dayton children's	*Procedure Title: Newborn Screen Collection ODH*
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☑	Main Campus	☑	Children's Health Pavilion
☑	South Campus	☑	Kids Express
☑	North Campus	☑	Outreach Testing (Ohio Pediatrics-waived)
☑	Genetics	☑	Outreach (SPL, SP, CMCM, CSP, PMPWD, PMPC, NDPE, PABC, PAN, PAFH)
☑	KTC, VTC, SCCWC	☐	
☑	BTC	☐	
☑	Troy	☐	

1. **Principle and Clinical Significance**
   A. Principle –
      1. Test results help in diagnosing rare, but serious health disorders, often before there is any sign that the disorder exists.
      2. Early diagnosis and appropriate treatment can greatly reduce and often prevent the effects of the disorder for the rest of the individual's life.
   B. Clinical Significance
      1. The **Ohio** Department of Health's **Newborn Screening** (NBS) program identifies **newborn babies** who may be at risk for some rare but serious health conditions.
         a. Babies with rare health conditions can appear healthy at birth.
         b. Affected babies who are not identified through the newborn screening program will develop symptoms and could even die suddenly.
         c. If these conditions are found in the **newborn** period, early treatment may help prevent serious problems with growth and development.
         d. While they can be offered treatment when they show symptoms, by the time symptoms appear, their growth and development may already be impaired.
      2. There are no alternative ways to identify babies with these conditions.

II. **Specimen** – whole blood

III. **Reagents** – N/A

IV. **Equipment and Supplies**
   A. Heel warmer
   B. Alcohol
   C. Gauze
   D. Lancets
   E. Newborn Screening Kit/Card (NBS)

V. **Calibration** – N/A

VI. Quality Control – N/A

VII. Procedure

A. Follow the Patient Identification and Specimen Labeling prior to collection of capillary blood gases.

B. Collect the specimen between 24 hours and 5 days of life (preferably between 24 hours and 48 hours of age), and before the infant is discharged from the hospital of birth.
   1. If the initial screen is collected before the infant is 24 hours old, a repeat specimen must be collected as soon as possible at least 24 hours after birth.
   2. If the infant is to receive a transfusion, a newborn screening specimen shall be collected pre-transfusion, even if the infant is not yet 24 hours of age.
      b. If the pre-transfusion specimen is collected before the infant is 24 hours of age, a post-transfusion specimen shall be collected as soon as possible, but at least 24 hours after transfusion.
      c. The date and time of the most transfusion (prior to specimen collection) must be recorded on the newborn screening card.
      d. A post-transfusion specimen should be collected 30 days following the final blood transfusion.

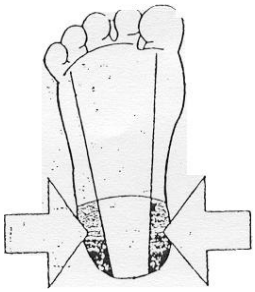
C. Ensure all information on the kit/card is completed in **black** ink.
   1. The demographic information on the newborn screening card should be completed prior to specimen collection to allow for verification of patient identification.
   2. Attempt to complete all fields on the NBS as incomplete or inaccurate information may result in inconclusive or erroneous NBS results.
   3. At a minimum, assure the following is accurately and legibly recorded on the newborn screening card:
      a. Baby's last and first name and if applicable, baby AKA
      b. Date/time of birth
      c. Date/time of specimen collection
      d. Infant's weight at time of collection
      e. Transfusion information
      f. Birth mother/Legal Guardian last and first name
      g. Primary care provider
   4. Staff on the unit will complete the above information on inpatients.

D. Fill out the "Newborn Screen Documentation Form" and leave it with the unit on all units except NICU. NICU documentation forms should be left on the patient's chart.

E. Assess the patient to determine the correct safety lancet to use as determined by:
   1. The age of the patient
   2. The size/weight of the patient
   3. Availability of sites
   4. Tests ordered and the amount of blood required to perform those tests
   5. Use the following guidelines when performing capillary punctures in the NICU:

      a. A Preemie Tenderfoot lancet (purple) should be used for pre-term infants, <1.5 kg or 3 lbs. 5 oz.

      b. A Tenderfoot lancet (green) should be used on terms infants, >1.5 kg or 3 lbs. 5 oz



F. Warm the selected site for 3-5 minutes.
G. Cleanse the skin with 70% isopropanol alcohol and allow to air dry to prevent contamination.
H. Perform the puncture on the lateral portion side of the heel
   1. Follow Capillary Puncture procedure (See attached illustration).
   2. DO NOT touch the filter paper or blood spots as contamination may occur.
I. Wipe away the first drop of blood which may contain alcohol that could affect test results.
J. Allow a large drop of blood to form, which will completely fill the preprinted circle.
K. Gently touch filter paper to large drop, filling the circle.
   1. **Do not** touch the filter paper with patient's foot.
   2. Blood must fill the preprinted circle and soak through to the opposite site.
      a. **Do not** apply blood to both sides.
      b. **Do not** repeat application of blood if the circle is not completely filled as reapplying blood can cause layer and the specimen will be rejected.
L. Go to the next circle and repeat step L until all 5 circles are filled.
   1. Avoid contamination; any foreign substance (e.g., alcohol, hand oils, urine, water, formula etc.) can cause false test results and will result in complete specimen rejection by the laboratory even if ONLY ONE CIRCLE is contaminated.
   2. If all five circles cannot be filled, the patient will have to be stuck again.

3. Excessive squeezing will dilute the blood with tissue fluid and the specimen will be contaminated and rejected; if necessary, repeat the heel stick.
4. Check the quality of the blood spots; specimens will be rejected if at least three blood spots do not meet the quality set forth by the Ohio Department of Health.

M. Allow the card to **air dry** horizontally for at least three hours at room temperature on a flat surface.
1. **Do not** expose specimens to heat or direct sunlight.
2. Wet blood spots should not come in contact with any other surface.
3. Cards may be stacked together while drying as long as the protective flap (attached to the back of the card) is folded over to cover blood spots; do not exceed five cards together while drying.
4. Specimens must **never** be placed in Bio bags for transport.

N. Transport the newborn screen cards to the main laboratory for processing.
1. **Do not** send newborn screen cards through the pneumatic tube.

VIII. Procedural Performance

A. If possible, hydrate the baby prior to specimen collection for better blood flow.

IX. Procedural Notes

A. Specimens can be considered unsatisfactory and rejected for the following reasons:
1. No blood on filter paper
2. Insufficient quantity of blood for test
3. Incomplete saturation of blood through filter paper
4. Supersaturated or layered blood on filter paper
5. Blood applied to both sides of filter paper
6. Blood appears clotted
7. Diluted, discolored, or contaminated specimen or filter paper
8. Excess serum or tissue fluids in specimen
9. Filter paper appears scratched or abraded
10. Blood spots not dried at least 3 hours prior to shipping
11. Specimen received by laboratory more than 14 days after collection
12. Number on filter paper does not match barcode on demographic sheet
13. Demographic information does not match blood (wrong baby drawn on card)

B. Immediately redraw any specimen that does not meet quality standards to avoid delaying newborn screening.

X. References

A. Ohio Department of Health website

XI. Related Documents – N/A