

# FROM SPECIMEN COLLECTION TO RECEIPT FOR TESTING

## *Newborn Screening Transit Times*

**THE ISSUE n THE IMPORTANCE n RECOMMENDATIONS**



Texas DSHS Newborn Screening Laboratory

2014

# Importance of Timely Specimen Delivery



- Texas NBS panel includes 29 disorders tested by blood spot.
- Some disorders may cause serious permanent damage within 5 days of life.
- Identifying and treating these disorders in the first few days of life can prevent:
  - § Serious physical issues
  - § Developmental delays
  - § Intellectual disabilities
  - § Sudden or early death
- Imperative to minimize the time from specimen collection to test result.



# Specimen Collection Rules and Instructions

- Texas Administrative Code (Rules)
  - § Blood specimens must be mailed to the DSHS laboratory within 24 hours after collection.
- Instructions
  - § Must ship dried specimen WITHIN 24 HOURS.
  - § DO NOT hold specimens for bulk mailing. Send within 24 hours of collection.

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### TEXAS NEWBORN SCREENING INSTRUCTIONS

A first specimen is required for all newborns at 24-48 hours of age, or just prior to discharge. A second specimen is also required at 7-14 days of age.

Invalid results may occur with:

- Infants having received a transfusion.
- Specimens accompanied by improper or incomplete paper work.
- Starts on TPN.

DO NOT use expired form.  
 DO NOT use anticoagulant glucose, such as Cholesterol Swabs.  
 DO NOT use devices that contain EDTA or citrate anticoagulant.  
 DO NOT use capillary tubes.  
 DO NOT use expired or damaged collection or dried analysis tubes.  
 DO NOT hold specimens for bulk mailing. Send within 24 hours of collection.

**Texas Newborn Screening Parent Information Report (PIR) Form**

1. Give copy to parent for all screens. For 1<sup>st</sup> screen, explain that the form must be taken to the baby's doctor at the baby's 7-14 day check-up.  
 2. Parent or submitter may fill out Section 1. A parent label with the requested information is acceptable.  
 3. Parent reviews, completes, and signs form.  
 4. Send to DSHS Laboratory Services (see below) and spot cards if parent requests. It is the parent's option to take the form home and return to DSHS by mail at a later date.

**Demographic Form (Page 3)**

1. Legibly print ALL information. **USE BLOCK LETTERS AND BLOCK CAPITAL LETTERS.** Press hard for good copies.  
 2. For 2<sup>nd</sup> screen(s) if available, fill in the serial number for the baby's 1<sup>st</sup> screen in the space provided.  
 3. Fill in the number to include baby's Sex, "Feed", Ethnicity, Status and Baby's Age at Time of Collection/Treat.  
 4. If the specimen is a repeat for a previous abnormal, fill in the Texas DSHS Under-Submitter information. Fill in the address where the results are to be sent. Labels for this may be ordered from Texas DSHS, Laboratory Services Section.  
 5. Complete the box on demographic information sheet that indicates "Check to verify parent information & decision form distributed."  
 6. Remove and keep the yellow submitter copy of the demographic information.  
 7. **Collection Procedure:** Cord blood is not acceptable.  
 1. Place baby's limbs in dependent position.  
 2. Cleanse skin with alcohol, DIBX, and puncture with disposable lancet.  
 3. Wipe off first drop of blood.  
 4. Apply the heel of the heel to the spot card. Apply the heel of the heel to one side only while viewing from the other side to ensure **COMPLETE SATURATION OF THE ENTIRE CIRCLE** (see below).  
 5. **DO NOT** allow specimen to touch any surface.  
 6. **DO NOT** allow specimen to touch any surface.  
 7. Cover dried specimen with attached flap.  
 8. Mail ship dried specimen **WITHIN 24 HOURS** in provided envelope to Laboratory Services Section  
 P.O. Box 148841  
 Austin, TX 78714 - 9341



Collected sample from shaded area


Acceptable


Unacceptable


Insufficient, multiple applications


Serum rings present



To order more Newborn Screening Collection Kits, contact  
 Texas Department of State Health Services  
 Laboratory Services Section  
 1-888-963-7111 ext. 7661  
 Fax: 1-512-776-7672

## INSURANCE / SELF-PAY

PerkinElmer Health Solutions, Inc.  
 17 FARM DAM, GOWAN, NJ 07028 USA



BIOHAZARD

# What is the *issue*?



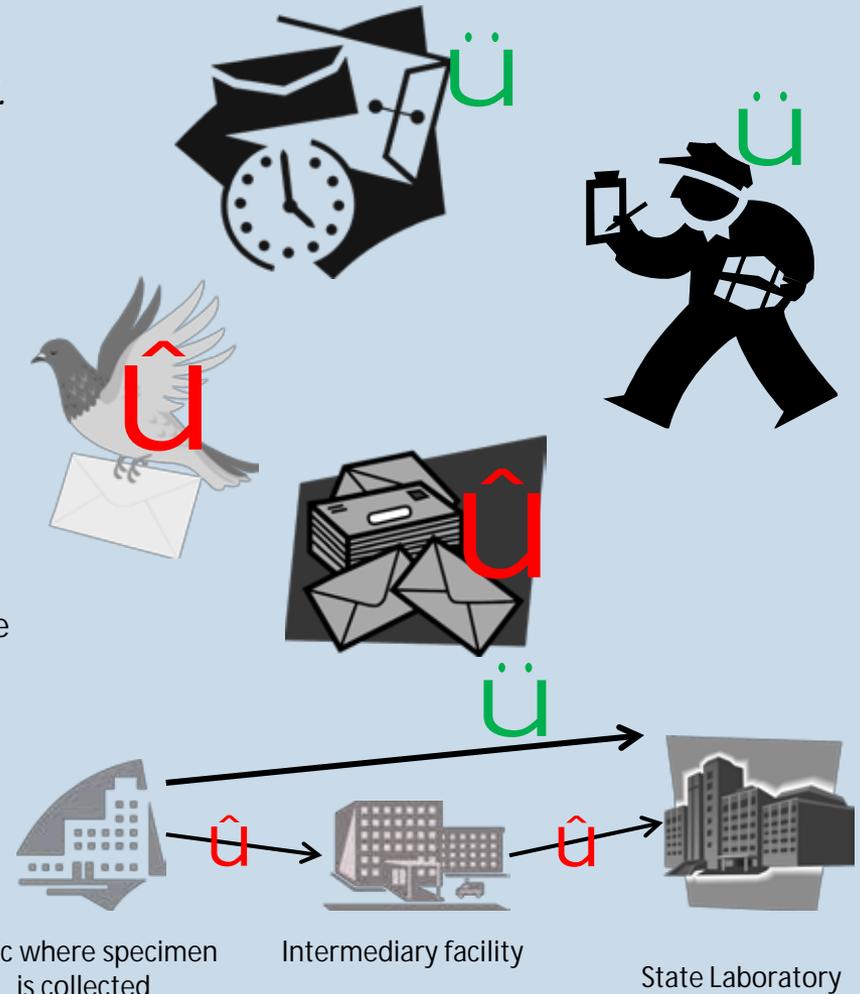
- What is “transit time”?
  - § The “transit time” of a newborn screening specimen is the time between the collection of the specimen and receipt in the DSHS laboratory for testing.
  - § Specimens should be shipped to the laboratory in a timely manner and received in the laboratory within 3 days of collection.
  
- Increased emphasis on the importance of transit times:
  - § DSHS Newborn Screening program implements quality improvement initiatives focusing on improving transit times.
  - § In 2009, baby with MCAD dies at 4 days of age in Colorado. Mother becomes active advocate.
  - § Media attention focused on timeliness in newborn screening (Milwaukee Journal Sentinel, Minnesota Post, NPR, WOAI San Antonio, Arizona Republic)



# How to Improve (Decrease) Specimen Transit Time

**GOAL:** All Newborn Screening specimens should be received in the DSHS laboratory **NO LATER THAN 3 DAYS AFTER COLLECTION.**

- **SHIP DRIED SPECIMENS WITHIN 24 HOURS** of collection, preferably via overnight courier. If mail or courier services are unavailable, ship as quickly as possible.
- **DO NOT** delay shipment of newborn screening specimens.
- **DO NOT** batch or hold dried specimens for shipping.
- Ship dried specimens **DIRECTLY** from the collection facility to the DSHS laboratory. Using an intermediary facility for processing of specimens prior to the specimen shipping to the laboratory may cause unnecessary delays).
- Identify possible process improvements at your facility to minimize transit time.
- Contact the DSHS Newborn Screening Laboratory for assistance if needed.



# Newborn Screening Education– Transit Times



## Quality Improvement Initiatives :

- Newborn Screening Monthly Report Cards include submitter specific and statewide comparative data for meeting the recommended timeframe for delivery of specimens.
- Regular reminders about holiday closures that may impact transit times.
- Notices that focus on the issue of delayed transit times and advise on minimizing transit times.
- Quality Improvement hints on specimen collection, drying and shipment sent through the email distribution list.
- DSHS Contracted Courier Pilot Program (started in 2010).
- Newborn Screening presentations including Information on transit times.
- Development of a specialized “Transit Time Workgroup” to focus on poor-performing facilities and initiate communication, education and follow-up.
- Newborn Screening “Special Feature” Newsletter on Transit Times.

# Monthly Newborn Screening Report Cards

- Monitor/Review your Newborn Screening Report Card

<http://www.dshs.state.tx.us/lab/nbsHCRes.shtm>

Report Card includes information on:

- § Total # of specimens submitted by the facility
  - § Total # of specimens with quality issues & most frequent quality issues
  - § Timing of collections by your facility
  - § **Specimen transit time from collection to the state laboratory**
  - § Total # of specimens missing key demographic information
- Produced monthly
  - Facility-specific data compared to State Average
  - Reports available for January 2013 forward.

**TEXAS** Department of State Health Services  
LABORATORY SERVICES SECTION

Mailing Address:  
PO BOX 149347  
AUSTIN, TEXAS 78714-9347  
1-888-963-7111 ext. 7333  
www.dshs.state.tx.us

**Newborn Screening (NBS) Report Card - Specimen Submission**  
Report Date: January 08, 2014  
Provider Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Provider ID: \_\_\_\_\_

Performance Period: December 01, 2013 - December 31, 2013

| Provider Submission Volume  | Total |
|---|-------|
| Number of NBS specimens submitted   | 1,010 |
| Number of initial screen NBS specimens submitted (e.g. Birth to 7 days old) | 945   |
| Number of second screen NBS specimens submitted (e.g. 7 days or older)      | 65    |

| Specimen: Unavailable for Testing  | Count | Percent | State Average | Goal |
|--|-------|---------|---------------|------|
| Total number of specimens with quality issues                              | 9     | 0.89%   | 1.74%         | 0%   |
| Specimens that are unsatisfactory to test for any of the disorders         | 7     | 0.69%   | 1.10%         | 0%   |
| Specimens for which results can be reported for some but not all disorders | 2     | 0.20%   | 0.64%         | 0%   |

**Most frequent quality issues this reporting period for your facility \***

|  |   |       |
|--|---|-------|
| Blood did not Soak Through Paper - Incomplete saturation           | 5 | 0.50% |
| Blood was Caked, Clotted, or Layered onto the Filter Paper         | 2 | 0.20% |
| Filter paper is scratched from the possible use of capillary tubes | 2 | 0.20% |

\* Each specimen may have up to 3 separate quality issues

| Timing on Initial NBS Specimen Collection | Count | Percent | State Average | Goal |
|---|-------|---------|---------------|------|
| Goal: Collected between 24 and 48 hours   | 921   | 97.46%  | 95.84%        | 100% |
| Collected too early: <24 hours of age     | 15    | 1.50%   | 8.71%         | 0%   |
| Collected late: >48 hours of age          | 9     | 0.93%   | 4.44%         | 0%   |

| Specimen Transit Time from Collection to State Laboratory | Count | Percent | State Average | Goal |
|---|-------|---------|---------------|------|
| Goal: Received within 72 hrs from collection              | 699   | 69.21%  | 56.79%        | 100% |
| Received by state laboratory <24 hrs from collection      | 110   | 10.89%  | 9.90%         | 0%   |
| Received by state laboratory <48 hrs from collection      | 550   | 54.46%  | 37.46%        | 0%   |
| Received on day 14 or more - rejected for testing         | 0     | 0.00%   | 0.18%         | 0%   |

## Specimen Transit Time from Collection to State Laboratory

|  | Count | Percent | State Average | Goal |
|--|-------|---------|---------------|------|
| Goal: Received within 72 hrs from collection         | 495   | 90.49%  | 68.02%        | 100% |
| Received by state laboratory <24 hrs from collection | 203   | 37.11%  | 12.33%        |      |
| Received by state laboratory <48 hrs from collection | 406   | 74.22%  | 46.10%        |      |
| Received on day 14 or more - rejected for testing    | 0     | 0.00%   | 0.11%         | 0%   |

# Accessing Newborn Screening Report Cards



To access your facility's report card, you must be a registered user of the Texas Newborn Screening Web Application (Neometrics).



Not already a registered user? Signing up is EASY!

**1. Download forms from:**

<http://www.dshs.state.tx.us/lab/remotedata.shtm>

**2. Fill out:**

Security/Confidentiality Agreement (1 per facility) AND  
Web User Agreements (1 for each user)

**3. Submit:**

Fax to: 512-776-7157, Attn: Remote Lab Support, L357.1  
Or e-mail to: [remotelabsupport@dshs.state.tx.us](mailto:remotelabsupport@dshs.state.tx.us)

For help, call: 888-963-7111 X6642, X2639 or X6030

# The DSHS Newborn Screening Laboratory—Transit Time Workgroup



- Monthly contact of the top 10 sites with the poorest transit times.
- Regular monitoring and feedback for the facilities that were included in Milwaukee Journal Sentinel report.
- Reassessment of the DSHS Courier Pilot Program to maximize efficiency.
- Notices about transit times and best practices for meeting the recommended time frame.
- Development of Spotlight Award to recognize facilities with best transit times and adherence to specimen collection timeframes.
- Development of a survey for healthcare providers to gauge barriers to timely delivery of newborn screening specimens.



# Common Barriers to Meeting Recommended Timeframe



- Cost of using an overnight courier for shipment of specimens.
- Use of hub hospitals as intermediary shipment points before sending specimens to the DSHS Laboratory.
- Batching of samples taken over multiple days before shipment due to cost concerns.
- Flawed systems and communications among departments within hospitals (i.e. nursery, lab, and shipping).
- Misinterpretation or miscommunication about the timeline for specimen collection, drying, and shipment.



# Model Birthing Facility Workflow to Minimize Transit Time of Newborn Screening Specimens



*Developed with the help of facilities with very good transit times*

1. Newborn Screening specimens are collected before 7am and allowed to dry for 3-4 hours.
2. The facility Newborn Screening Coordinator (or the assigned backup staff person):
  - § Gathers specimens from all areas by about 11:30am.
  - § Checks specimen quality and accuracy / legibility of demographic information.
  - § Follows up with the nursery or other areas regarding any specimens that have pending orders for which they have no newborn screening specimen in hand.
  - § Accounts for all newborn screening orders.
3. All specimens are logged for documentation of shipment (An overnight courier (FedEx, UPS, etc.) is recommended for shipping specimens).
4. When final test results are received, the specimen log is used to verify receipt of results for each specimen (College of American Pathologists (CAP) Laboratory Accreditation Program requirement).

# Other Quality Improvement Tools for Healthcare Providers Provided by the DSHS Newborn Screening Program



- Online provider resources and educational tools.
- Monthly report cards that allow facilities to identify strengths and weaknesses within their internal processes.
- Newborn Screening email distribution list to provide healthcare providers with regular quality improvement tips and newborn screening updates.
- Immediate fax notification to submitters when a specimen is deemed unsatisfactory to test.
- Monthly consult with facilities that have high unsatisfactory rates.



# Resources



- Healthcare Provider Resources: <http://www.dshs.state.tx.us/lab/nbsHCRes.shtm>
- NBS Specimen Collection Requirements: [http://www.dshs.state.tx.us/lab/nbs\\_collect\\_reqs.shtm](http://www.dshs.state.tx.us/lab/nbs_collect_reqs.shtm)
- Free Parent & Provider Educational Materials: <https://www.dshs.state.tx.us/newborn/pubs.shtm>
- Email the Newborn Screening Laboratory: [NewbornScreeningLab@dshs.state.tx.us](mailto:NewbornScreeningLab@dshs.state.tx.us)  
*Let us know if you'd like to receive regular Newborn Screening Updates!*
- Recent Newborn Screening Notices: <http://www.dshs.state.tx.us/lab/nbsNotices.htm>
- Milwaukee Journal Sentinel Article: Deadly Delays: <http://www.jsonline.com/watchdog/Deadly-Delays-Watchdog-Report-newborn-screening-program-231927171.html>
- Call the Newborn Screening Laboratory: 888-963-7111 X 7333 (local calls: 512-776-7333)

# Questions?

