

SPOTlight

SPECIAL FEATURE

FROM SPECIMEN COLLECTION TO RECEIPT FOR TESTING

Newborn Screening Transit Times

In Texas, the first Newborn Screen is collected between 24 and 48 hours after birth, and a follow-up screen is collected between one and two weeks of age. The first screen provides a snap-shot of invaluable information about an infant's health and cannot be replicated. Most importantly, some disorders may cause serious permanent damage ***within the first five days of life.*** For these reasons, it is imperative that the first screen be collected correctly and quickly sent to the Laboratory for timely testing. The "transit time" of a newborn screening specimen is the time between the collection of the specimen and receipt in the laboratory for testing. Delays in transit time result in delayed testing, and the possible delayed or missed diagnosis of a child.

TEXAS NEWBORN SCREENING PROGRAM RECOMMENDATIONS:

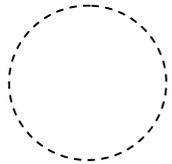
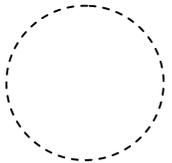
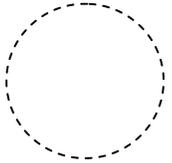
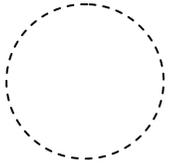
- All Newborn Screening specimens should be received in the laboratory **NO LATER THAN 3 DAYS AFTER COLLECTION.**
- **SHIP DRIED SPECIMENS WITHIN 24 HOURS,** preferably via overnight courier. If mail or courier services are unavailable, ship as quickly as possible.
- **DO NOT** delay shipment of newborn screening specimens.
- **DO NOT** batch or hold dried specimens for shipping.
- Ship dried specimens **DIRECTLY** from the collection facility to the Newborn Screening Laboratory
- Review your facility's transit times and other performance measures on the monthly Newborn Screening Report Card.
- Identify possible process improvements at your facility to minimize transit time.

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TEXAS NEWBORN SCREENING PROGRAM QUALITY IMPROVEMENT INITIATIVES: **SPECIAL FOCUS ON TRANSIT TIMES**



Quality Improvement Initiatives Focused on Transit Times:

- Newborn Screening Monthly Report Cards that 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 are distributed.
- Notices sent by email and mail that focus on the issue of delayed transit times and advise on possible workflows that minimize transit times.
- Quality Improvement hints on specimen collection, drying and shipment sent through the email distribution list.
- Courier pilot program was implemented in the spring of 2010, to provide a quicker transit time for as many facilities and specimens as funding would allow.
- Provide onsite Newborn Screening presentations including Information on transit times .
- Development of a specialized “Transit Time Workgroup” which identifies poor-performing facilities and initiates communication, education and follow-up.

DSHS Newborn Screening Laboratory—Transit Time Workgroup:

- Monthly contact to the top 10 sites with poor transit times to provide feedback, education and possible solutions to overcoming barriers in meeting the recommended time frame
- Regular monitoring and feedback on transit times for the facilities that were included in the Milwaukee Journal Sentinel report (see page 4).
- Reassessment of the DSHS Courier Pilot Program to maximize efficiency.
- Development and dissemination of notices about transit times and best practices for meeting the recommended time frame of receipt within 3 days of collection (see Model Workflow below).
- 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 submission and receipt of newborn screening specimens.

The 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).

What is the Newborn Screening Report Card?

The monthly report card provides information on quality issues such as specimen quality, data completeness, and timeliness of specimen collection and shipment to the DSHS laboratory. Facilities are encouraged to contact the DSHS laboratory for any needed assistance as they seek to resolve quality issues.

Accessing Your Newborn Screening Report Card

Sign up to access the Texas Newborn Screening Web Application (Neometrics). For information on how to apply, the forms needed, and frequently asked questions: <http://www.dshs.state.tx.us/lab/remotedata.shtm>

Once you have received your Newborn Screening Web Application account, log in to <https://dshsnbsweb.dshs.state.tx.us/toolbar/login.aspx>. You will need Adobe Acrobat Reader to view your result reports and report cards. Your report cards are organized by month.

The Sections of the Newborn Screening Report Card

Provider Information

Verify your facility contact information is correct. To update incorrect information, download a [DSHS Submitter ID Request/Update form](#) from the laboratory website and fax your completed form to Lab Reporting at 512-776-7533.

Provider Submission Volume

Note the number of Newborn Screening specimens received by DSHS from your facility.

Specimens Unsuitable for Testing

Compare your facility's newborn screening specimen unsatisfactory rate with the statewide rate for all providers who submit newborn screening specimens.

Most frequent quality issues

Review this information and refer to the DSHS Laboratory unsatisfactory specimen web page (<http://www.dshs.state.tx.us/lab/unsatExamples.shtm>) [for examples and tips on avoiding your facility's most common unsatisfactory specimen issues.](#)

Timing on Initial NBS Specimen Collection

Analyze your facility's success rate in collecting the initial (first) newborn screen within the recommended time frame of 24-48 hours after birth.

Specimen Transit Time information

Ensure your facility is shipping dried specimens WITHIN 24 HOURS of collection, preferably by overnight courier. If mail or courier services are unavailable, ship as quickly as possible. Specimens should complete drying in 3 to 4 hours. The goal is to have 100% of specimens received by DSHS within 3 days of collection.

Specimens Missing Key Demographic Information

All information requested on the Newborn Screening Specimen Collection form is important for accurate testing and time sensitive follow-up. Review this section to:

- Identify key information that your facility does not consistently provide.
- Investigate means to improve



Access DSHS Laboratory resources for help in improving your facility's success rates.

NBS Web Healthcare Provider Resources:
<http://www.dshs.state.tx.us/lab/nbsHCRes.shtm>

Telephone: 1-888-963-7111 X7585

Newborn Screening Facility Report Cards are available online, from January 2013 to present.

Read family stories featured in The Journal Sentinel article online at:

<http://www.jsonline.com/watchdog/Deadly-Delays-Watchdog-Report-newborn-screening-program-231927171.html>

“One of newborn screening’s most important metrics—speed—is ignored for tens of thousands of babies’ tests each year...”

The Journal Sentinel, “Deadly Delays”, November 2013.

Media Attention on Newborn Screening Transit Times

“Deadly Delays”: A Journal Sentinel Watchdog Report

In 2013, The Journal Sentinel in Milwaukee, WI published a national report highlighting the nation’s newborn screening state programs entitled “Deadly Delays.” The article detailed a nationwide open records effort to profile state newborn screening data and highlight areas that are lacking in terms of timeliness of sample to lab transit, hospital accountability on reporting and other challenges that are often unknown. Twenty four states and Washington, DC would not release data identifying hospitals. The three states with the highest number of births (California, Texas and New York) did release newborn screening data for the report that included hospital names.

The nationwide analysis included over 3 million screening tests for the participating states. For a public health program and system over 50 years old, the report revealed a number of gaps. Speed, one of the most critical metrics, appeared to be one of the biggest areas in need of quality improvement.

[Read the article, “Deadly Delays.”](#)

In addition to the Milwaukee Journal Sentinel article, other media on state program reporting issues have heightened public and industry awareness on delays and coordination challenges. New legislation (S.1417/H.R.1281 – Newborn Screening Saves Lives Reauthorization Act of 2013) has placed new emphasis on the timeliness of reporting and evaluation, as well as highlighted best practices to eliminate barriers to timely care interventions for babies needing immediate medical attention.

A LOOK AT TEXAS...

TX Newborn Screening program overview:

- State Laboratory tests samples.
- Hospitals should send samples by courier, overnight delivery or express mail.
- Testing Laboratory in Texas is open Monday through Saturday.
- Hospitals must send samples within 24 hrs. of collection.
- <http://www.dshs.state.tx.us/newborn/>

2012 TEXAS STATS: (from THE JOURNAL SENTINEL report, November 2013)

374,019 (first screen samples tested in 2012)

54,426 (samples that took 5+ days to reach Lab; 14.55%)

213 (facilities that had more than 5% of samples reach a Lab 5+ days from collection)

31* (conditions tested in Texas)

** This number reflects 28 genetic disorders, hypothyroidism, Critical Congenital Heart Disease, and hearing screening.*

QUALITY IMPROVEMENT PROJECTS AT DSHS

In December 2013, Dr. Susan Tanksley (DSHS Laboratory Operations) and Vanessa Telles (DSHS Laboratory Special Projects Coordinator) presented information on Newborn Screening quality improvement (QI) initiatives in Texas to the NBS Advisory Committee. The presentation focus was the laboratory's adoption of a Lean Six Sigma model approach to quality improvement.

What is Lean Six Sigma?

- Lean Six Sigma is a methodology that integrates concepts and tools from both Lean operations and Six Sigma methodologies.
- Lean operations address the reduction of waste and cycle time and is generally attributed to Toyota manufacturing.
- Six Sigma focuses on reducing errors, and improving customer acceptance. This method was developed by Motorola.
- Key staff within the organization are “champions” or “experts” at the different levels, and are all trained in the five primary stages of the Lean Six Sigma approach.
- The 5 stages of Lean Six Sigma Quality Improvement are:
 1. Define the problem and set a goal.
 2. Measure the baseline and key metrics.
 3. Analyze data and process.
 4. Implement improved process.
 5. Control through maintenance and quality monitoring.

Lean Six Sigma at the DSHS Laboratory:

The Lean Six Sigma Green Belt team is examining processes from the arrival of specimens in the laboratory to the final reporting step in an effort to remove delays, duplications and bottlenecks.

The team's project objective:

This project's focus is to improve the turn-around-time of abnormal results for the most critical NBS tests. In addition, the overall average NBS turn-around-time will be monitored for impact relating to changes made to improve the abnormal result turn-around-time.

QI team focus includes:

- *Specimen receipt, accessioning into lab workflow and initial specimen preparation processes.*
- *Processes for handling of specimens needing additional submitter contact to obtain all required information and the entry of the patient demographics into the lab computer.*
- *Congenital Hypothyroidism testing workflow.*
- *Galactosemia testing workflow.*
- *Tandem Mass Spectrometry testing workflow*

Target completion date: Spring 2014

The DSHS

Biochemistry and Genetics Branch

houses the state newborn screening and clinical chemistry laboratories, a high-volume testing area that processes over **4,500** specimens per day (both newborn screening and clinical chemistry specimens). Specimens specific to newborn screening average between **2000 and 3000** specimens per day.

Texas Newborn Screening Laboratory:

Annually screens **~750,000** specimens, and helps identify disorders in **~800** babies who, without treatment, would be subject to serious complications and even death. Since the inception of this vital program, an estimated **12,000** babies have been diagnosed with one of the screened disorders through this vital program.

MORE QUALITY IMPROVEMENT IN TEXAS

The DSHS Laboratory continuously engages in quality assurance activities to ensure that the newborn screening process, from specimen collection to test result, is consistently efficient.

Quality Improvement Assistance for Healthcare Providers:

- 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.
- Internal projects to reduce the time between receipt of newborn screening specimens and results that lead to follow-up and treatment.
- Immediate fax notification to submitters when a specimen is deemed unsatisfactory to test, in an effort to assist in prompt re-collection.
- Monthly consult with facilities that have high unsatisfactory rates to provide education, inform of resources and gather feedback on difficulties in the specimen collection process.

Helpful links:

- **Healthcare Provider Resources:** <http://www.dshs.state.tx.us/lab/nbsHCRes.shtm>
- **Newborn Screening Specimen Collection Requirements:** http://www.dshs.state.tx.us/lab/nbs_collect_reqs.shtm
- **Free Parent and Provider Educational Materials:** <https://www.dshs.state.tx.us/newborn/pubs.shtm>
- **Click here to** [Sign up for NBS Email List Service Announcements](#)
- **Email the Newborn Screening Laboratory:** NewbornScreeningLab@dshs.state.tx.us
- **Recent Newborn Screening Notices:** <http://www.dshs.state.tx.us/lab/nbsNotices.htm>

The Texas Newborn Screening newsletter is published through the Texas Department of State Health Services (DSHS), Family and Community Health Services, Newborn Screening Unit in Austin, Texas.

For questions, please contact the DSHS Newborn Screening Program at :

1-800-252-8023, ext. 3957

or access the website:
www.dshs.state.tx.us/newborn.

For questions, for the DSHS Newborn Screening Laboratory, including questions about the monthly report cards:

1-888-963-7111, ext.7333

or access the newborn screening laboratory website:
www.dshs.state.tx.us/lab/newbornscreening.shtm

Thank you for your continued partnership and support...