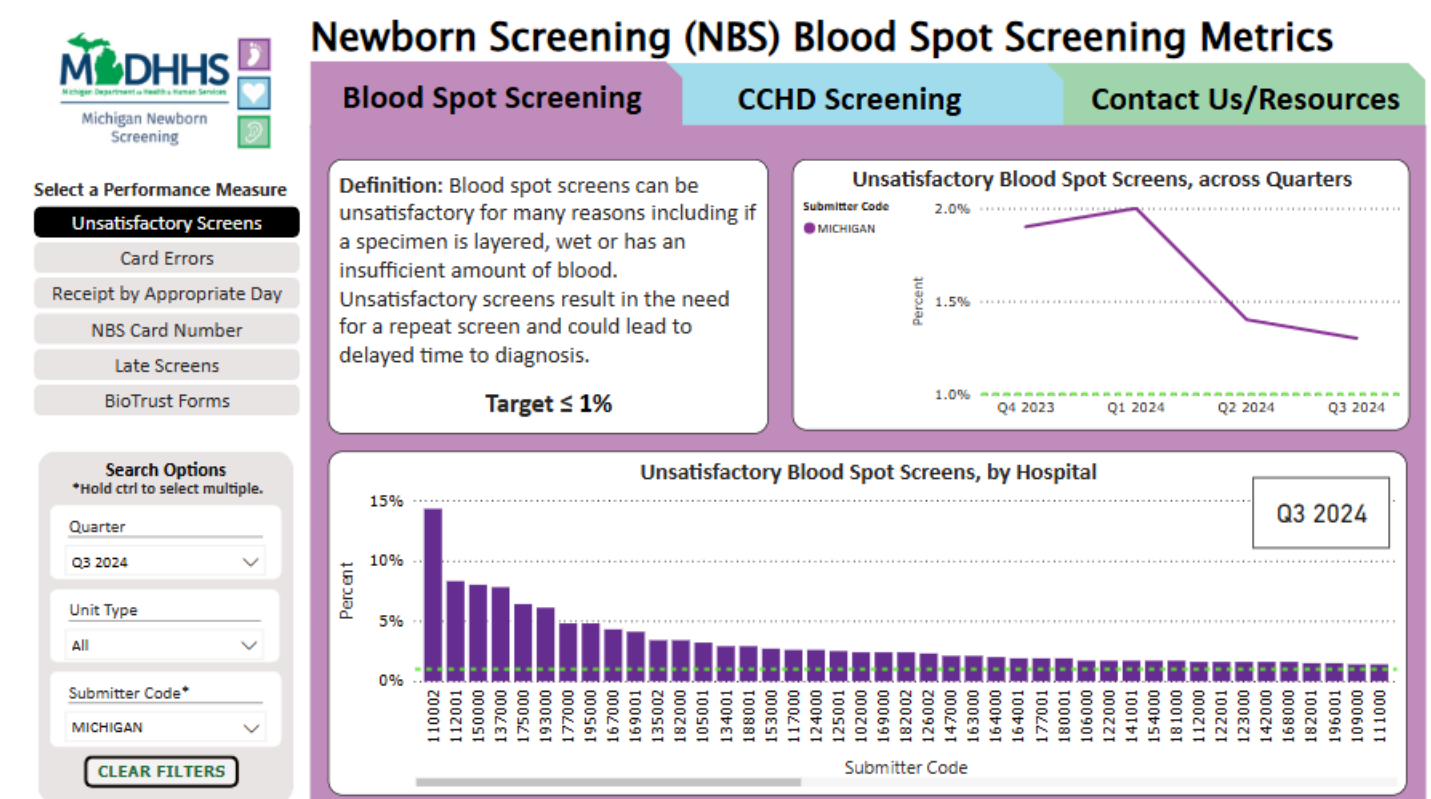
In 2023, the NBS Follow-up Section hired a project coordinator who assumed responsibilities for activities falling under Focus Area 2. These include planning of surveys to primary care providers, focus groups for families and the creation of educational documents related to CF screening.



NBS Dashboard

An exciting new feature has been added to the NBS website. The NBS Dashboard is a convenient way to review hospital blood spot and CCHD screening metrics. Search options include viewing specific hospital quarterly metrics and trends, as well as comparison between all Michigan reporting hospitals and the overall Michigan average. The dashboard will provide an opportunity for facilities to view their performance over time. To protect privacy, the submitter code assigned to each hospital was used in place of the hospital name.

Please visit the Resources for Hospitals and Health Professionals page at Michigan.gov/NewbornScreening to view the dashboard.



The NBS Program aims for the dashboard to enhance the NBS process within hospitals. By meeting these metrics, hospitals can ensure that all infants have the opportunity to have blood spot and CCHD screening completed as effectively as possible.



Parent and Public Education

Snapshot of NBS education efforts for parents and the public in 2023

MDHHS Virtual Baby Fairs

374 people registered for the baby fair and received the Baby Fair Resource Packet.

Approximately **153** participants joined one of the two live presentations.



Social Media



Michigan Department
of Health and Human
Services



@MichiganHHS



@MichiganHHS

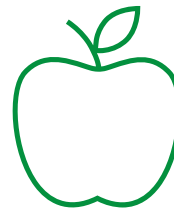
56 posts across **three** social media platforms.

Educational Resource Orders

NBS educational resources are available to order for free online at Michigan.gov/nbsorders. They include three brochures and two infographics.

Newborn Screening Saving Babies: 51,825
Critical Congenital Heart Disease Screening: 46,450
Information for Expectant Parents: 17,375
Road Map: 21,050
What to Expect: 7,150

143,850
Resources Ordered



2

Television
Interviews



1

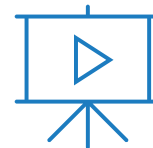
[The Newborn Screening Video](#)

2

[After Newborn Screening- What Happens to Leftover Blood Spots in Michigan](#)

3

[Michigan Newborn Screening: Are you ready for your baby's first test?](#)



201

YouTube
Video Views

NBS Websites

19,985
Total Page Views



The NBS websites have resources for parents including a list of disorders, fact sheets, contact information for follow-up coordinating centers and frequently asked questions.



The NBS websites have resources and educational materials for providers with the *Resources for Hospitals and Health Professionals* section.



Parent and Public Education

Virtual Baby Fairs

In partnership with other areas of the Michigan Department of Health and Human Services (MDHHS), the NBS Program hosted six virtual baby fairs in 2023. These virtual baby fairs are an opportunity for MDHHS programs, including NBS, to share important resources and information to new and expecting parents across the entire state.

2023 MDHHS Virtual Baby Fairs



374 people registered for the baby fair and received the Baby Fair Resource Packet.



Approximately **150** participants joined one of the six live presentations.

Each registrant of the baby fair:

- ✓ Receives a packet of information and resources, called the “MDHHS Virtual Baby Fair Resource Packet,” to supplement the information provided at the live events.
- ✓ A Zoom link to a live baby fair presentation.
- ✓ A YouTube link shared via email with registrants following the live event. The recorded video can be viewed with closed captioning in their preferred language and can be used by persons unable to attend the live session.

Social Media

The NBS Program shares content through MDHHS social media pages. Social media posts are drafted by the NBS Program staff and sent to the MDHHS Communications for posting. A more detailed list of social media content can be provided upon request by emailing NewbornScreening@Michigan.gov.



**Michigan Department of
Health and Human Services**

Total Posts

23

Impressions

163,806

Engagements

938



@MichiganHHS

Total Posts

13

Impressions

13,302

Engagements

233



@MichiganHHS

Total Posts

20

Impressions

9,361

Engagements

185

Impressions are the number of times a post or ad appears on a screen. **Engagement** refers to the interactions and activity on content posted and includes likes, comments, reactions, etc.



Educational Resources Available for Providers and Public

YouTube Videos

The NBS Program worked with MDHHS's Office of Communications to create three educational NBS videos.

Newborn Screening: How Does It Work?

This brief video provides an animated overview of the newborn screening process in Michigan. It is ideal for use with new and expecting parents.

youtu.be/c1w2Vow9UUo



161
Views



36
Views

After Newborn Screening- What Happens to Leftover Blood Spots in Michigan

This video gives an animated overview of what happens to blood spots after screening and the options that families have. It is approximately one and a half minutes long and summarizes how blood spots left over after NBS may be used. It is ideal for use during the prenatal period.

youtu.be/UMcvVskMaiY

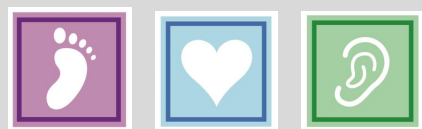
Michigan Newborn Screening: Are you ready for your baby's first test?

This two-and-a-half-minute video works through steps families can take to have an active role in their baby's newborn screening journey. It is ideal for new and expecting parents.

youtu.be/Vq9iw6le3j4



4
Views



Educational Resources Available for Providers and Public

Websites

The NBS Program has two websites:

- [Michigan.gov/newbornscreening](https://michigan.gov/newbornscreening)
- [Michigan.gov/CCHD](https://michigan.gov/CCHD)

To better understand how people interact with the program websites, a few key metrics are tracked. More detailed information on website analytics can be provided upon request at NewbornScreening@Michigan.gov.

Page Views

9,804 views



Represents how many times pages on the site were looked at. If a person visits the same page more than once, each visit counts. This helps NBS staff see which pages are the most popular and which ones might need more attention or promotion.

Active Users

4,870 active users



This is the number of unique visitors who spent time on one of the program websites. It shows how many individuals were meaningfully engaged, not just those who briefly landed on a page and left.

Sessions

15,996 sessions



A session is a single visit to the websites, which can include multiple page views and actions. If someone browses one of the NBS Program's sites, clicks on links, or watches a video, that's one session. This helps NBS staff understand how often people visit and interact with their sites.

New Users

5,313 first-time users



This is the count of people who came to one of the program websites for the first time during the year. It gives NBS staff an idea of how well they are reaching new audiences.

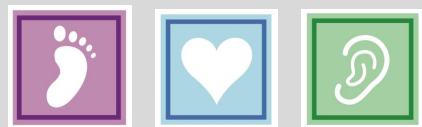
Education on website for the public:

The NBS website has a wealth of resources including a list of disorders, fact sheets, contact information for follow-up coordinating centers and frequently asked questions. Most disorders have a fact sheet for families with an explanation of what a positive screen means and a summary of the disorder. The website also includes a timeline of when disorders were added to the panel.

Education on website for providers:

The NBS website includes many resources and educational materials for providers with the *Resources for Hospitals and Health Professionals* section, including:

- Michigan NBS Guide for Hospitals.
- Michigan NBS Guide for Homebirths.
- Link to the NBS Educational Online Tutorial.
- Previous editions of the NBS Newsletter.
- Avoiding Unsatisfactory Specimens Tip Sheets .
- A Simple Blood Spot Check Tool.
- Completing the NBS Card infographic.
- NBS Bloodspot Collection Guidance document.
- Putting Babies First video.



New Materials

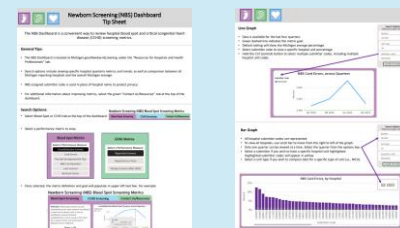
Courier Flyer for Hospitals:

This informational flyer was created for Michigan hospitals to remind staff of courier pick-up and specimen drying and packaging cut-off times. The goal of this resources is to improve the receipt by appropriate day measure selected by the NBS program to ensure specimens arrive at the state laboratory by the appropriate day.



Newborn Screening Dashboard Tip Sheet:

This informational tip sheet was created to assist Michigan hospital staff in navigating the newborn screening dashboard. The resource provides step-by-step instructions for viewing specific hospital quarterly metrics and trends, as well as comparison between all Michigan reporting hospitals and the overall Michigan average.



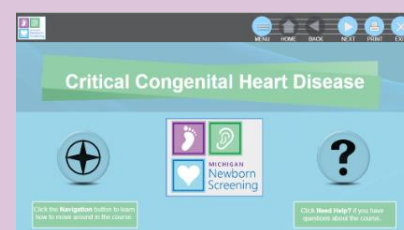
Updates to the NBS Online Module:

The Newborn Screening – Michigan online course was updated to include recent screening updates and information about the Michigan BioTrust for Health consent process. This module can be accessed on the Michigan Public Health Institute Public Learning Management System and the direct link is available on the NBS website. Successful completion of the course offers 1.5 nursing contact hours to the participants. The course objective is to help hospital and community birth providers to better understand and carry out their roles in collecting blood spot specimens and assisting parents with the consent process for any remaining blood after screening is complete.



Updates to the CCHD Online Module for Hospitals:

The purpose of this course is to enhance the knowledge and skills of nurses taking pulse oximetry readings in order to diagnose critical congenital heart disease during newborn screenings. The module was updated to include new information for critical congenital heart disease (CCHD) and CCHD screening using pulse oximetry.



Newborn Screening Monthly Minute Video:

The Monthly Minute is a series of short videos created by Michigan's Vital Records program to highlight common errors hospital staff should avoid when working in the Vital Events Registration Application (VERA). The NBS Program collaborated with the Vital Records Program to create a monthly minute video highlighting important things to consider when filing a birth certificate to allow for timely newborn screening. To view please visit: [youtu.be/LMxE- D4Psk](https://youtu.be/LMxE-D4Psk)



NBS and Biotrust Pocket Script:

NBS and BioTrust Pocket Script can help staff with language that should be used when talking with parents about NBS and BioTrust. The scripts help staff differentiate between NBS and BioTrust. They are sized to fit into a scrub pocket for easy access.





Educational Events Attended and Presentations

Detailed information about educational events and presentations attended by the Program can be provided upon request at NewbornScreening@Michigan.gov

JANUARY

FEBRUARY



Rare Disease Day 2023

MARCH

APRIL



2023 Association of Public Health Laboratories
NewSTEPs Continuous Quality Improvement National Meeting



2023 Newborn Screening Hospital Conferences

JUNE



2023 Maternal Infant Health Summit



MDHHS Summer Baby Fair

AUGUST



8th World Congress of Pediatric Cardiology
and Cardiac Surgery

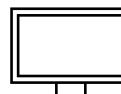
JULY



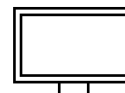
2023 Women, Infants, and Children Conference
2023 Partners in Pediatric Care



[WOOD TV 8 Television Interview](#)



[WIXL 10 Television Interview](#)



SEPTEMBER

73rd Annual Michigan Chapter American Academy of
Pediatrics Conference



OCTOBER



2023 Association of Public Health Laboratories Newborn
Screening Symposium

NOVEMBER

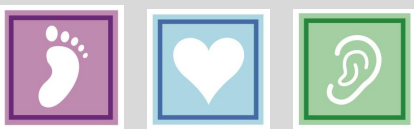
Grand Valley State University Public Health Program



DECEMBER



MDHHS Winter Baby Fair



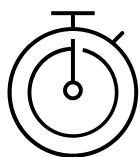
Areas of Focus

In 2023, the Newborn Screening Program achieved notable successes toward the goals outlined in the 2022 Education Annual Report and beyond, including:



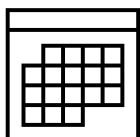
- ✓ Updating the NBS and CCHD online training course for hospitals.
- ✓ Piloted the use of an updated NBS and BioTrust pocket script with staff in Michigan birthing hospitals. This was well received, so it was added to the Newborn Screening Online ordering system and made available to all hospitals for ordering.
- ✓ Began the process of updating the NBS websites.
- ✓ Promotion of website resources on all hospital site visits conducted in 2023.
- ✓ Increased social media content: Facebook posts were increased 130%, Instagram increased 550%, and Twitter increased by 233% when compared to posts made in 2022.

The Newborn Screening Program's internal education workgroup has identified both short-term and long-term goals to guide future program activities and areas of focus.



In the short term, the program aims to increase awareness and education about newborn screening among parents and healthcare providers. This includes participating in educational events for both groups, as well as using social media and online training modules to disseminate information. Specific areas of focus include:

- Creation of an on-demand format of the Michigan Department of Health and Human Services Virtual Baby Fair.
- Continued work to update the NBS websites and promote the resources available on the pages.
- Updating the NBS and BioTrust Road Map educational resource with a modern look and updated content.
- Increase the number of impressions associated with social media posts.



In the long term, the NBS Program aims to increase educational opportunities for families to learn about newborn screening prior to delivery. Creating and fostering partnerships to deliver education to families who plan to deliver outside of a hospital will be a priority. Continued focus will be placed on strengthening relationships with clinical partners, including obstetricians and pediatricians, who have opportunities to provide education to families during the prenatal and postnatal periods.

The Michigan Department of Health and Human Services (MDHHS) does not discriminate against any individual or group on the basis of race, national origin, color, sex, disability, religion, age, height, weight, familial status, partisan considerations, or genetic information. Sex-based discrimination includes, but is not limited to, discrimination based on sexual orientation, gender identity, gender expression, sex characteristics, and pregnancy.



1. Ulph, F.; Wright, S.; Dharni, N.; Payne, K.; Bennett, R.; Roberts, S.; Walshe, K.; Lavender, T. Provision of information about newborn screening antenatally: A sequential exploratory mixed-methods project. *Health Technol. Assess.* 2017, *21*, 1–240.
2. Fitzgerald, C.; Heery, E.; Conneally, N.; Linnane, B.; George, S.; Fitzpatrick, P. An evaluation of pregnant women's knowledge and attitudes about newborn bloodspot screening. *Midwifery* 2017, *45*, 21–27.
3. Botkin, J.R.; Rothwell, E.; Anderson, R.A.; Rose, N.C.; Dolan, S.M.; Kuppermann, M.; Stark, L.A.; Goldenberg, A.; Wong, B. Prenatal Education of Parents about Newborn Screening and Residual Dried Blood Spots: A Randomized Clinical Trial. *JAMA Pediatrics* 2016, *170*, 517–628.
4. Krishnan, L.A.; Van Hyfte, S.; Richards, A.R. Newborn Hearing Screening: Early Education = More Satisfied Mothers. *Am. J. Audiol.* 2019, *28*, 617–627.
5. Tariq, B.; Ahmed, A.; Habib, A.; Turab, A.; Ali, N.; Soofi, S.B.; Nooruddin, S.; Kumar, R.J.; Tariq, A.; Shaheen, F.; Ariff, S.; et al. Assessment of knowledge, attitudes, and practices towards newborn screening for congenital hypothyroidism before and after a health education intervention in pregnant women in a hospital setting in Pakistan. *Int. Health* 2018, *10*, 100–107.