Newborn Screening

POLICY 6.04.02
Patient Care
Newborn Screening
Issued: 12/1991
Last Approval: 08/2018

Office of Origin: Benioff Children's Hospital Administration.

I. PURPOSE

To specify the role of Benioff Children's Hospital (BCH) in complying with the California Department of Public Health (CDPH) requirements for state mandated newborn screening and to describe the process for obtaining a sample for the Newborn Screening Test sample by the bedside nurse.

II. REFERENCES

Title 17. California Code of Regulations Sections 6500 – 6507.6 (State Newborn Screening Program Hospital Manual (2017).

Clinical Laboratory Standards Institute, Vol.27, No. 20, "Blood Collection on Filter Paper for Newborn Screening Programs," 5th Edition.

III. DEFINITIONS

APeX: UCSF's electronic medical record, inclusive of all systems that contribute to the permanent medical record.

Newborn Screening Test: An assay of blood spots collected from an infant for the purpose of determining whether the newborn might be at increased risk for certain genetic and other congenital disorders for which early identification and treatment may prevent disability and/or death.

IV. POLICY

A. All neonates born or transported into UCSF Medical Center before one day of age will have a Newborn Screening Test obtained.

B. Parents will be informed of the purpose of testing, specimen collection, screening and reporting of results. Parents will be informed that to protect the health of all its newborns, state law require that all babies born in California have the Newborn Screening Test before leaving the hospital. All parents will be provided with a copy of the pamphlet, "Important Information for Parents," upon admission to the perinatal unit. This pamphlet will also be included in the admission package for parents of neonates admitted to BCH.

C. Specimen collection is no earlier than 12 hours of age and no later than 48 hours of life. Ideal collection time is between 24 and 48 hours of life. The infant should not be less than 12 hours unless transfusion of blood is ordered.

1. Early collection can affect the results for other metabolic and hypothyroidism screening. It can result in a false positive for primary congenital hypothyroidism due to the biological phenomenon known as "neonatal surge."
2. Early collection could result in false negative for phenylketonuria and other amino acid disorders.
3. Platelets, plasma and albumin will not affect the results.
4. If red blood cell transfusion is ordered prior to 12 hours of age, obtain specimen before transfusion and collect a second specimen 24 hours after completion of the transfusion and/or exchange transfusion. If patient is on extracorporeal membrane oxygenation

(ECMO), repeat the newborn screen 48 hours after off ECMO.

D. If the newborn screen specimen is not collected prior to red blood cell transfusion or exchange transfusion

1. Collect the sample 24 hours after completion of the transfusion.
2. The infant will need to be monitored for galactosemia by the provider.
3. Contact Newborn Screening Program at Stanford University for further optional testing if there is concern for inherited hemoglobin disorders. The phone number is (650) 724-8120.

E. For neonates who received intrauterine transfusion(s)

1. Send newborn screen per Section C.
2. Consider Hb DNA testing on a whole blood sample if there is concern for inherited hemoglobin disorders.
   a. Contact Newborn Screening Program at Stanford University to coordinate this additional testing.
3. The infant will need to be monitored for galactosemia by the provider.

F. All infants transported to BCH less than 1 month old will have confirmation that a screen has been sent

1. UCSF transport personnel will "hand off" the sender's copy of the Newborn Screening Test form indicating that the screening specimen was not obtained prior to transport of the infant to UCSF Medical Center.
   a. "Hand off" will be to the admitting nurse or the provider.
   b. Copy of the "Sender's Copy" (yellow) from the sending hospital must indicate the date and time of specimen collection or that the specimen was not obtained.
   c. The Unit Clerk (HUSC) will call and/or fax an urgent newborn screen look-up request to the Newborn Screening Center fax ([redacted]) [redacted] to confirm that the sample has been sent with a form number to be used for tracking.
   d. If specimen was not obtained at sending hospital, a test request form will be completed at BCH and the newborn screen will be obtained per Section C.

G. Results of the Newborn Screening Test in the medical record

1. An APeX report shall be generated on a unit specific basis (bi-weekly or daily) to compare the names of the infants born at UCSF, admitted under 1 month of age to the ICN and other units in the BCH, with those who have results or results pending for Newborn Screening Tests in the lab section of the medical record. This report review will ensure that each newborn's record has been audited within 14 days of discharge or sooner to determine that the results of the required tests are filed in the medical record; or the parent's refusal for the test has been placed in the medical record.

H. Confirmed positive results are referred to the UCSF Genetics Division (PKU), UCSF Pediatric Endocrinology Division in consultation with the neonate's physician (hypothyroidism), and San Francisco General Hospital Sickle cell Disease Center or CCS Approved Sickle Cell Disease Center (sickle cell and other hemoglobinopathies). The

positive results will also be sent to the Division of Neonatology or Pediatric Medicine and documented in the patient's medical record at the time the results become available and at the time of discharge.

I. All newborns admitted after a home birth will have a Newborn Screening Test done when admitted to the ICN or other BCH unit.

J. Obtaining a Sample

1. Obtain a California Newborn Screening Test request form from the Unit Clerk (HUSC). Check the form for completeness using the neonatal screen checklist. Confirm identity of infant to be screened using name and medical record number.
2. Warm the heel.
3. Clean the lateral heel using alcohol and allow drying.
4. Position the infant's leg lower than the heart to increase venous pressure.
5. Lance heel with lancet along the outer heel margin.
6. Allow blood to accumulate, wipe away first drop using sterile gauze.
7. Wait for the formation of a large blood droplet and gently touch the blood drop to the filter paper.
8. Proceed to fill each circle on the collection paper with one large drip per circle. Try and avoid repeated applications to the paper.
9. Obtain a sample from a central line in infants too small or sick to collect a heel stick sample and make that notation on the screening form by indicating "other."
10. Allow blood specimen to air dry thoroughly, on a horizontally level, non- absorbent drying rack.
11. Return dried specimen to the Unit Clerk (HUSC) to be sent to the clinical lab.
12. Document the specimen collection in APeX.

V. RESPONSIBILITY

Questions about the implementation of this policy should be directed to the UCSF Intensive Care Nursery (415) 353-1565 or UCSF Center for Mothers and Newborns (415) 353-1787.

VI. HISTORY OF POLICY

Issued December 1991 Reviewed November 2001

Revised March 2004 by Michelle Cathcart, RN, Patient Care Manager, Intensive Care Nursery

Reviewed March 2004 by Lila Param, RN, MS, Assistant Director of Nursing, Perinatal Services

Reviewed March 2004 by Carol Miller, MD, Newborn Hearing Screening Program Director

Reviewed March 2004 by Policy Steering Committee

Reviewed March 2004 by Strategic Leadership Council

Approved March 2004 by Executive Medical Board, Governance Advisory Council and J. Michael Bishop

Revised: March 2013 by Linda Lefrak, ICN Joint Practice Committee

Reviewed and Approved September 2013 by Policy Steering Committee

Reviewed and Approved September 2013 by the Executive Medical Board and Governance Advisory Council

Reviewed July 2014 by June Chan, RN, Director of BCH (no substantive changes)

Reviewed and Approved August 2014 by Policy Steering Committee

Reviewed and Approved August 2014 by Executive Medical Board and Governance Advisory Council

Reviewed and Approved August 2018 by Policy Steering Committee

Reviewed and Approved August 2018 by Executive Medical Board and Governance Advisory Council

VII. APPENDIX

Not applicable.