COUNTY OF SACRAMENTO
EMERGENCY MEDICAL SERVICES AGENCY

Program Document: **Neonatal Resuscitation**
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Signature on File
EMS Medical Director

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EMS Administrator

Purpose:

A. To establish treatment standards in the resuscitation of the neonate – (defined as birth to 28 days).

Authority:

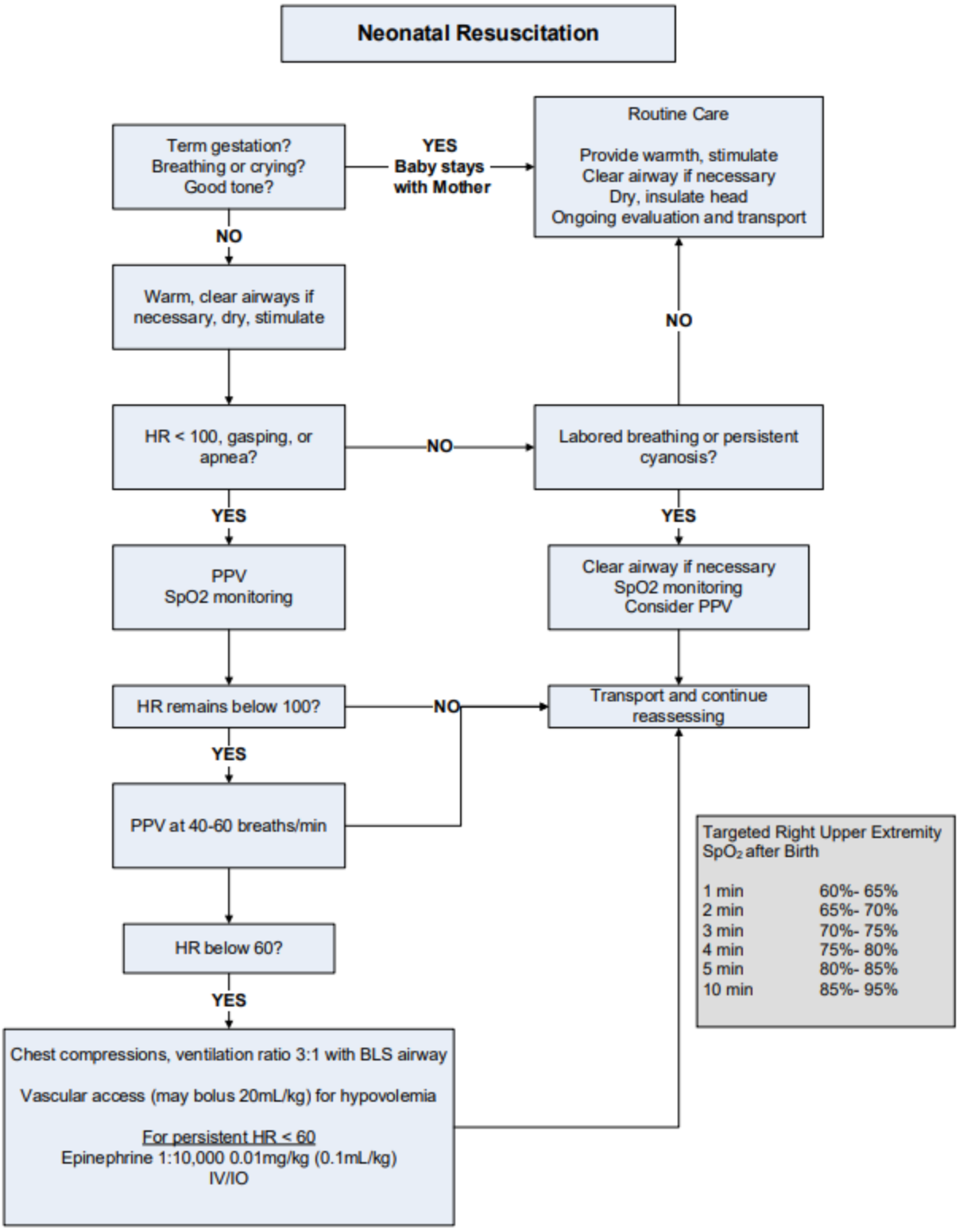
A. California Health and Safety Code, Division 2.5, Chapter 4, Article 1, Section 1797.218, 1797.220, Chapter 6, Article 3, Section 1798.170
B. California Code of Regulations, Title 22, Division 9, Article 3, Section 100027.02, 100027.03; Chapter 3.1, Article 2, Section 100066.02, 100066.04; Chapter 3.2, Article 2, Section 100076.02, 100076.03; Chapter 3.3, Article 2, Section 100091.02

Protocol:

A. Neonatal cardiac arrest is predominantly caused by asphyxia, so maintain the A-B-C resuscitation Sequence with a 3:1 compression-to-ventilation ratio.
B. Once positive-pressure ventilation (PPV) or supplementary oxygen administration is begun, assessment should consist of simultaneous evaluation of 3 clinical characteristics: heart rate, respiratory rate, and evaluation of the state of oxygenation. The state of oxygenation is optimally determined by a pulse oximeter rather than by a simple assessment of color.
C. Pulse oximetry, with a probe attached to the right upper extremity, shall be used to assess any need for supplementary oxygen. For babies born at term, it is best to begin resuscitation with air rather than 100% oxygen. Administration of supplementary oxygen, using the "blow-by" method, should be guided by oximetry monitored from the right upper extremity (i.e., usually the wrist or palm).
D. Suctioning immediately after birth (including suctioning with a bulb syringe) should be reserved for babies who have an obvious obstruction to spontaneous breathing or require positive pressure ventilation.

E. Positive-pressure ventilation should be administered with sufficient pressure to increase the heart rate or create chest expansion; excessive pressure can seriously injure the pre-term lung.
F. If the heart rate is less than 60/min despite adequate ventilation, chest compressions are indicated. Because ventilation is the most effective action in neonatal resuscitation and because chest compressions are likely to compete with effective ventilation, rescuers should ensure that assisted ventilation is being delivered optimally before starting chest compressions.
G. The ability to maintain temperature in prehospital settings after birth is a significant problem with a dose-dependent increase in mortality for temperatures below 37°C or 98.6°F. Premature newborns are at a much higher risk than those born at term. Simple interventions to prevent hypothermia between birth and arrival at the hospital reduce mortality. During transport, warm and maintain normal temperature, being careful to avoid hyperthermia.

NOTE: Clinical viability is generally defined as beginning at 22-23 weeks gestation, however the provider shall use medical discretion when providing care**.**


Neonatal Resuscitation
Term gestation?
Breathing or crying?
Good tone?
YES
Baby stays with Mother
Routine Care
Provide warmth, stimulate
Clear airway if necessary
Dry, insulate head
Ongoing evaluation and transport
NO
Warm, clear airways if necessary, dry, stimulate
NO
HR < 100, gasping, or apnea?
NO
Labored breathing or persistent cyanosis?
YES
YES
PPV
SpO2 monitoring
Clear airway if necessary
SpO2 monitoring
Consider PPV
HR remains below 100?
NO
Transport and continue reassessing
YES
PPV at 40-60 breaths/min
Targeted Right Upper Extremity SpO2 after Birth
1 min 60%- 65%
2 min 65%- 70%
3 min 70%- 75%
4 min 75%- 80%
5 min 80%- 85%
10 min 85%- 95%
HR below 60?
YES
Chest compressions, ventilation ratio 3:1 with BLS airway
Vascular access (may bolus 20mL/kg) for hypovolemia
For persistent HR < 60
Epinephrine 1:10,000 0.01mg/kg (0.1mL/kg)
IV/IO