

Newborn Screening for NICU Infants < 1800 Grams Provider Fact Sheet

Newborn screening and premature infants

Newborn Screening is an important part of infant health maintenance. However, like so many other programs designed primarily for the healthy term baby, newborn screening of the premature, low birth weight, and ill infants is not a simple or straightforward process. The neonates' immaturity and the necessary therapeutic interventions interfere with both the collection of samples and the interpretation of newborn screening results.

Why should premature infants be screened differently?

Premature infants should be screened differently to minimize both the false positive and false negative results in these small babies. Collecting three specimens from each infant, and viewing the results together, will give a clearer picture of the neonate's risk for the disorders included in Michigan's screening panel.

How should the specimens be collected?

Specimens should be collected on the blue screening cards at 24-36 hours after birth, unless the infant receives blood. In this case, obtain the specimen prior to blood administration including ECHMO (Extracorporeal Membrane Oxygenation). Repeat specimens are obtained on pink cards at 14 and 30 days of age or upon discharge if discharge is prior to 14 or 30 days of age. Ordering all three screens upon the infant's admission to the NICU will be most efficient. If the baby goes home after the 2nd specimen, then that is the last specimen.

Why obtain specimen before transfusion or TPN?

If the infant requires transfusion or TPN before 24 hours of age, collect the initial specimen pre-transfusion/TPN and specimens at 14 and 30 days of age or upon discharge.

If the infant receives a transfusion or TPN before the initial screen is collected still proceed to collect an initial 24-hour specimen and specimens at 14 and 30 days of age. In addition, if the infant receives continuous transfusion and/or TPN during the first 30 days, a repeat specimen should be obtained 72 hours after discontinuing transfusion and/or TPN and at 90 days post transfusion. Alternatively, if there is a 72-hour window of opportunity during the first 30 days that the infant is not being transfused or receiving TPN, the post-72 hour repeat specimen

should be obtained at that time. This specimen would be in place of the 14 or 30-day specimen whichever is closer. The 90-day post transfusion specimen would still be required.

Are these screens done differently than regular newborn screens?

No. The laboratory testing is the same. Clinicians will still be notified of all abnormal results.

Are the reports different?

The report format is the same for all newborns except as noted below. Please follow instructions on the reports in obtaining repeats when requested.

The following situations are reported differently for infants in the NICU:

- If the initial screen for congenital adrenal hyperplasia (CAH) is positive, the report will suggest clinical evaluation of the infant and a repeat screen at 14 and 30 days of age. Positive results on repeat screens will be treated the same way as positive results on other babies.
- If the amino acid pattern is consistent with transfusions and/or total parenteral nutrition (TPN) on the initial or 14-day sample, no special action will be recommended; the next screening sample will simply be requested. Only if the result is consistent with TPN on the 30 day specimen is the request made to repeat the newborn screen >72 hours after TPN and/or transfusions discontinued.

Any questions about requests for repeats or infant status in relationship to testing can be answered by medical management centers.

Where can I get additional information?

- Newborn Screening NICU Provider Manual for Michigan is available on-line at: <http://www.michigan.gov/newbornscreening> Hard copy versions of the manual are provided to Michigan's NICU coordinators.
- The staff of the Newborn Screening Program at the Michigan Department of Community Health is available to answer your questions at 1-866-673-9939.

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