



# Timeliness Activities in Support of Newborn Screening

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## *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



# CoINN for timeliness in NBS

- NewSTEPS is supporting the planning and implementation of a pilot **Collaborative Improvement and Innovation Network (CoINN) 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 CoIIN

- 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!

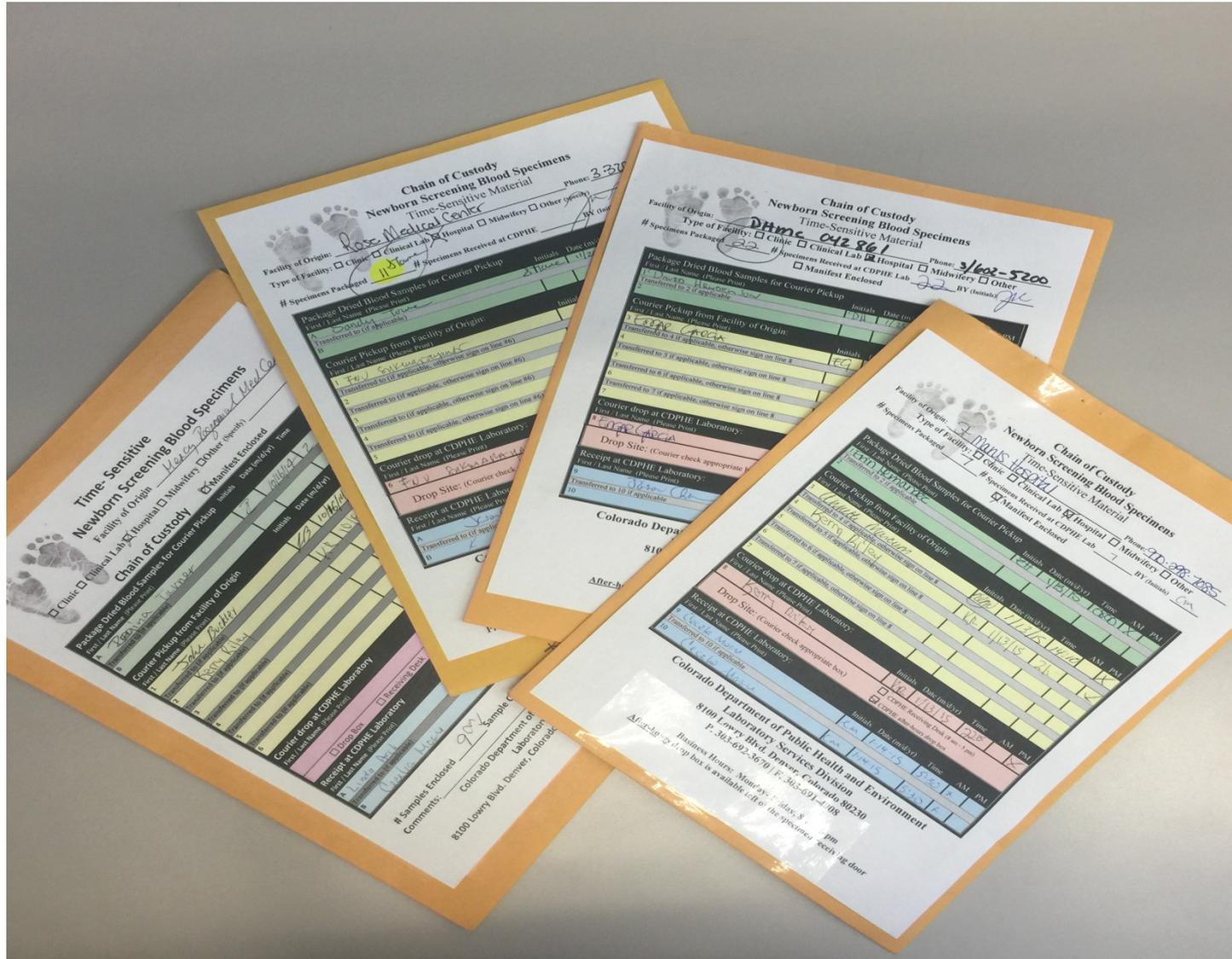
In the event of a positive screening test, the information you provide is essential to locate the baby and a provider!

*It's not just a form ... It's a baby.*



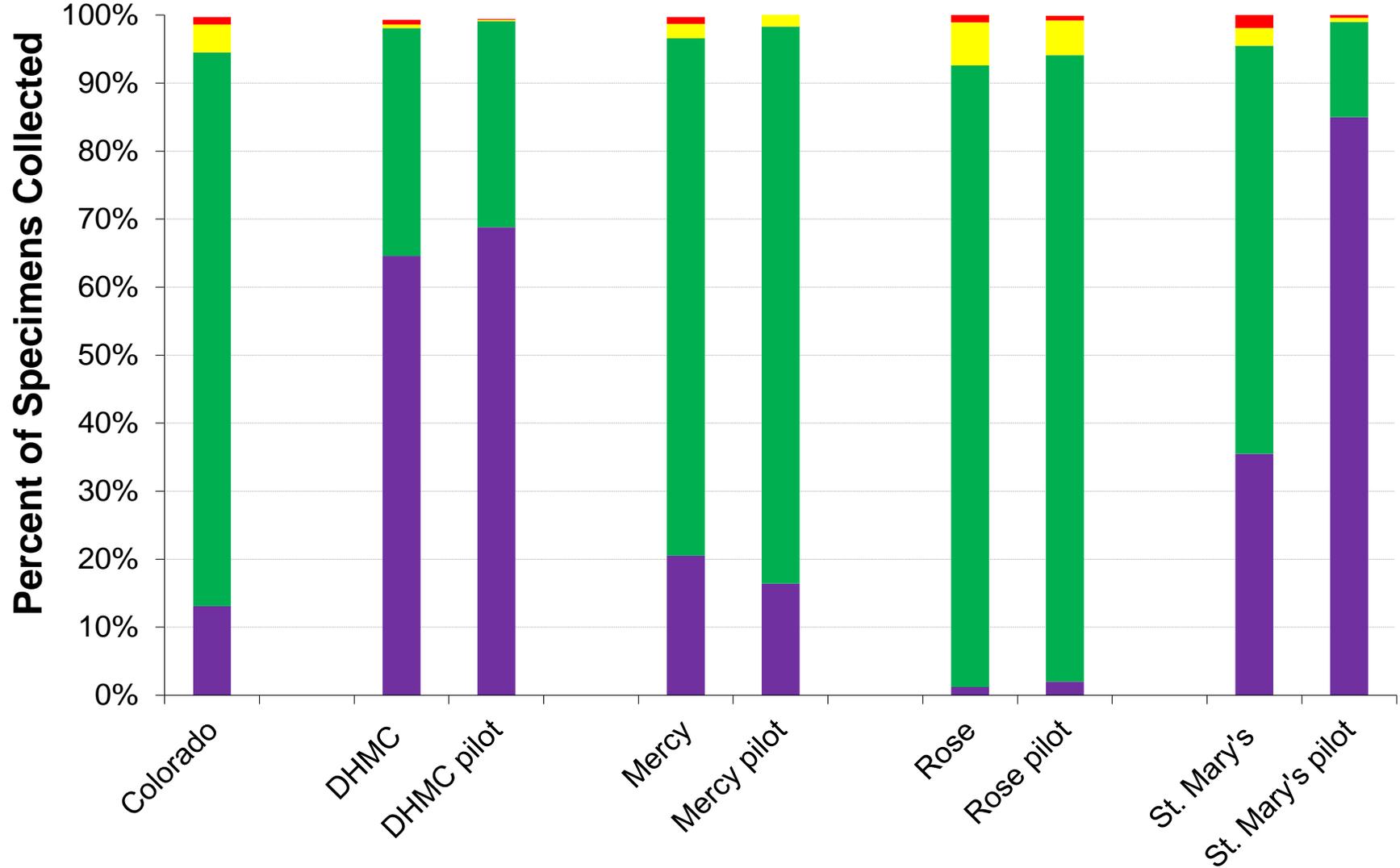
**COLORADO**  
Laboratory Services Division  
Department of Public Health & Environment

# Chain of Custody Forms

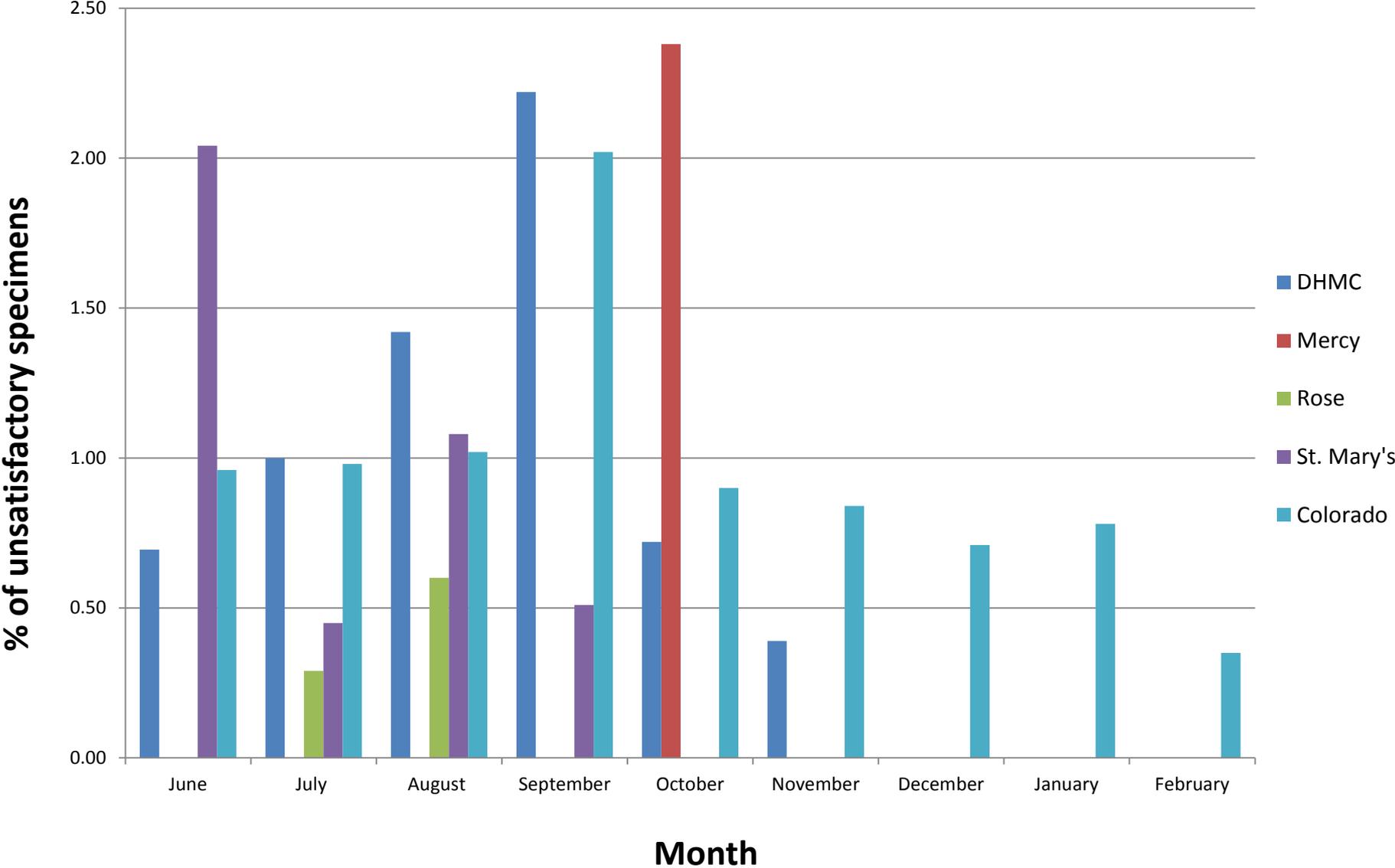


# Specimen Collection: Displayed by Time Frames

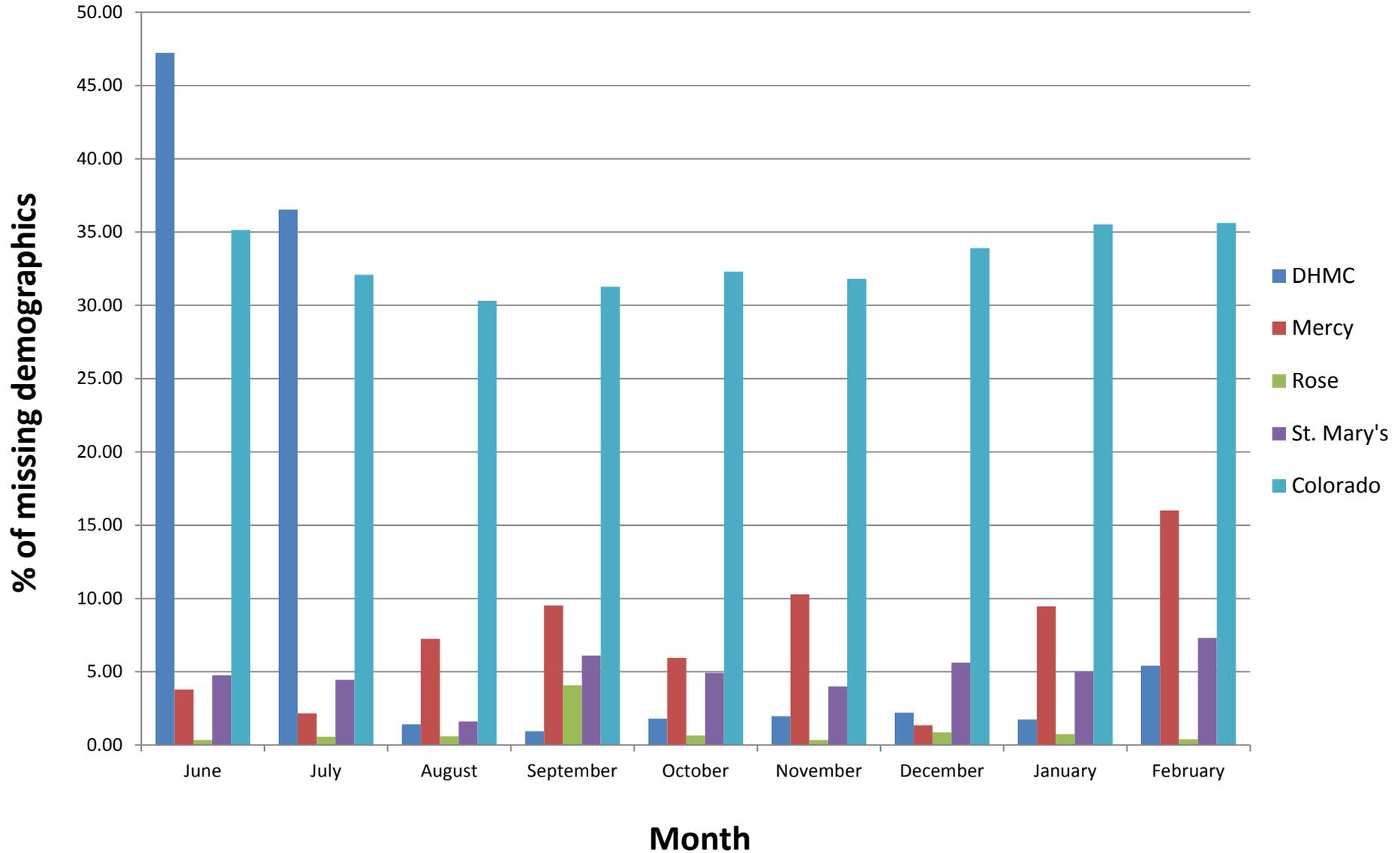
0-24 hours    24-48 hours    48-72 hours    >72 hours



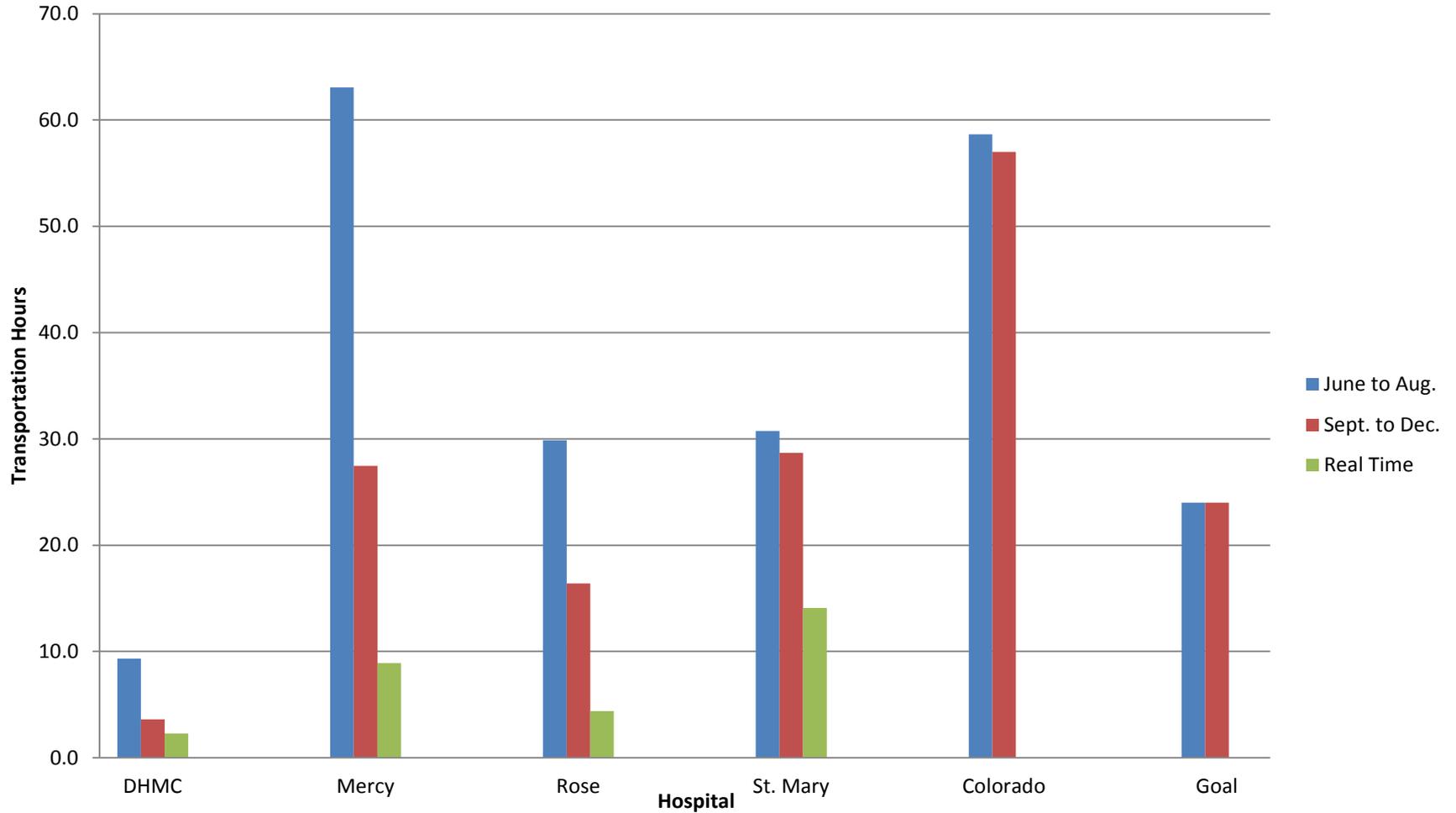
# Unsats



# Missing Demographics



# Transit Time



# 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?
- CoIIN



# CO/WY CoIIN

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



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