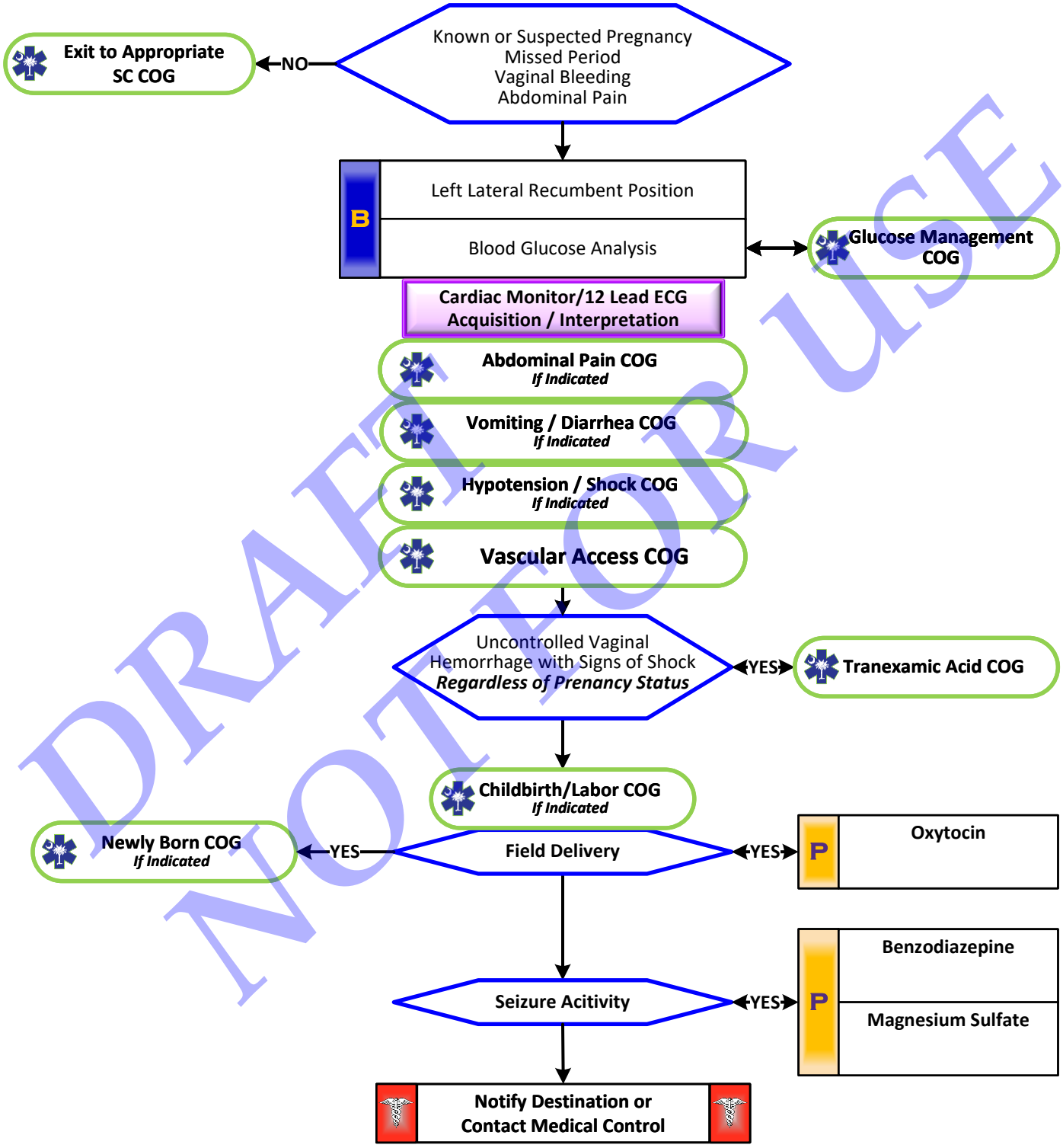
Obstetrical Emergency

History
- Past medical history
- Hypertension meds
- Prenatal care
- Prior pregnancies / births
- Gravida / Para

Signs and Symptoms
- Vaginal bleeding
- Abdominal pain
- Seizures
- Hypertension
- Severe headache
- Visual changes
- Edema of hands and face

Differential
- Pre-eclampsia / Eclampsia
- Placenta previa
- Placenta abruptio
- Spontaneous abortion
- Ectopic Pregnancy



Obstetrical Emergency

PEARLS

- **Recommended Exam: Mental Status, Abdomen, Heart, Lungs, Neuro**
- **With active seizure activity, benzodiazepine is a priority over magnesium sulfate.**
- **Midazolam 5 – 10 mg IM is effective in termination of seizures. Do not delay IM administration with difficult or no IV or IO access.**
- **Magnesium Sulfate should be administered as quickly as possible. May cause hypotension and decreased respiratory drive, but more likely in doses higher than 6 gm.**
- Pregnant patients with complaints of any abdominal trauma or with previously undiagnosed abdominal pain, vaginal bleeding or leakage of vaginal fluids should be transported for evaluation regardless of gestational age.
  - Patients greater than or equal to 20 weeks estimated gestational age with MVC, fall, or generalized trauma – even if not directly involving the abdomen should be transported based on history alone even in the absence of any signs or symptoms.
  - Generally require fetal monitoring. DO NOT suggest the patient needs an ultrasound but emphasize patient needs evaluation and fetal monitoring.
  - Pregnancy complicating any trauma may be considered a factor in determining a destination based on the Field Triage and Bypass COG
- After delivery, massaging the uterus (lower abdomen) will promote uterine contraction and help to control post-partum bleeding (apply uterine massage only after placenta delivery).
- **Postpartum or Vaginal hemorrhage:**
  - **Pitocin (Oxytocin):**
    - Following field delivery, where available, administer 10 IU IM to promote uterine contraction and decrease postpartum hemorrhage.
    - Agencies may administer via IV or IO route per local agency medical director.
  - **Tranexamic Acid (TXA):**
    - Administer when postpartum hemorrhage is associated with signs and symptoms of shock.
    - TXA per TXA COG
    - CONTRAINDICATED where birth occurs > 3 hours prior to EMS arrival.
    - Vaginal hemorrhage unrelated to pregnancy, administer with signs and symptoms of shock.
- **Ectopic pregnancy:**
  - Implantation of fertilized egg outside the uterus, commonly in or on the fallopian tube. As fetus grows, rupture may occur. Vaginal bleeding may or may not be present. Many women with ectopic pregnancy do not know they are pregnant. Usually occurs within 5 to 10 weeks of implantation. Maintain high index of suspicion with women of childbearing age experiencing abdominal pain.
- **Preeclampsia:**
  - Occurs in about 6% of pregnancies. Defined by hypertension and protein in the urine. RUQ pain, epigastric pain, N/V, visual disturbances, headache, and hyperreflexia are common symptoms.
  - In the setting of pregnancy, hypertension is defined as a BP > 140 systolic or > 90 diastolic mmHg, or a relative increase of 30 systolic and 20 diastolic from the patient's normal (pre-pregnancy) blood pressure.
  - Risk factors: < 20 years of age, first pregnancy, multi-gestational pregnancy, gestational diabetes, obesity, personal or family history of gestational hypertension.
- **Eclampsia:**
  - Seizures occurring in the context of preeclampsia. Remember, women may not have been diagnosed with preeclampsia.
- If > 20 weeks EGA transport patient in a left lateral position, right side up 10 - 20° to minimize risk of supine hypotensive syndrome.
- Ask patient to quantify bleeding - number of pads used per hour.
- **KEY DOCUMENTATION ELEMENTS:**
  - ❑ Document all times:
    - ❑ Contraction onset, contraction duration (length) and frequency,
    - ❑ Delivery
    - ❑ APGAR 1 and 2,
    - ❑ Placenta delivery
  - ❑ Interventions / Medications
  - ❑ Estimated Gestational Age

Childbirth / Labor

History
- Due date
- Time contractions started / how often
- Rupture of membranes
- Time / amount of any vaginal bleeding
- Sensation of fetal activity
- Past medical and delivery history
- Medications
- Gravida/Para Status
- High Risk pregnancy
- Illicit Drug Use

Signs and Symptoms
- Spasmodic pain
- Vaginal discharge or bleeding
- Crowning or urge to push
- Meconium

Differential
- Abnormal presentation
  - Buttock
  - Foot
  - Hand
- Prolapsed cord
- Placenta previa
- Abruptio placenta

Inspect Perineum
(No digital Vaginal Exam)

No Crowning

B
- Left Lateral Position
- Monitor & Reassess
- Document frequency and duration of contractions

Crowning

Abnormal Presentation — YES → **See Page 2**

NO

Vascular Access COG

B
- Position mother to allow room for child to deliver without fall
- Control delivery of head
  - Most common presentation – occiput anterior head will turn to one side with delivery
- Assess for nuchal cord. May be multiple loops.
  - Slip over head to release if possible or
  - Clamp in 2 locations and cut cord between clamps
  - Delivery must proceed rapidly if cord is cut
- Deliver anterior shoulder
- Deliver posterior shoulder
- Delivery will complete rapidly – USE CARE TO NOT DROP THE CHILD.
- Keep child at or below the level of the perineum until cord is clamped
  - May clamp in 2 locations and cut cord between clamps – but it is not necessary to cut cord in the field.
- Assess for adequate CardioPulmonary status / Assess APGAR
- Newly Born COG or Neonatal Resuscitation COG for infant
- Delivery of placenta – DO NOT PULL
- Uterine Massage following delivery

Vascular Access COG

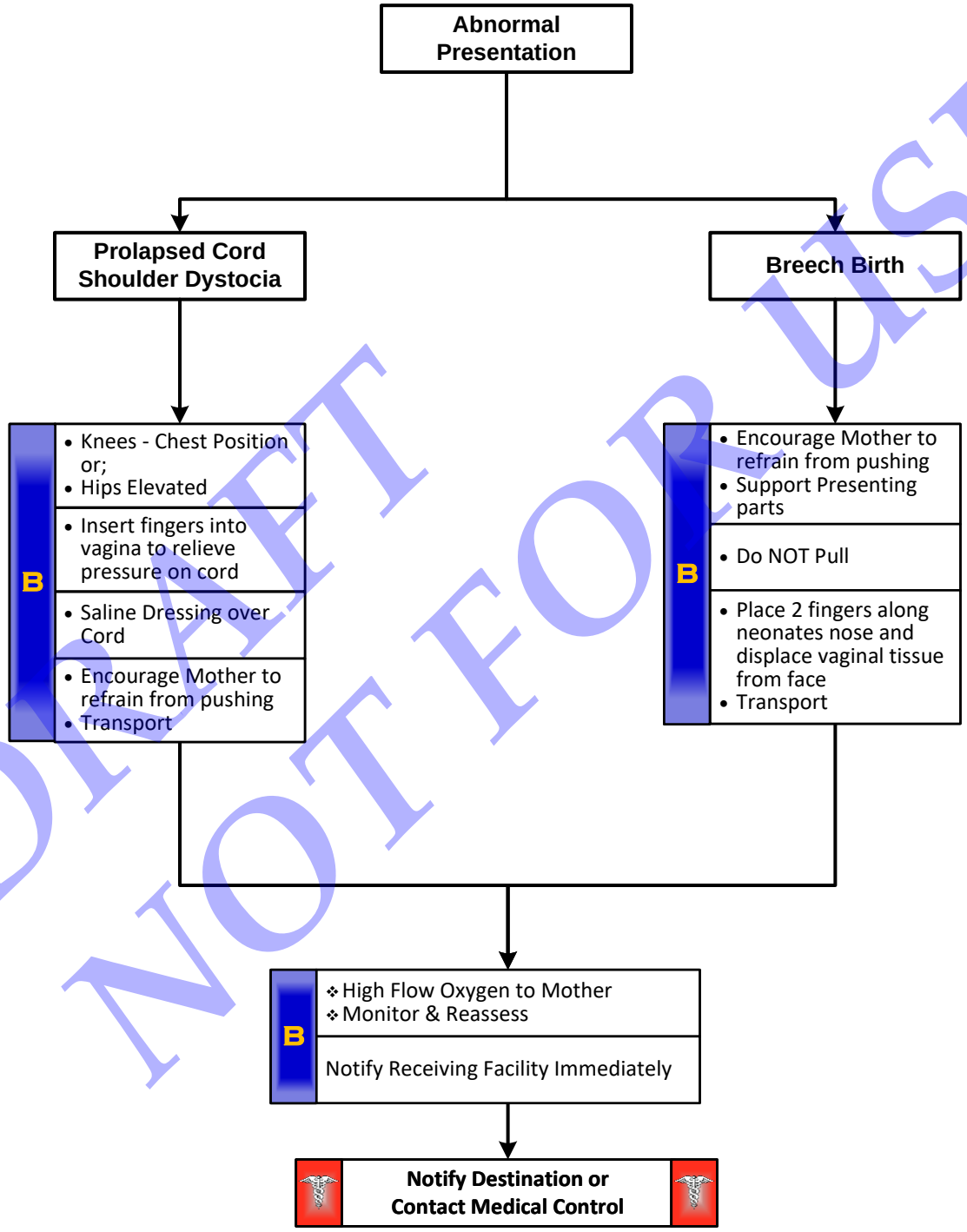
P Oxytocin

Tranexamic Acid COG
If Indicated

Notify Destination or Contact Medical Control

Childbirth / Labor

Complicated or Complex Delivery
< 36 weeks Gestation;
Abnormal Presentation;
Severe Vaginal Bleeding;
Multiple gestation
Expedite Transport for In Hospital Delivery if Possible



Childbirth / Labor

Projected Pulse Oximetry in Infants Over Time	
Time Since Birth (Minutes)	Projected Increase in Pulse Oximeter Over Time
1 minute	60-65%
2 minutes	65-70%
3 minutes	70-75%
4 minutes	75-80%
5 minutes	80-85%
10 minutes	85-90%

APGAR Score			
Sign	**0**	**1**	**2**
Appearance	Blue, Pale	Body pink, Extremities Blue	Completely pink
Pulse	Absent	Slow (< 100)	> or = 100
Grimace	No Response	Grimace	Cough or Sneeze
Activity	Limp	Some Flexion	Active Motion of Extremities
Respirations	Absent	Slow, Irregular	Good, Crying

PEARLS

- **Recommended Exam (of Mother): Mental Status, Heart, Lungs, Abdomen / Perineum**
- **Record APGAR at 1 minute and 5 minutes after birth. Do not delay resuscitation to obtain APGAR.**
- **If neonate requiring resuscitation, move quickly to Newly Born COG**
- After delivery, massaging the uterus (lower abdomen) will promote uterine contraction and help to control post-partum bleeding (apply uterine massage only after placenta delivery).
- **Postpartum hemorrhage:**
  - **Pitocin (Oxytocin):**
    - Following field delivery, where available, administer oxytocin to promote uterine contraction and decrease postpartum hemorrhage.
    - Agencies may administer via IV or IO route per local agency medical director.
  - **Tranexamic Acid (TXA):**
    - Administer when postpartum hemorrhage is associated with signs and symptoms of shock.
    - TXA per TXA COG
    - CONTRAINDICATED where birth occurs > 3 hours prior to EMS arrival.
    - Vaginal hemorrhage unrelated to pregnancy, administer with signs and symptoms of shock.
- **Transport or Delivery?**
  - Decision to transport versus remain and deliver is multifactorial and difficult. Generally it is preferable to transport.
  - Factors that will impact decision include: number of previous deliveries; length of previous labors; frequency of contractions; urge to push; and presence of crowning.
- **Maternal positioning for uncomplicated labor:**
  - Supine with head flat or elevated per mother's choice. Maintain flexion of both knees and hips. Elevated buttocks slightly with towel. If delivery not imminent, place mother in the left, lateral recumbent position with right side up about 10 – 20°.
- **Umbilical cord clamping and cutting:**
  - Place first clamp about 10 cm from infant's abdomen and second clamp about 5 cm further away from first clamp.
  - Once clamped, it is not necessary to cut cord prior to arrival at ED, but may cut between clamps for convenience using sterile instrument.
- **Multiple Births:**
  - Twins occur about 1/90 births. Typically manage the same as single gestation. If imminent delivery call for additional resources, if needed.
  - Most twins deliver at about 34 weeks so lower birth weight and hypothermia are common.
  - Twins may share a placenta so clamp umbilical cord after first delivery.
- Notify receiving facility immediately.
- If maternal seizures occur, refer to the Obstetrical Emergencies COG.
- Some perineal bleeding is normal with any childbirth. Large quantities of blood or free bleeding are abnormal
- **KEY DOCUMENTATION ELEMENTS:**
  - ❑ Document all times:
  - ❑ Contraction onset, contraction duration (length) and frequency,
  - ❑ Delivery
  - ❑ APGAR at 1 and 5 minutes
  - ❑ Placenta delivery
  - ❑ Interventions / Medications
  - ❑ Any conditions complicating pregnancy or delivery

Newly Born Care

History
- Due date and gestational age
- Multiple gestation (twins etc.)
- Meconium
- Delivery difficulties
- Congenital disease
- Medications (maternal)
- Maternal risk factors
  - substance abuse
  - smoking

Signs and Symptoms
- Respiratory distress
- Peripheral cyanosis or mottling (normal)
- Central cyanosis (abnormal)
- Altered level of responsiveness
- Bradycardia

Differential
- Airway failure
  - Secretions
  - Respiratory drive
- Infection
- Maternal medication effect
- Hypovolemia
- Hypoglycemia
- Congenital heart disease
- Hypothermia

Breathing or Crying? Term Gestation? Good Muscle Tone?

ALL YES →
- **B**
  - Warm, Dry, and Stimulate Infant
  - Infant with Mother if possible (skin-to-skin)
  - Maintain Normal Temperature
  - Bulb suction airway only if needed
  - Monitor and Reassess
  - May allow to breast feed if mother desires
- **Notify Destination or Contact Medical Control**

ANY NO ↓
- **B** Warm, Dry, and Stimulate Infant
  Bulb Suction airway if needed

Agonal Breathing or Apnea OR Labored Breathing / Persistent Cyanosis
If not breathing within 30 seconds move to BVM

YES →
- **B**
  - Position and Clear airway if needed
  - BVM Ventilations with or without O_2
  - Ventilation Rate: 40-60 breaths/min
  - Pulse Oximetry (Right Hand)

NO ↓

Heart Rate < 60 After 30-60 secs of Ventilatory Support

YES →
- **B**
  - Begin Chest Compressions
- **Age Appropriate Airway C.O.G.**
- **Vascular Access C.O.G.**

NO ↓

Heart Rate 60 - 100

YES →
- **B**
  - Check Chest movement
  - Change airway position
  - Change BVM Technique
  - Add O_2 if not already providing
- **Age Appropriate Airway C.O.G.**

NO ↓
- **B** Supplemental Oxygen
  Maintain Warmth
  Monitor & Reassess

Heart Rate > 100

YES ←

NO →
- **P**
  - Epinephrine 1:10,000
  - 0.01 mg/Kg IV / IO
  - Every 3-5 minutes as needed
- **A**
  - Normal Saline Bolus
  - 10 mL/Kg IV/IO
  - If not responding to Epinephrine
  - May Repeat x 1
- **B**
  - Blood Glucose Analysis
- **Glucose Management C.O.G.**

- **Notify Destination or Contact Medical Control**

Newly Born Care

PEARLS

- **Recommended Exam: Quality of Cry, Muscle tone, Respirations, Heart Rate, Pulse Oximetry, and Gestational Age**
- Majority of newborns do not require resuscitation, only warming, drying, stimulating, and cord clamping.
  - With term gestation, strong cry/ breathing, and good muscle tone, generally will not need resuscitation.
  - If no resuscitation needed, skin-to-skin contact with the mother is best way to maintain warmth of infant.
  - Maintain warmth of infant following delivery adjuncts; cap/ hat, plastic wrap, thermal mattress, radiant heat.
  - Most important vital signs in the newly born are heart rate, respirations, and respiratory effort.
  - About 10% of newborns need assistance to help them start breathing after birth.
  - About 1% of newborns require intensive resuscitation to restore/ support cardiorespiratory functions.
- **Airway:**
  - Positive Pressure Ventilations with BVM is the most important treatment in a newborn with poor respirations and/ or persistent bradycardia (HR < 100 BPM).
  - When BVM is needed, ventilation rate is 40 – 60 breaths per minute.
  - Adequacy of ventilation is measured mainly by increase in heart rate as well as chest rise.
  - If heart rate or respirations are not improving after 30 to 60 seconds of resuscitation, place BIAD or endotracheal tube.
  - BIAD is routinely recommended for first choice.
  - Routine suctioning is no longer recommended, bulb suction only if needed.
- **Breathing:**
  - Oxygen is not necessary initially, but if infant is not responding with increased heart rate or adequate breathing, add oxygen to the BVM.
- **Circulation/ Compressions:**
  - Heart rate is critical during first few moments of life and is best monitored by 3 or 4 lead ECG, as pulse assessment is difficult in the neonate. Heart Rate is best tool for gauging resuscitation success.
  - If heart rate remains < 60 BPM after 30 to 60 seconds of BVM/ resuscitation, begin compressions.
  - With BIAD or ETT in place, compressions and ventilation should be coordinated with compression, compression, compression, then ventilation. (3:1 ratio with all events totaling 120 per minute)
  - 2-thumbs encircling chest and supporting the back is recommended. Limit interruptions of chest compressions.
- **If infant not responding to BVM, compressions, and/ or epinephrine, consider hypovolemia, pneumothorax, and/ or hypoglycemia (< 40 mg/dL).**
- Hypothermia is common in newborns and worsens outcomes of nearly all post-natal complications.
  - Ensure heat retention by drying the infant thoroughly, covering the head.
  - When possible allow "kangaroo care" - i.e. placing the infant skin-to-skin directly against mother's chest and wrapping them together – for an effective warming technique.
  - Hypothermia may lead to hypoglycemia, hypoxia, and lethargy.
  - Aggressive warming techniques should be initiated and include drying, swaddling, and warm blankets covering body and head.
  - When available, radiant warmers or other warming adjuncts are suggested for babies who require resuscitation – especially pre-term babies.
- Low Birth Weight infants are at high-risk for hypothermia.
- **Document 1 and 5 minute APGAR in PCR or ePCR. DO NOT delay or interrupt resuscitation to obtain an APGAR score.**
- **Meconium staining:**
  - Infant born through meconium staining who is NOT vigorous:
  - Bulb suction mouth and nose and provide positive pressure ventilation.
  - Direct endotracheal suctioning is no longer recommended.
- Pulse oximetry should be applied to the right upper arm, wrist, or palm.
- **Cord clamping:**
  - Recommended to delay for 1 minute, unless infant requires resuscitation.
- Maternal sedation or narcotics will sedate infant (Naloxone NO LONGER recommended, use supportive care only).
- **D10 = D50 diluted (1 ml of D50 with 4 ml of Normal Saline) or D10 solution at 2 mL/kg IV / IO.**
- **In the NEONATE, D10 is administered at 2 mL/kg.**
- **KEY DOCUMENTATION ELEMENTS**
  - ❑ **APGAR Scores at 1 and 5 minutes**
  - ❑ **Interventions and Medications**
  - ❑ Prehospital on-scene time
- **KEY PERFORMANCE MEASURES**
  - ❑ Call time for additional resources
  - ❑ Arrival time of additional unit/s
  - ❑ Time to initiation of interventions
  - ❑ Use of Oxygen during resuscitation
  - ❑ Hypoglycemia evaluated and treated.
  - ❑ Hypothermia on arrival to ED
  - ❑ Number of advanced airway attempts and success.
  - ❑ Mortality

Newly Born Care

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		Intervention Indicated			
		Blow-by Oxygen	**Bag-Mask Ventilation with Room Air**	**Bag-Mask-Ventilation (BVM) with Oxygen**	**BVM and Chest Compressions**
Assessment	**Heart Rate**	>100	<100	60-100	<60
	Respiratory Distress / Apnea	NO	NO	YES	
	Central Cyanosis Present	YES	YES	Yes/No	

Formula for calculating a 0.5 G/Kg dose of IV Dextrose:

50 / (_____% Concentration of Glucose) = Fluid Dose (_____mL/Kg)

Desired Dose (G/Kg)	Fluid Type	mL of Fluid Dose
	50% Dextrose (D50W)	1 mL/Kg
0.5 G/Kg	25% Dextrose (D25W)	2 mL/Kg
	10% Dextrose (D10W)	5 mL/Kg
	5% Dextrose (D5W)	10 mL/Kg
	50% Dextrose (D50W)	2mL/Kg
1 G/Kg	25% Dextrose (D25W)	4 mL/Kg
	10% Dextrose (D10W)	10 mL/Kg
	5% Dextrose (D5W)	20 mL/Kg