

Beaumont

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Newborn Screening Collection

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

- A. The purpose of this procedure is to provide instruction for the proper collection and documentation of newborn screening (NBS) cards. The Michigan newborn screen program is designed to provide identification of newborns with rare and serious, but treatable, disorders.
- B. Early detection and treatment of some of the metabolic disorders screened for, if treated early, can avoid serious lifetime consequences. Therefore, proper collection, prompt forwarding and accurate completion of the card play an important role in the Michigan Department of Health & Human Services (MDHHS) program. This may involve a repeat screening test or prompt referral to medical management.

II. PROCEDURE:

A. First Sample:

1. The in-patient nurse will order the test through EPIC and fill out the "First Sample" blue newborn screening card.
2. The in-patient phlebotomist will obtain a properly filled out blue (First Sample) screening card from the nursery and review the card as indicated in section B.
3. The best time to collect the first sample on the baby is 24-30 hours after birth. This collection should go on the "First Sample" card which has a BLUE top slip. **Do not collect before the baby is 24 hours and 1 minute old.**
4. If the baby did not have the newborn screen collected in the hospital, the baby may arrive at a Patient Service Center (PSC) to have the initial specimen collected.

B. Review of Card:

1. The phlebotomist will check the information on Beaker lab label, the screening card, and the baby's identification band to verify that all three names, medical record numbers and dates of birth match.
2. The phlebotomist will review the card for complete information. Any missing information on the card needs to be obtained at this time from the nurse. It is extremely important to fill out the NBS card completely and accurately. Inaccurate information can lead to critical delays in identifying and reporting of abnormal results. See attached Completing the Newborn Screening Card.



Every time you fill out a newborn screening form, you hold a baby's life in your hands.



3. Baby Section areas that need to be completed:

- a. Baby's Name: If first name hasn't been decided, use "boy" or "girl".
- b. Sex: Vital in alerting lab of ambiguous genitalia.
- c. Birth date/time + Collection date/time: Record in military time. Exact age of infant (in hours) and time of collection is critical for validity of test results.
- d. Birth weight: Record in grams. Accuracy is critical for lab cutoff values.
- e. Weeks gestation: Record weeks gestation at time of birth.
- f. Single/Multiple birth/Birth order: Birth order is vital for linking results.
- g. Antibiotics: Mark "yes" if the infant is currently receiving antibiotics or has received antibiotics postnatally within 48 hours before specimen collection.
- h. Neonatal Intensive Care Unit (NICU) or Special Care Nursery (SCN): Indicate if infant is in NICU or SCN at time of collection. If neither, select no.
- i. RBC Transfusion: Indicate "yes" if the newborn was ever transfused with red blood cells prior to specimen collection, including in utero. Record the most recent transfusion date and start time (in military time).
- j. Medical Record Number (MRN): Record infant's hospital MRN.
- k. Ethnicity/Race: Record both ethnicity and race. If father's race is unknown, use mother's ethnicity and race.
- l. Type of collection: Heel stick is the preferred method. If another method used, indicate method. Flush type is flush used prior to collection, if any.
- m. Other feeding: Check all that apply. Formula: Select milk-based or soy. Total Parenteral Nutrition (TPN): Select "yes" if infant is receiving
- n. TPN at the time of specimen collection or has received TPN within 24 hours of collection.

4. Mother Section areas that need to be completed:

- a. Mother's Name: Record name as it will appear on birth certificate. If infant will not be released into care of mother, mark the appropriate circle. Provide contact

information for the adoptive/foster parent or adoption agency in place of the mother's information.

- b. Mother's Contact info: Record accurate address and phone number. This is critical to locate newborns in need of clinical evaluation or retesting.
- c. Mother's Medical Record: Record mother's hospital MRN.
- d. Mother's Date of Birth: Record accurately for linking of records.
- e. Hep B Surface Antigen: Record date of mother's test and result. Positive results should be faxed to MDHHS Perinatal Hep B Prevention Program at 517-763-0470.

5. Provider and Submitter Section areas that need to be completed:

- a. Provider contact information: Verify and record accurate PCP contact information. If infant is expected to be in NICU for >1 week, record neonatologist and NICU contact info in the provider area. This is critical information, as the recorded provider will be contacted with abnormal results or need to retest. DO NOT LEAVE BLANK.
- b. Submitter contact information: Record accurate submitter contact info. Pre-printed hospital labels may be used, but must contain all requested info, including hospital code.

i. Submitters Address (Which would be the Hospital's Address, not the drawing site.) will be:

- a. Corewell Health East - Dearborn Laboratory
18101 Oakwood Blvd
Dearborn Michigan 48124
Phone Number 313-593-7900
- b. Corewell Health East - Wayne Laboratory
33155 Annapolis St.
Wayne, MI 48184
734-467-2833

- c. Birth hospital: Record name of birth hospital or home birth, if different from submitter.
- d. Notes: Use space to notify NBS Program of any additional information, such as family history of disorder, meconium ileus, transfers, safe surrender, etc.
- e. MDHHS Use Only – Please do not write or place stickers in this spot. Baby's last name.
- f. The weight in grams can be obtained by first converting pounds to ounces. The weight in ounces is then converted to grams by multiplying by 28.35.
- g. Use a blue or black pen only to write on the cards.

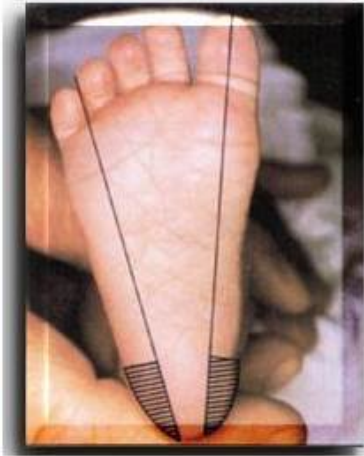
C. Repeat Sample:

- 1. If a first sample was submitted and a recollection of the newborn screen is needed, this will be on a "Repeat Sample" card, which will have a PINK top slip. A recollection may be needed if the first sample that was submitted to the state was collected when the infant was less than 24 hours old, may be indicated if the first sample is positive or if the first specimen submitted was unsatisfactory for testing. Patient Service Centers (PSC) will receive a request form and personnel assigned to the site will be responsible for filling out the pink forms correctly. (Note: Blue represents the original cards; pink signifies a redraw.)



D. Specimen Collection and Handling:

- 1. Refer to the [Instructions for Using Rover Devices for PPID](#) to properly identify the patient and get the appropriate labels.

2. Check the expiration date before specimen collection.
3. Make sure the cards are not damaged or contaminated before using and do not touch the filter paper circles before or after collection.
4. Phlebotomist places heel warmer on the infant's foot and leaves on for three minutes.
 - a. Please note that hands must have been washed and gloves worn prior to putting on the heel warmer to the infant's foot.
5. Cleanse the site with alcohol prep. Be sure the puncture site is dry before performing collection. Alcohol left on the skin can dilute the specimen, causing inaccurate results.
6. Use a sterile, disposable lancet (Tenderfoot lancet) to perform a swift, clean puncture. The "hatched" area in the picture below indicates safe areas for collection.



7. Wipe away the first drop of blood with gauze.
8. Avoid excessive squeezing when collecting the specimen.
9. Using the heel method, gently touch the filter paper against a **large drop** of blood and allow a sufficient quantity of blood to soak through to completely fill the preprinted circle. The blood must soak through the paper. **Do not use capillary tubes or other devices.**
 - a. Blood must be applied to only one side of the filter paper and the circle should be fully saturated. **(The State recommends NOT turning the card over to fill the other side. Blood should saturate through.)** The circle should look the same whether viewing from the front or the back. Below is an example of a satisfactory circle:

Image Front Side	Image Back Side	All unsatisfactory specimens will require a repeat specimen collection.
		Satisfactory Specimen: <ul style="list-style-type: none"> ✓ Circles are filled with a <i>single</i> blood drop applied to <i>one side</i> of the filter paper. ✓ Drop soaks through to fill the circle on the back. ✓ Card is dried <i>horizontally</i> for at least 3 hours. ✓ Filter paper is not exposed to contaminants. ✓ No clots, layering, or damage to filter paper.

10. Completely fill each of the five circles with blood to allow saturation through the paper. The blood must soak through the paper. The filled circles should appear the same on both sides of the paper.
11. Date and time the label set. Place a container label on the first page and the yellow copy of the NBS Card.
12. **Write the collection date, collection time, and collected by on the NBS card.**

The image shows a newborn screening card form. A red box highlights the fields for 'COLLECTION DATE', 'COLLECTION TIME', and 'COLLECTED BY'. The form includes sections for:

- LAST NAME, FIRST NAME, SEX (MALE, FEMALE, AMBIGUOUS)
- BIRTH DATE, BIRTH TIME (Military), BIRTH WEIGHT (grams), WKG GESTATION
- BIRTH ORDER (A, B, C, D), ANTIBIOTICS? (NO, YES)
- COLLECTION DATE, COLLECTION TIME, COLLECTED BY (highlighted)
- NICU or SPECIAL CARE? (NO, YES), ANY RBC TRANSFUSION? (NO, YES), TRANSFUSION DATE, TRANS. START TIME
- MEDICAL RECORD #, ETHNICITY (HISPANIC, NON-HISPANIC), RACE (WHITE, AMERICAN INDIAN, MIDDLE EASTERN DESCENT, BLACK, ASIAN/PACIFIC ISLANDER, MULTI-RACIAL)
- TYPE OF COLLECTION: Heel Stick, Venipuncture, Line Draw
- Type of Flush, OTHER FEEDING: BREAST, MILK-BASE, SOY, NONE, TPN / AMINO ACIDS (NO, YES)

13. **Avoiding Unsatisfactory Newborn Screening Specimens:**

Newborn Screening (NBS) specimens will be examined for quality upon receipt at the MDHHS NBS Lab. **Unsatisfactory specimens will require that a repeat specimen is collected.** Notification of the need for a repeat specimen will be faxed to the submitter and the primary care provider listed on the NBS card. See attached Quick Blood Spot Check.

- a. DO NOT over fill the circles
- b. DO NOT touch the same circle multiple times with blood or this will cause layering.
- c. DO NOT excessively squeeze the heel as this will cause serum separation.
- d. DO NOT apply blood to both sides of the filter paper.
- e. DO NOT apply excessive amounts of blood (circles should not touch each other).
- f. DO NOT get the card wet or handle the circle area.
- g. DO NOT stack the cards together. Do not touch one card to another.
- h. DO NOT expose cards to direct sunlight or heat.

14. Unsatisfactory specimens result in:

- a. Critical time delays in identifying disorders
 - b. Additional work for hospital and NBS staff
 - c. Unnecessary burden on parents who must bring their baby back for a repeat screen
 - d. Infant distress caused by the need for a repeat specimen collection
 - e. Increased cost to the hospital for repeat lab charges
- E. Return all of the card set including the yellow submitters copy to the Phlebotomy Support Technician Lead for final review of completely filled out form and specimen acceptability.
- F. Specimen Processing will receive the specimens and submit them to the Michigan Department of Health following the [Laboratory Specimen Processing and Resulting Newborn Screens](#) procedure.

III. REFERENCES:

- A. Michigan Department of Health & Human Services - [Newborn Screening - Resources for Hospitals and Health Professionals](#)
- B. Lipincott <https://procedures.lww.com/lnp/view.do?pld=6691858&hits=puncture,venous,puncturing,punctures&a=true&ad=false&q=venous%20puncture>

Attachments

[Completing the Newborn Screening Card](#)

Approval Signatures

Step Description	Approver	Date
Medical Directors	Muhammad Arshad: Chief, Pathology	2/28/2024
Medical Directors	Jeremy Powers: Chief, Pathology	2/21/2024
Policy and Forms Steering Committee Approval (if needed)	Kimberly Cole: Spec, Operations	2/21/2024
	Christopher Ferguson: Mgr, Laboratory	2/21/2024
	Lori Saad: Mgr, Lab Support Svcs	2/20/2024
	Marie Borg: Supv, Lab Processing	2/1/2024
	Kimberly Cole: Spec, Operations	2/1/2024

Applicability

Dearborn, Wayne

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