Pulse Oximetry Screening Algorithm

Screen
Obtain pulse oximetry reading on right hand (RH) and either foot (in parallel or direct sequence) at 24-48 hours of age
(infant should be on room air, warm and quiet, with screening sites clean and dry)

Immediate Fail
Pulse ox reading less than 90 in RH or foot at any time

NOTIFY MD and fax failed pulse ox screen reporting form to Public Health

Immediate Fail
Pulse ox less than 90

• Perform immediate evaluation for causes of hypoxemia including infectious and pulmonary pathology.

• If no other etiology is found, immediate echocardiogram interpreted by a pediatric cardiologist is indicated. This may require transfer to an NICU with pediatric cardiology services.

Fail
Pulse ox reading of 90-94 in RH and foot
OR
Difference of 4 or more between RH and foot readings

Repeat screen in 1 hour

Fail
Repeat screen in 1 hour

Fail
NOTIFY MD and fax failed pulse ox screen reporting form to Public Health

Pass
Pulse ox reading of 95 or higher in RH or foot
AND
Difference of 3 or less between RH and foot readings

Normal Newborn Care

Failed Screen
Pulse Ox 90-94 or RH/foot difference of 4 or more x 3

• Perform comprehensive evaluation for causes of hypoxemia including infectious and pulmonary pathology.

• If no other etiology is found, consultation with pediatric cardiology or neonatology is indicated to arrange for a diagnostic echocardiogram to be interpreted by a pediatric cardiologist. This may require telemedicine, transfer to an NICU with pediatric cardiology services, or discussion with cardiology services to schedule a timely outpatient echocardiogram. Physician to physician communication recommended.

This screening algorithm should not take the place of clinical judgment or customary clinical practice.
A negative screen does not rule out heart disease.
Optimal results are obtained using a motion-tolerant pulse oximeter that reports functional oxygen saturation, has been validated in low perfusion conditions, has been cleared by the FDA for use in newborns, has a 2% root mean-square accuracy, and is calibrated regularly.

For more information see: Kemper, AR, Mahle, WT, Martin, GR et al; Strategies for Implementing Screening for Congenital Heart Disease. Pediatrics. 2011. available at: http://pediatrics.aappublications.org/content/early/2011/10/06/peds.2011-1317