Neonatal- Dr. Sabu Richard Abraham

The Neonatal Resuscitation Program (NRP®) -

- The Neonatal Resuscitation Program (NRP®) will help you learn the cognitive, technical, and teamwork skills that you need to resuscitate and stabilize newborns.
- Most newborns make the transition to extrauterine life without intervention.
- Within 30 seconds after birth, approximately 85% of term newborns will begin breathing.
- An additional 10% will begin breathing in response to drying and stimulation.
- To successfully transition, approximately:
- • Five percent of term newborns will receive positive-pressure ventilation (PPV).
- • Two percent of term newborns will be intubated.
- • One to 3 babies per 1,000 births will receive chest compressions or emergency medications.
- The likelihood of requiring these lifesaving interventions is higher for babies with certain identified risk factors and those born before full term.
- Even though the majority of newborns do not require intervention, the large number of births each year means that timely intervention can save many newborn lives.
- Because the need for assistance cannot always be predicted, health care providers need to be prepared to respond quickly and efficiently at every birth.
- During your NRP course, you will learn how to evaluate a newborn, make decisions about what actions to take, and practice the steps involved in resuscitation.
- As you practice together in simulated cases, 2 your team will gradually build proficiency and speed.
- The most gratifying aspect of providing skillful assistance to a compromised newborn is that your efforts are likely to be successful.
- The time that you devote to learning how to resuscitate 11ewborns is time very well spent.

Why do newborns require a different approach to resuscitation than adults? -

- Most often, adult cardiac arrest is a complication of coronary artery disease.
- It is caused by a sudden arrhythmia that preve11ts the heart from effectively circulating blood.
- As circulation to the brain decreases, the adult victim loses consciousness and stops breathing.
- At the time of arrest, the adult victim's blood oxygen and carbon dioxide (C02) content is usually normal and the lungs remain filled with air.
- During adult resuscitation, chest compressions maintain circulation until electrical defibrillation or medications restore the heart's function.
- In contrast, most newborns requiring resuscitation have a healthy heart.
- When a newborn requires resuscitation, it is usually because respiratory failure interferes with oxygen and C0 2 exchange.
- • Before birth, fetal respiratory function is performed by the placenta instead of the fetal lungs.
- When the placenta is functioning normally, it transfers oxygen from the mother to the fetus and carries C0 2 away from the fetus to the mother.

- A healthy fetus makes breathing movements, which are important for normal lung growth.
- • When placenta! respiration fails, the fetus receives an insufficient supply of oxygen and C02 cannot be removed.
- Acid increases in the fetal blood as cells attempt to function without oxygen and C0 2 accumulates.
- • Fetal monitoring may show a decrease in activity, loss of heart rate variability, and heart rate decelerations.
- If placenta! respiratory failure persists, the fetus will make a series of reflexive gasps followed by apnea and bradycardia.
- • If the fetus is born in the early phase of respiratory failure, tactile stimulation may be sufficient to initiate spontaneous breathing and recovery.
- If the fetus is born in a later phase of respiratory failure, stimulation alone will not be sufficient and the newborn will require assisted ventilation to recover.
- The most severely affected newborns may require chest compressions and epinephrine.
- At the time of birth, you may not know if the baby is in an early or a late phase of respiratory failure
- • After birth, the baby's lungs must take over respiratory function.
- They must be filled with air to exchange oxygen and C02
- • Respiratory failure can occur if the baby does not initiate or cannot 1naintain effective breathi11g effort.
- • If respiratory failure occurs either before or after birth, the primary problem is a lack of gas exchange.
- Therefore, the focus of neonatal resuscitation is effective ventilation of the baby's lungs.
- Many concepts and skills are taught in this program.
- Establishing effective ventilation of the baby's lungs during neonatal resuscitation is the single most important concept emphasized throughout the program.
- Ventilation of the newborn's lungs is the single most important and effective step in neonatal resuscitation.