An Educational Strategy to Implement Early Detection of Critical Congenital Heart Disease Utilizing Pulse Oximetry in Apparently Healthy Newborns: A Pilot Study in Texas

BACKGROUND

Critical Congenital Heart Disease (CCHD) is the leading cause of death in infants less than 1 year. In the United States, 4800 infants (2/1000 live births) are born annually with CCHD. Early diagnosis and timely intervention of CCHD can significantly reduce morbidity and mortality among newborns and lead to better outcomes. This is an important public health problem because there is no standardized screening process for early CCHD detection in the state of Texas.

OBJECTIVE

The purpose of this initiative is to implement an educational program to improve readiness of CCHD screening in Texas.

METHODS

In Texas, 13 rural and metropolitan birthing facilities with access to varied resources were targeted for this educational initiative. A needs assessment tool was created to evaluate each site for its ability to implement the educational plan, determine and review existing resources, and identify key stakeholders including nurse champions and physicians. The newborn screening educational plan for CCHD included curriculum development with specific objectives to educate health care professionals in reasons for and the process of screening as well as how to communicate with families about the screen. A train-the-trainer seminar was conducted for nurse champions who would serve as lead trainers at each facility. An educational tool kit was produced that included a clinical algorithm, information pamphlets, videos, slide presentations, and posters. A program evaluation comprised of pre- and post-tests was used to assess the effectiveness of the educational plan. Birthing facilities will have a trial period to implement pulse oximetry screening and monitor quality improvement.

CONCLUSION

A robust, comprehensive educational program was standardized to implement early CCHD screening utilizing pulse oximetry and then tested in varied birthing facilities. This trial educational program can then be translated to use in all birthing facilities throughout Texas.