



## **Screening for Critical Congenital Heart Disease in the Apparently Healthy Newborn**

A presentation of *Texas Pulse Oximetry Project*:

A Joint Educational Initiative of The University of Texas Health Science Center at San Antonio/Department of Pediatrics, Baylor College of Medicine/Department of Pediatrics and Texas Department of State Health Services



# Current Status of Recommendations

- US Health and Human Services Secretary's Advisory Committee on Heritable Disorders in Newborns and Children (HHS-SACHDNC)
  - In 2010, recommended that CCHD be added to the newborn uniform screening panel
  - Identify newborn with structural heart defects associated with hypoxia that could have significant morbidity or mortality early in life with closing of the patent ductus arteriosus or other physiologic changes
  - 2011, Endorsed by Secretary of Health Kathleen Sibelius

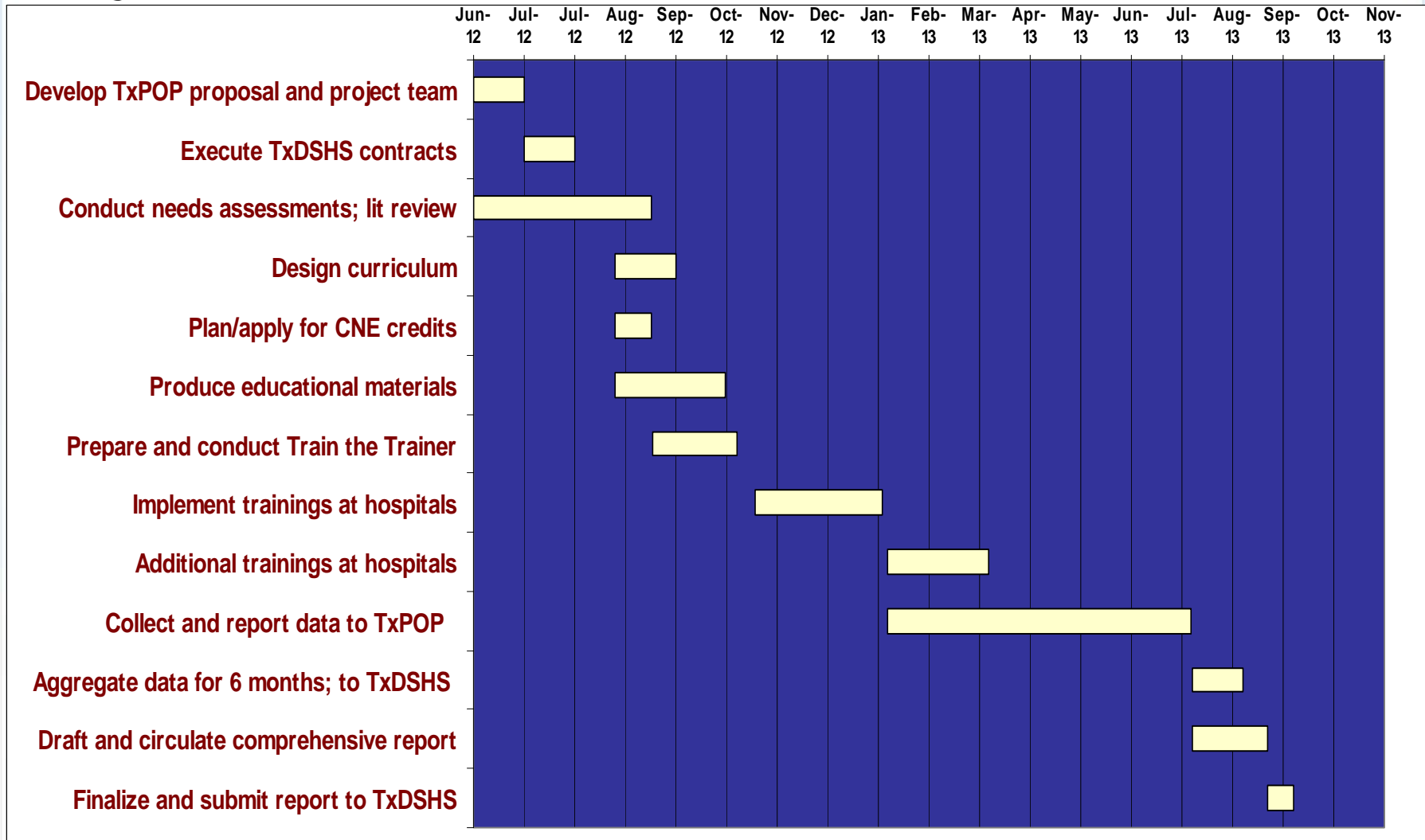
# TxPOP

- Texas Pulse Oximetry Project: A Joint Educational Initiative
- Goal: Develop an appropriate implementation strategy for screening of CCHD using pulse oximetry as a potential public health mandate
  - Develop and provide educational programs and materials
- Funding: Texas Department of State Health Services' Children's Outreach Heart Program

# TxPOP

- Devised and implemented needs assessment of clinical sites
- Created logic model and developed an educational plan to include curriculum and educational materials
- 13 facilities in South Texas and Southeast Texas representing an array of birthing facilities ranging from the rural hospital with limited resources to the large metropolitan medical centers with access to multiple resources
- Identified a staff person at each facility to champion CCHD screening

# Project Timeline



# Needs Assessment:

- Equipment
- Workflow, culture of care in newborn nursery
- Personnel and culture of continuing education
- Preferences for teaching tools
- Interests in project and stakeholders
- Compensation/incentives for champions
- Roles of hospital, champion and TxPOP - MOU
- Sample representative of Texas clinical sites

# Developed education plan

- Core team included PIs from Houston and San Antonio, educator/manager, data analysis specialist, Pediatric cardiologist, Pediatric newborn hospitalist, and nursing educators to meet and review all published data to develop educational materials to use in the identified clinical centers.
- Training materials and education resources for providers and families were produced with input from representatives of the target populations, sensitive to cultural and literacy issues.

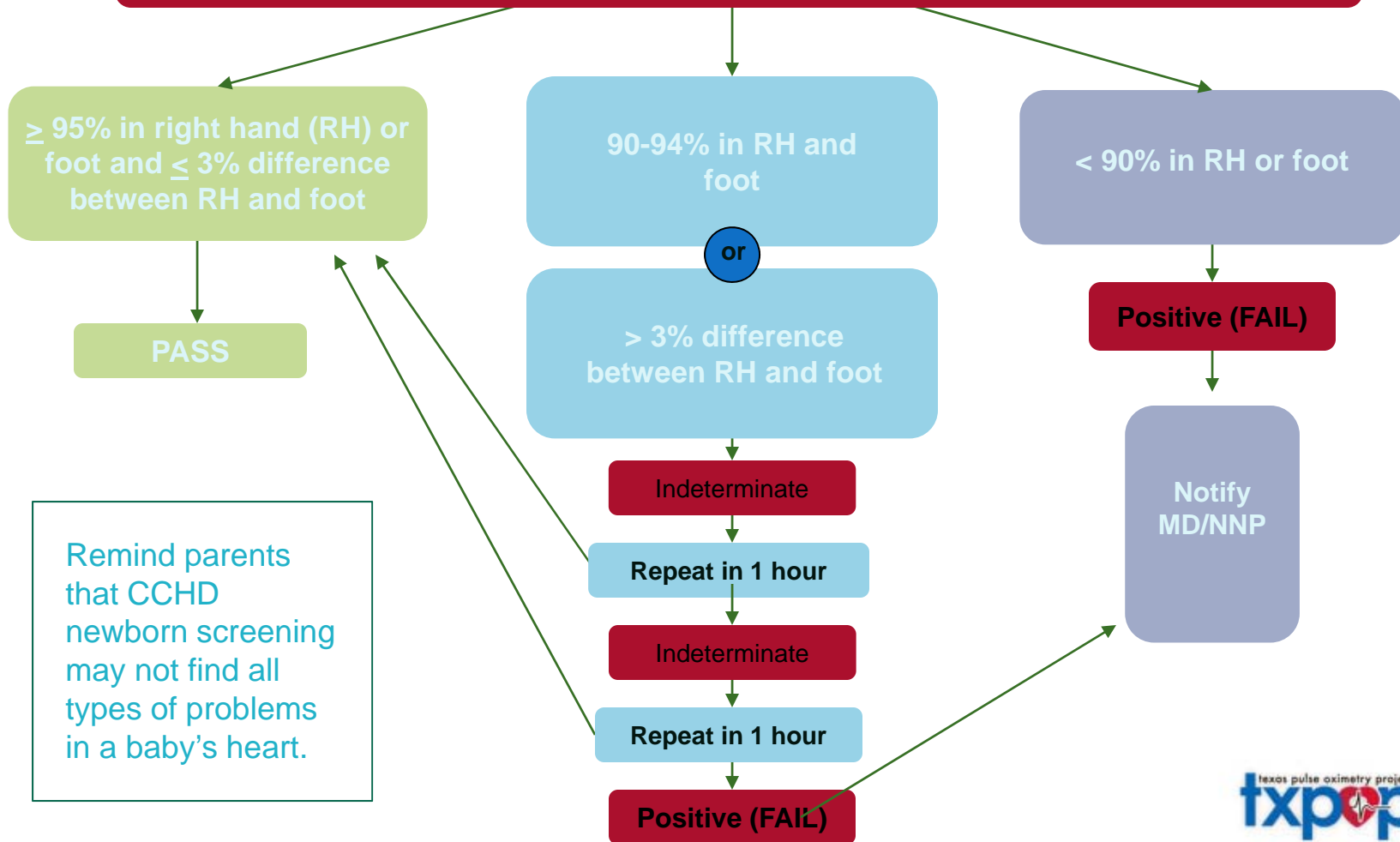
# Implementation of education plan

- Identified educators - physicians and nurses
- Train-the-trainer meeting for nurse champions
  - Developed manual with prototype teaching tools and data collection tool and references; solicited nurses' feedback
- All clinical sites to get training for physicians and nurses, particularly Mother-Baby unit nurses and nursery nurses. Obtained CNE accreditation for nursing training.
- All clinical sites received algorithm posters and brochures in English/Spanish to give to parents about the testing, as well as brochures to explain about positive screens.



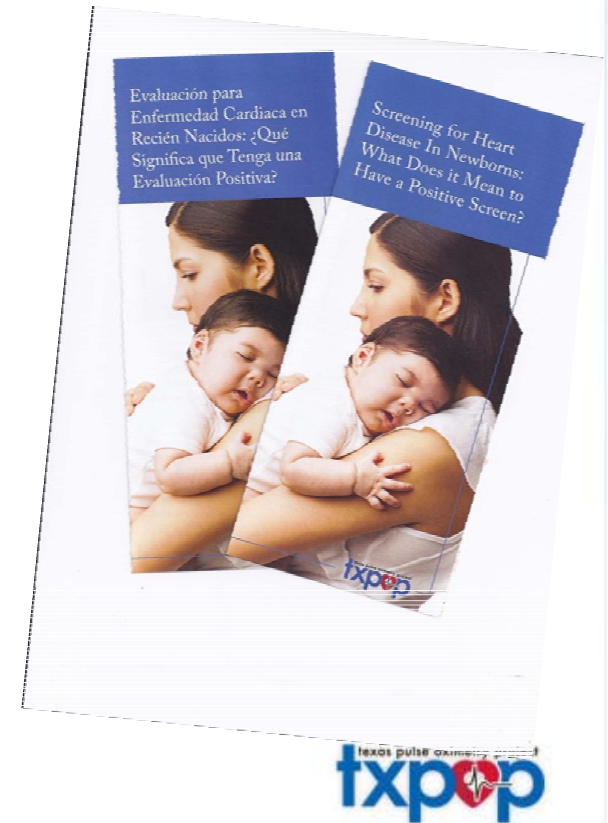
# CCHD Screening Algorithm

Pulse ox on right hand and foot after 24 hours



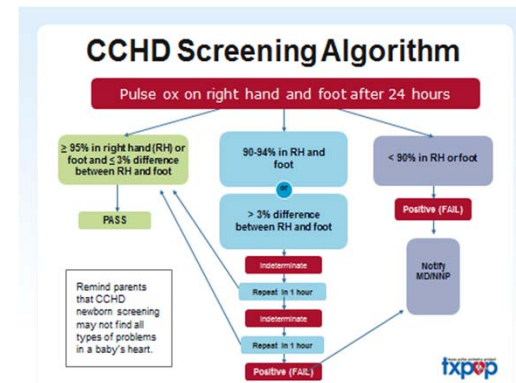
# TxPOP Educational Materials

- Color-coded clinical algorithm
- Information pamphlet, in English and Spanish, for all families of newborns
- Information pamphlet, in English and Spanish, for families with a positive screen
- PowerPoint presentation for nurses
- PowerPoint presentation for physicians



# TxPOP Educational Materials

- Wall poster with algorithm to display in newborn nurseries for reference
- Laminated algorithm card to post beside pulse oximeters for reference
- 4-minute testimonial video
- List of resources and references



# Continuing nursing education

- South Texas – 113 trained with pre-test score of 73% and post-test score of 91%.
- Houston – 96 trained with pre-test score of 69% and post-test score of 94%.
- 2 questions regarding algorithm showed significant improvement in post-test score.

# TxPOP

- For quality assurance and as a measure of educational impact of nurse training, nurse champions at each of the 13 birthing facilities are reporting aggregate data, collected over six months, on:
  - Number of births
  - Numbers admitted to newborn nursery/Mother-Baby unit
  - Number of screens, positive screens, disposition of positive screens
  - If transported, zip code of designation

# TxPOP

- In the two months, birthing facilities reported:
  - 4,000 total births
  - 3,424 CCHD screens in the newborn nursery using the recommended protocol
  - 12 positive screens
  - 2 transports due to positive screen
  - 1 confirmed CCHD case

# Quality Improvement

- Plan second nurse champion meeting to:
  - Review progress
  - Conduct formative evaluation, identify project strengths and opportunities for improvement
  - Discuss future plans
  - Draft preliminary sections of final report for TxDSHS

# Expansion

- Graduate nursing student and medical student in San Antonio working on costs analysis project.
- Survey to Texas providers to find out how many hospitals have implemented the screen.
- Cadre of nurse champions and physicians prepared to assist with CCHD newborn screening advocacy and future training needs.



## Train-the-Trainer Meeting for Nurse Champions

Friday and Saturday, November 2-3, 2012 Doubletree Downtown San Antonio

Combining 300 years of experience in newborn nursery, neonatal intensive care and public health

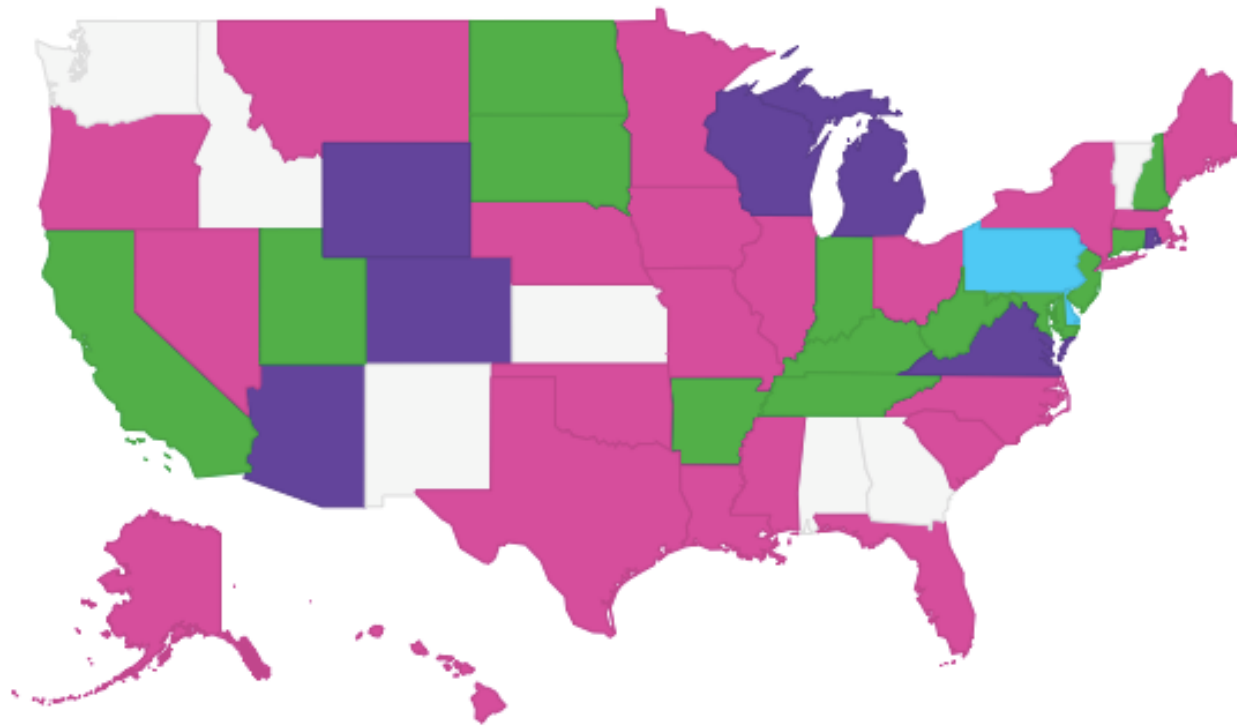


# Outcome

- TxPOP developed a robust, comprehensive, and standardized educational program that created an infrastructure to implement early detection of CCHD in the apparently healthy newborn before hospital discharge.

# Newborn CCHD Screening Progress

Click on a state for additional details.



Legislation Introduced

Legislation Enacted

Regulatory Addition to NBS Panel

Multi-Center Screening or Pilot Project

<http://cchdscreeningmap.org>

Texas:

Senate Bill 253 - Introduced January 25, 2013

House Bill 740 - Introduced January 28, 2013

House Bill 392 - Introduced January 8, 2013

Texas has two pieces of legislation that have been introduced concurrently by different parties.

\*Texas Department of State Health Services is funding a pulse ox project, TxPOP, for hospitals and nursing staff.

It is estimated that 50% of hospitals are implementing CCHD as a standard of care.



# Legislation

- HB 740 by Rep Crownover and MOD authorizes TxDSHS to implement point of care testing via rulemaking thus allowing NBS program to add CCHD screening and future screenings.
- Advocacy by collaboration of stakeholders:
  - TMA
  - TPS
  - MOD
    - Top priority for Lobby Day

<http://youtu.be/ibhmwYqsaKg>

