Timeliness Activities in Support of Newborn Screening

The Colorado Experience

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Background

• The Newborn Screening Technical assistance and Evaluation Program (NewSTEPs) is funded through a cooperative agreement to the APHL by the Genetic Services Branch of HRSA.
  – provides quality improvement initiatives
  – an innovative data repository
  – technical resources for newborn screening programs

• NewSTEPs is working to help facilitate strategies to enable newborn screening (NBS) programs to build on current activities to develop and implement quality improvement practices/activities aimed at addressing timeliness in pre-analytic phases of NBS
  – collection, transport, and receipt of specimen
CoIIN for timeliness in NBS

• NewSTEPs is supporting the planning and implementation of a pilot Collaborative Improvement and Innovation Network (CoIIN) for timeliness in NBS.
• Engaging in quality improvement through shared collaborative learning of evidence-based strategies for improvement of timeliness within NBS, contributing to improved health outcomes.
• Seven newborn screening (NBS) programs were selected (Arizona, Colorado/Wyoming, California, Iowa, New Hampshire, Tennessee, Texas)
• Began in January 2015 with face to face meeting
• Ends in April 2016 (15 month collaboration)
Colorado’s groundwork leading up to ColIN

• Collaboration with Colorado Hospital Association
• Proposed the “Timeliness Improvement Project” in April 2014 following successful workgroup meeting.
  – Goal of identifying best NBS practices at Colorado Hospitals
  – Formation of “teams” with representation from Colorado Department of Public Health and Environment (CDPHE) and hospitals
  – 4 pilot hospitals selected
• Partnership with state contracted courier service
Timeliness Improvement Pilot Project

• Launched the pilot project from October –December 2014 at 4 hospitals with focus on improving specific quality indicators.
  – Collection time
    • Goal of all specimens collected at 24-48 hours
  – Reduction unsatisfactory specimens
    • Utilize existing resources of informational posters and DVD
    • Initiate “spot checker” program
  – Completion of NBS card demographics
    • Development of “accuracy poster” to emphasize accurate, complete, and legible documentation.
  – Transit time
    • Use Kangaroo courier 7 days/week
    • Use standard manila envelope and “Chain of Custody”
Every time you fill out a newborn screening form you hold a baby’s life in your hands.

Filling out the newborn screening form

✓ Accurately
✓ Completely
✓ Legibly

could be a matter of life and death!

In the event of a positive screening test, the information you provide is essential to locate the baby and a provider!

It’s not just a form ... It’s a baby.
Chain of Custody Forms
Specimen Collection: Displayed by Time Frames

Percent of Specimens Collected

- 0-24 hours
- 24-48 hours
- 48-72 hours
- >72 hours

Colorado
DHMC
DHMC pilot
Mercy
Mercy pilot
Rose
Rose pilot
St. Mary's
St. Mary's pilot
% of unsatisfactory specimens

Month

June | DHMC | Mercy | Rose | St. Mary's | Colorado
---|------|-------|------|-------------|----------
July |      |       | 0.50 |             |          
August |      |       | 0.50 |             |          
September |      |       | 1.50 |             |          
October |      |       | 2.00 |             |          
November |      |       | 1.00 |             |          
December |      |       | 0.50 |             |          
January |      |       | 0.50 |             |          
February |      |       | 0.50 |             |          

Unsats

DHMC
Mercy
Rose
St. Mary's
Colorado
Transit Time

Transportation Hours

- June to Aug.
- Sept. to Dec.
- Real Time

Hospital
- DHMC
- Mercy
- Rose
- St. Mary
- Colorado
- Goal
Pilot Study Results

• Results reported at meeting in April 2015
• Audience included pilot hospitals, Colorado Hospital Association, Kangaroo courier, and representatives from over 30 hospitals in Colorado.
• Meeting facilitated by APHL’s Pandora Ray
• Educational material and results of the pilot project were well received.
• Multiple “next steps” identified
  – Development of educational toolkit
  – Use of Chain of Custody
  – Spot checker at all hospitals
Lessons Learned

• Collaboration and education work!
  – Improved collection time and completion of NBS cards.

• Importance of a state-wide courier.
  – Both hospitals and courier appreciated having “chain of custody” form
  – Allowed NBS lab to accurately determine time of drying, packaging, transport, and receipt of NBS specimens.

• Spot checker initiative resulted in ZERO unsats at pilot hospitals for 4 consecutive months.

• Pilot hospitals report that success was a result of partnership within the hospital between nurses and lab staff.
  – Importance of buy-in from all parties involved
Next Steps

• How do we expand the successes of our pilot project to the remaining birth facilities in Colorado and Wyoming?
• CoINN

NewSTEPs
A Program of the Association of Public Health Laboratories
CO/WY CoIN

• Submitted application in November 2014 and formed initial team for face to face meeting in January 2015.
  – CDPHE representatives
    • Jeana Foster, physical scientist (spearheaded our pilot)
    • Erica Wright, NBS follow-up supervisor
  – Wyoming Health Department (WDH) representative
    • Carleigh Soule, NBS and Genetics coordinator
  – Hospital representatives (from our pilot)
    • Sandy Towne, referral testing, Rose Hospital in Denver, CO (urban hospital)
    • Dawn Schultz, pre-analytic supervisor at Mercy Regional Medical Center in Durango, CO (rural hospital)
Identified Strengths and Weaknesses

• Strengths
  – Statewide courier in both Colorado and Wyoming
  – Quarterly performance “report cards” to birth facilities
  – Good collaboration with hospitals
  – Expansion of NBS follow-up with focus on education and quality improvement
  – Expansion of weekend lab hours in 2015

• Weaknesses and barriers
  – Large geographical region
    • Average transit time in Colorado: 2.82 days
    • Average transit time in Wyoming: 3.18 days
  – Rural communities served by small community hospitals
    • The majority of Colorado and Wyoming counties are classified as “rural” or “frontier”.
    • Almost half (47%) of Wyoming’s population lives in these frontier counties.
  – Home births
    • Greater than 1% of births
SMART Goals

• Established SMART goals
  – Specific, Measurable, Attainable, Relevant, and Time-bound

• Goals
  – Reduce transit time
    • Reduce by 1 day with 95% of initial screens received within 72 hours of collection.
    • Ideally receipt within 24 hours of collection
  – Ensure 100% of initial newborn screens are collected prior to 48 hours.
  – Reduce unsatisfactory specimens
  – Develop education program
Aims for our Goals

- Hospital Survey
- Improve utilization of courier
  - Add additional birth facilities
  - Add weekend pick-ups
- Improve data capture of transit times
- Improve lay-out of performance report cards.
  - Begin monthly dissemination of report cards
- Education efforts
  - Reinstitute site visits
  - Educate hospitals with high unsatisfactory rates with spot checker initiative
  - Educate hospitals that continue to collect specimens >48 hours of age.
  - Conduct conferences and webinars
Hospital Survey

• Conducted survey via survey monkey to all birth facilities in CO and WY.
• Goals of survey:
  – Gain knowledge regarding NBS processes at each hospital
  – Identify key players and organizational structure
  – Identify barriers to getting specimens to NBS lab within 24 hours
  – Identify educational needs
• Relationship building with hospitals
Site visits

• Re-initiated site visits as component of our NBS program.
• Visited largest birth hospital in Colorado in February to give educational presentation to nursery and lab staff.
  – Spent time reviewing their processes
  – Identified multiple issues regarding timeliness
  – Had second site visit to address unsatisfactory specimens
    • CDPHE lab staff and lab staff from another hospital
• Follow-up included multiple conversations with lab supervisor and monthly analysis of performance report cards.
Refining Goals and Team Members

• Addition of highest birth rate hospital’s laboratory supervisor following site visit.

• Addition of a certified midwife to our team with goal added of improving newborn screening for homebirth infants.
  – Percentage of infants screened
  – Timeliness of NBS
  – Reduction of unsats
  – Evaluation of courier
Experiences thus far

• Guidance of NewSTEPs has been a key component to moving our quality improvement process forward.
• Collaboration with other states has generated both ideas and practical solutions.
• “Back to the Basics” for hospital education.
• Importance of “Boots on the Ground”.
• Partnership with courier
Thank you!

- Our CoLLN team especially our hospital representatives and midwife
- Other CoLLN states for freely sharing their experiences, resources, and advice