

Pulse Oximetry screening

Pulse oximetry is a standard of care to detect critical cyanotic congenital heart disease. It improves the prognosis of early detected critical cyanotic congenital heart disease.

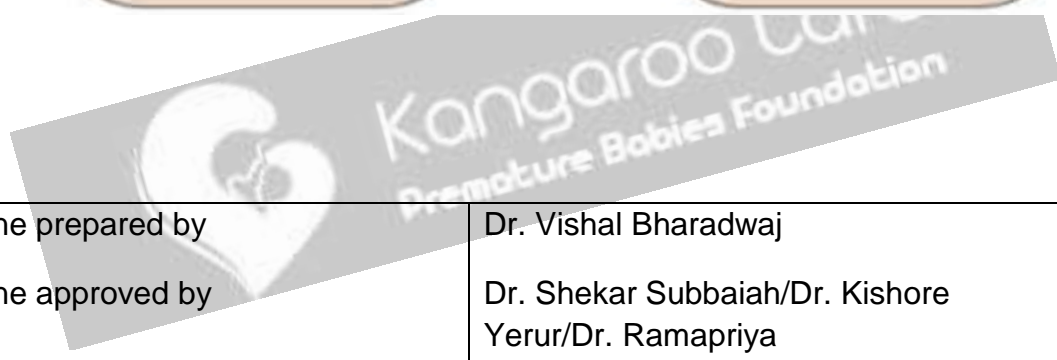
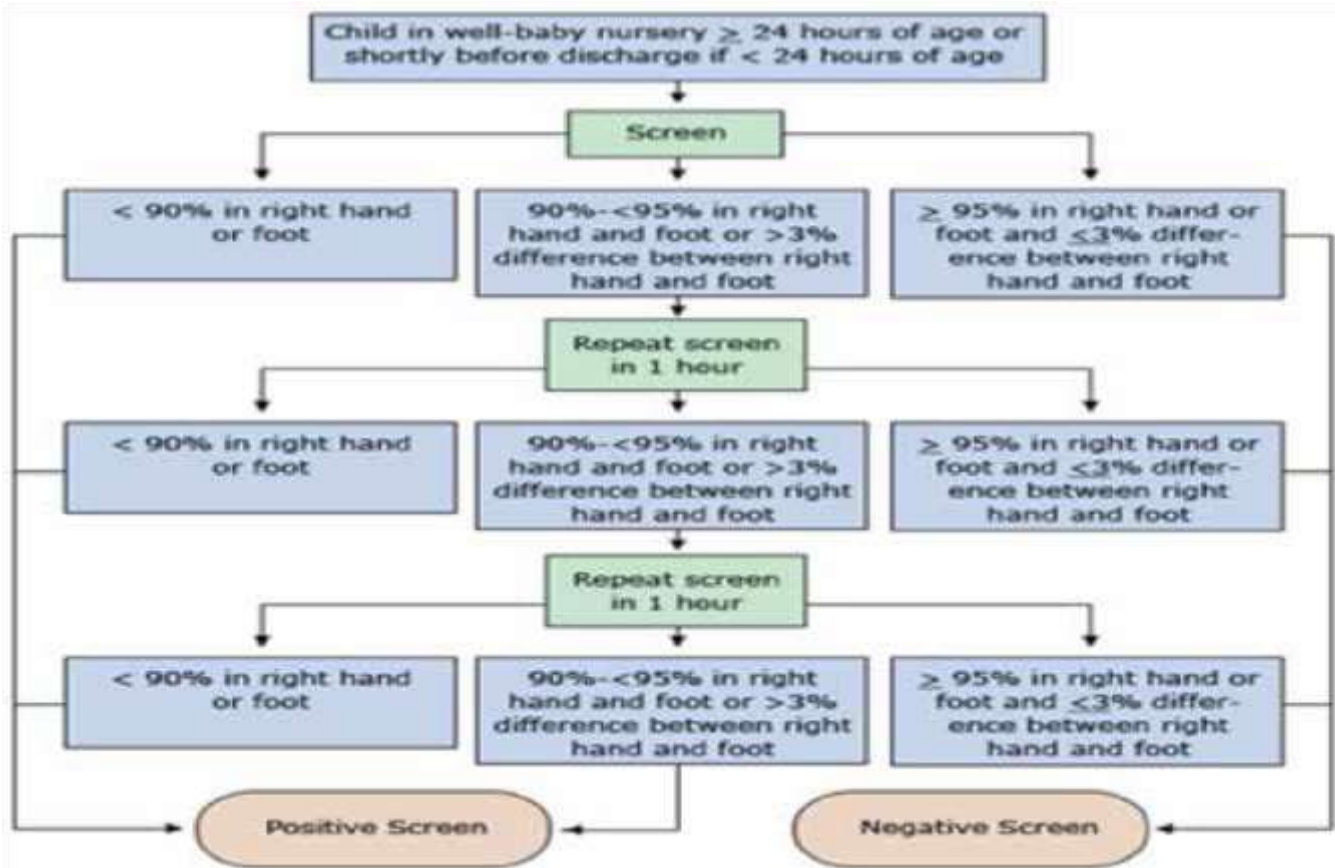
Congenital heart disease is an important cause of death and morbidity in early childhood with a prevalence of 5-10 per 1000 live births worldwide. One-fourth of these have major CHD (defined as requiring surgery or catheter intervention in the first year of life). In India, heart disease in young children accounts for more than 10% of all childhood deaths due to late presentation or diagnosis. Antenatal scans have a diagnosis rate of up to 44% while newborn examination diagnoses less than 50% of CHD and have a false positive rate of 1.90%. Pulse Oximetry screening of newborns has been shown to be a non-invasive test that increases the ability to identify infants with major CHD before clinical presentation with collapse, which may result in longterm complications.

Technique

We follow the Royal College of Paediatrics and Child Health (RCPCH) recommendations by placing the pulse oximeter sensor initially on one foot, obtaining a post-ductal oxygen saturation reading, and then immediately moving the sensor to the right hand to obtain a pre-ductal oxygen saturation reading. Then the other 2 limbs saturation was also measured to increase accuracy.

Screening is considered positive if:

1. Oxygen saturation measured is 3% absolute difference between the right hand and foot on three measures, each separated by one hour. A neonate is categorized as having passed the screening if SaO₂ is more than 95% in all limbs and if the difference in SaO₂ was less than 3%.
2. Screening is performed by specially trained nurses between 24 – 48 hours of age or at the time of discharge.
3. When screening is positive, the neonate undergoes a thorough physical examination by a neonatologist, and if indicated, a chest radiograph and an electrocardiogram is done. If no pulmonary condition is found, the baby is immediately referred for a complete echocardiogram by a paediatric cardiologist, as applicable.



Guideline prepared by	Dr. Vishal Bharadwaj
Guideline approved by	Dr. Shekar Subbaiah/Dr. Kishore Yerur/Dr. Ramapriya
Guideline accepted date	June 2019
Guideline review date	June 2020