Pulse Oximetry Screening in Newborns:  
A Policy Position from the American Heart Association  

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Position  
The American Heart Association advocates for a comprehensive screening model in newborn care with pulse oximetry screening as one important strategy within that model. Pulse oximetry screening is an effective, noninvasive, inexpensive tool to diagnose critical congenital heart disease (CCHD). Therefore, the AHA formally supports the Secretary of Health and Human Services’ recommendation that pulse oximetry be used to screen newborns for CCHD.

Background  
In 2009, the American Heart Association and the American Academy of Pediatrics published a joint statement addressing the use of pulse oximetry screening in newborns. The writing group concluded that critical congenital heart disease is sometimes not detected in newborns until after their hospital discharge which results in significant morbidity and occasional mortality, and routine pulse oximetry screening performed on asymptomatic newborns after 24 hours of life, but before hospital discharge, may detect the problem. Also, routine pulse oximetry performed after 24 hours in hospitals that have on-site pediatric cardiovascular services incurs very low cost and risk of harm. However, the writing group in 2009 felt further research needed to be done across larger populations and a broad range of newborn delivery systems before they could recommend pulse oximetry screening as standard of care.

Since that time, additional studies have been published that further support the use of pulse oximetry screening in newborns. One showed that pulse oximetry screening can substantially reduce the postnatal diagnostic gap in critical congenital heart disease and false-positive results leading to unnecessary examinations of healthy newborns were rare. Another study showed that antenatal diagnosis combined with the physical examination detected 43 of 44 infants with critical congenital heart disease. Another study showed that introducing pulse oximetry screening before discharge improved the total detection rate of critical congenital heart disease to 92%. The authors concluded that such screening is cost neutral in the short term and may be cost-effective in the long term due to reduced need for preoperative neonatal intensive care and probable prevention of neurological morbidity. Finally, several recent European studies have illustrated the strengths and weaknesses of pulse oximetry screening and recommended strategies, including repeated measurements and upper and lower extremity saturations, to enhance CCHD detection.

Current Landscape  
On September 23, 2011, the HHS Secretary adopted the Advisory Committee on Heritable Disorders in Newborns and Children’s (SACHDNC) recommendation to add pulse oximetry screening for CCHD in newborns to the Uniform Screening Panel. It is now up to individual states to adopt this recommendation for their panels, determine an appropriate implementation strategy, and set a timeline for implementation. The AHA supports the Secretary’s decision of requiring all newborns, prior to being discharged from the birthing facility, to be screened for CCHD using pulse oximetry and believes that it is critically important to evaluate screening initiatives as they are implemented.
References: