

Arizona Addresses Newborn Screening Transit Delays

Following a Milwaukee Journal Sentinel report on newborn screening transit times that documented poor results for Arizona, the state dramatically improved its sample transit times, becoming a model for the nation.

A [Milwaukee Journal Sentinel article](#) released in November 2013 alerted the Arizona Department of Health Services (ADHS) and its stakeholders to a major problem in the state's newborn screening (NBS) program, and motivated the state health official to address it. Arizona had some of the worst NBS transit times in the nation. The *Milwaukee Journal Sentinel* noted that HHS' newborn screening committee recommends delivering blood samples to the Arizona Public Health Laboratory (the laboratory) for testing within three days of collection. Determined to improve both the state's standing and Arizona's newborns, ADHS' then director, Will Humble, publically set a state goal of getting 95 percent of all samples to the laboratory within three days.

A comprehensive quality improvement process revealed that ADHS had not been tracking hospital transit time data. Further assessment revealed administrative issues related to NBS, including concerns about the cost of testing. ADHS began a quality improvement intervention to support hospitals to enhance their internal systems in order to improve NBS transit times.

Steps Taken:

- After ADHS Director Humble publicly announced the new Arizona NBS goal, ADHS quickly began identifying problem areas within the system, and created an interagency NBS Transit Time Taskforce.
- Recognizing the importance of engaging key partners to achieve the state's goal, ADHS partnered with the Arizona Perinatal Trust, the Arizona Hospital and Healthcare Association (AzHHA), and the March of Dimes.
- In January 2014, ADHS compiled reports on individual hospital NBS transit times using 2013 baseline data and distributed these to hospital CEOs, nurse directors, and laboratory directors.
- In December 2013, ADHS sent a letter to hospitals requesting compliance with all licensing rules related to NBS transit times. The letter specifically mentioned the importance of hospital compliance with transit time requirements for NBS rules, and offered optional in person technical assistance to hospitals to help comply with these rules.
- ADHS met with hospitals to identify performance bottlenecks within their facilities.
- Because more than 60 percent of Arizona hospitals are members of AzHHA, ADHS partnered with AzHHA to communicate with hospitals, conducting three webinars for hospitals about the basics of NBS collection and screening. These webinars were also the first time that hospitals learned about ADHS' plans to deliver 95 percent of NBS samples to the laboratory within three days.
- Most hospitals requested technical assistance to meet the NBS transit time requirements. In order to help detect administrative problems and troubleshoot systems, staff from the ADHS

- In 2013, just 67 percent of NBS samples arrived at Arizona's state lab within 72 hours.
- As of March 2015, 99 percent of Arizona's NBS samples arrive to the laboratory within one day, a 32 percent improvement.

NBS and Title V Maternal and Child Health teams visited these hospitals to track newborn blood spot cards until they left in the mail.

- The visiting teams found that the nurses almost always retrieved the sample from the newborn on time, and that timeliness issues usually occurred after the blood was on the card. In some cases, hospital staff misunderstood the importance of sending out the blood cards on time and would wait until there was a large batch before sending over to the laboratory. In other cases, blood spot cards were treated like regular mail instead of being marked “high priority,” due to a lack of understanding that the courier service existed as a free service.
- Through this process, ADHS learned that NBS delivery problems were not limited to hospitals: courier services did not work on weekends or holidays. Similarly, public health laboratories were closed on weekends, preventing laboratory technicians from receiving and analyzing blood spot cards on Saturdays and Sundays.
- In order to address the courier obstacle, the laboratory hired a new courier service to provide Saturday pickup. This new service provides service to all birthing hospitals in the state. The ADHS also required laboratory staff to stagger their schedules to allow for some staff to report on Saturdays to receive the samples and prepare them to be examined on Monday morning.
- ADHS evaluated its timeliness and quality data throughout the project, further examining any outliers to make sure they weren’t part of larger systems issues.

Results:

- After implementing the initiative, Arizona’s NBS timeliness significantly improved, particularly after ADHS contracted with a new courier vendor.
- One year after ADHS changed its licensing regulations, 99 percent of the state NBS samples arrived to the laboratory within 24 hours.¹ This represents a 32 percent improvement in transit time in the state.
- ADHS built a [public website](#) to report all hospitals’ NBS performance in order to motivate them to improve their delivery times. Data for each hospital is displayed, allowing for direct comparisons.
- ADHS Director Will Humble authored the article “[Applying Transparency and Quality Measurement to Improve Newborn Screening: Lessons Learned From Arizona’s Transit Time Project](#)” in the *Journal of Public Health Management and Practice* which discussed Arizona’s work to further distribute their best practices and highlighted the state’s substantial successes.
- ADHS organizes events to recognize hospitals that meet the NBS timeframe requirements of 95 percent delivery within three days. High-performing hospitals receive a framed certificate to showcase their accomplishments.
- March of Dimes awarded ADHS the first ever [Quality Improvement Newborn Screening Award](#) in September 2014.
- Arizona’s NBS quality improvement project has been featured on the Arizona governor’s [website](#) on process improvement initiatives.

Lessons Learned:

State Story



- Focus on the entire system when conducting an assessment. Measure each part of the system in order to not miss bottlenecks to the NBS program.
- Operating under the principle that assigning blame does not help improve system quality, Former Director Humble focused on making improvements and respecting everyone involved in the process instead of blaming individuals and looking backward.
- Openness is essential for true accountability. ADHS public website comparing hospital NBS transit times identifies each hospital by name, allowing for true transparency.
- It is important to pay attention to the state's political climate and fiscal needs during this kind of quality improvement process. Increasing the courier service and laboratory staff by one day per week was enough to significantly improve Arizona's NBS delivery timeliness without increasing fees.
- Partnerships are important. ADHS worked closely with AzHHA to communicate with and provide technical assistance for hospitals. ADHS also worked closely with the March of Dimes and the Arizona Prenatal Trust, building on a 25-year partnership to improve outcomes for infants and determine appropriate interventions.

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¹ Arizona Department of Health Services Office of Newborn Screening. "Transit Time Project." Available at: <http://www.azdhs.gov/lab/aznewborn/transit-time-project/index.php>. Accessed 6-11-2015.