

# Brief, Resolved Cyanotic Events in “Rooming-In” Newborns Pathway

**Pathway Purpose:** To ensure a more consistent evaluation for infants assigned to the maternity unit who are witnessed to have a brief, resolved cyanotic event with the goal of determining appropriate placement for these infants after the event.

## Inclusion Criteria:

- Newborn with brief central cyanosis event that is improving within 1 minute of onset and completely resolved within 5 minutes
- Infants admitted to the Newborn Nursery service

## Exclusion Criteria:

- Occurrence in the first two hours of life
- Infants with known or suspected medical conditions
- Recurrent or persistent central cyanosis (not improving within 1 minute or not completely resolved within 5 mins)
- Cyanosis associated with seizure-like activity

## Consider Neonatal Rapid Response or Code Blue:

- RR > 80 with increased work of breathing
- Oxygen saturation < 85% and not improving
- Concern for decompensating neonate

## Identification of Neonate with Brief, Resolved Cyanotic Event:

- RN caring for infant or who observed the cyanotic event to notify physician and obtain orders for cardiorespiratory monitoring.
- RN to notify Newborn Nursery prior to moving infant to Newborn Nursery for cardiorespiratory monitoring
- If cyanotic event recurs after infant has been monitored, recommend transfer to higher level of care.

## Assessment & Monitoring in Newborn Nursery:

- Place infant on continuous cardiorespiratory monitors
- Perform and document complete set of vital signs
- MD evaluation of infant as soon as able
- Perform pre and post ductal pulse oximetry (CCHD testing), even if previously performed
- Monitor HR, RR and SpO<sub>2</sub> continuously and notify MD if any vital signs are outside of Newborn Nursery ordered parameters
- Monitor for, document, and notify MD of vomiting, choking events, apnea, color change, abnormal movements or other significant events
- Monitor infant for at least two hours and up to four hours, at discretion of MD
- Evaluate feeding, if cyanotic episode was associated with feeding or regurgitation
  - NN RN to monitor infant during one feeding and for at least 20-minute post-feeding.
  - If infant breastfeeding and mother is unable to leave room, infant should be monitored on pulse oximetry by the Maternity RN while breastfeeding in the room.

## Criteria for Discharge from Monitoring:

- Vital signs within normal parameters for a minimum 2 hours observation period
- No significant apnea, bradycardia, hypoxia, choking events or color change
- Feeding evaluation completed and reassuring (if indicated)
- MD updated and in agreement with plan to return infant to the maternity unit

Yes to all

Discontinue monitoring, return to maternity to room in.

No to any

Disposition per MD to appropriate unit for continued monitoring and evaluation.



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Associated Order Set: Newborn Nursery Monitoring After Brief Resolved Cyanotic Event  
Associated Policies: None

Packard Clinical  
Pathway Program



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## Definitions<sup>1-4</sup>:

**Cyanosis** is a term used to describe a blue or purple dusky discoloration of the skin or mucous membranes.

**Peripheral cyanosis (acrocyanosis)** is seen in the extremities and circumorally and is caused by peripheral vasoconstriction with normal oxygen saturation. Causes of peripheral cyanosis are usually benign, but can rarely be serious.

**Central cyanosis** is seen in the mucosa or torso, and is usually caused by an increase in deoxygenated blood or less often due to abnormal hemoglobin. Central cyanosis can signify potential life-threatening problems.



Peripheral Cyanosis<sup>5</sup>



Central Cyanosis<sup>5</sup>

## Differential Diagnosis for Neonatal Cyanosis<sup>3</sup>:

### A: Airway

- Choanal atresia
- Cystic hygroma or other neck masses
- Laryngomalacia
- Micrognathia / Pierre Robin sequence
- Obstruction / Choking
- Bilateral Nasolacrimal duct cyst
- Tracheal stenosis
- Vascular ring or sling
- Vocal cord palsy

### B: Breathing

- Aspiration (meconium, blood or milk)
- Congenital cystic adenomatoid malformation
- Congenital lobar emphysema
- Congenital pulm. lymphangiectasia
- Diaphragmatic palsy
- Pneumonia (congenital or acquired)
- Pneumothorax
- Pulmonary hemorrhage
- Pulmonary edema / pleural effusion
- Pulmonary sequestration

### C: Circulation

- Abnormal pulmonary blood flow
- Cyanotic congenital heart disease
- Low cardiac output state
- Persistent pulmonary hypertension of newborn (PPHN)
- Pulmonary arteriovenous fistula
- Pulmonary venous hypertension

### D: Defective Hemoglobin

- Hemoglobin M
- Methemoglobinemia
- Sulfhemoglobinemia

### E. Miscellaneous

- Apnea of prematurity
- Central nervous system depression (asphyxia, medications)
- Hypoglycemia
- Magnesium Toxicity
- Polycythemia
- Seizure
- Sepsis

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