

# Detecting and Treating Newborn Asphyxia

Skilled providers who are trained in simple resuscitation methods can make a real difference in saving newborns with asphyxia.

Because up to half of all newborns who need resuscitation have no identifiable risk factors before birth, providers should be prepared to resuscitate every baby.

Newborn asphyxia, the inability of a newborn to initiate and sustain breathing at birth, is one of the leading causes of newborn deaths in developing countries. According to the World Health Organization, 4 to 9 million cases of newborn asphyxia occur each year, accounting for about 20 percent of all newborn deaths. More than a million newborns who survive asphyxia at birth develop long-lasting problems such as cerebral palsy, mental retardation, and speaking, hearing, visual and learning disabilities.

Often caused by health conditions in the mother or complications during labor or childbirth, newborn asphyxia is treatable if women and their newborns receive skilled healthcare during labor and childbirth. Basic, effective resuscitation can save the majority of newborns who develop asphyxia. Many babies in the developing world who suffer from birth asphyxia do not receive resuscitative care, however, in part because their families do not have access to skilled providers who know how to use simple resuscitation methods and equipment.

Recognizing that a skilled provider can make the difference in saving the life of a newborn in distress, the Maternal and Neonatal Health (MNH) Program advocates the presence of a skilled provider at every birth and promotes and provides training in simple, low-cost methods for detecting and treating newborn asphyxia.

## Causes and Predisposing Factors

Newborn asphyxia can be caused by conditions that occur before, during or immediately after labor and childbirth, including the following:

- **Before labor:** Pre-eclampsia or eclampsia, infection, bleeding
- **During labor and childbirth:** Premature or prolonged labor, malpresentation (abnormal fetal position), general anesthesia during a cesarean section, bleeding

- **Immediately after birth:** Infection or preterm newborn

Some conditions, such as high blood pressure and infections (such as HIV and syphilis), may cause complications at any point before, during or after labor and childbirth.

Women who experience any of these complications may be at greater risk of having a baby with respiratory distress at birth. However, because up to half of all newborns who need resuscitation have no identifiable risk factors before birth, providers should be prepared to resuscitate every baby. Although asphyxia can sometimes be predicted during labor, it is often not discovered until a baby is born.

The incidence of newborn asphyxia is highest in developing countries because women in low-resource settings are more likely to experience predisposing circumstances such as poor health before and during their pregnancy, complications during pregnancy, labor or childbirth, and lack of access to skilled healthcare.

## Detecting Birth Asphyxia: The Role of the Skilled Provider

The presence of a skilled provider during labor and childbirth significantly increases rates of infant survival in the developing world. Skilled providers can use simple techniques to monitor labor and evaluate the health of the woman and the newborn before, during and after the birth.

Following the recommendation of the World Health Organization, the MNH Program supports the use of the partograph during labor for all women. The partograph is a simple chart that providers use to monitor and record the progress of labor and to identify the need for additional care. Using a partograph can significantly decrease the likelihood

of prolonged labor and other complications that can lead to newborn asphyxia.

As part of the process of monitoring labor, providers should monitor and record the fetal heart rate. Monitoring the fetal heart rate, especially during the second stage of labor, can help diagnose fetal distress and signal the need for intrapartum intervention or postpartum resuscitation of the newborn. A fetal heart rate that is very slow or very rapid suggests that the fetus is in distress and may need further intervention.

### **Newborn Resuscitation: A Simple, Effective Approach**

A simple self-inflating bag and small mask can be used to resuscitate most newborns with asphyxia. In most cases, any skilled provider who is trained in good resuscitation skills and who continues to maintain those skills can easily perform the procedure. More complex procedures, such as intubation and the use of oxygen, are needed only in about 10 percent of cases of birth asphyxia, when the newborn's prognosis is very poor.

Providers should quickly assess the newborn's condition at birth and take immediate action if the baby appears to be in distress. Following the guidelines outlined in the *Managing Complications in Pregnancy and Childbirth* manual (published by the World Health Organization in 2000), the MNH Program recommends that resuscitation be started if a baby does not cry or breathe at all or is gasping after birth. While keeping the baby wrapped for warmth, the provider should use a simple suction tube to gently suction the baby's nose and mouth, taking care not to introduce the tube deep into the throat. Then the mask should be placed over the baby's nose and mouth, and air should be squeezed from the self-inflating bag through the mask and into the baby's lungs.

The MNH Program does not promote approaches to resuscitation that are not supported by clinical evidence. Techniques such as slapping or hanging an infant by the heels, although commonly used, may be traumatic for babies. Another common practice, the use of sodium bicarbonate, also remains unsupported by clinical evidence and may be harmful to a newborn.

### **The Role of Care during Pregnancy**

To help promote overall health and the early detection of conditions that may lead to birth asphyxia, the MNH Program advocates that all women receive focused antenatal care from a skilled provider. Focused antenatal care consists of interventions aimed at preventing and detecting problems such as anemia and pre-eclampsia that may contribute to other serious complications during pregnancy and childbirth.

While antenatal care will not necessarily prevent newborn asphyxia, it can help to ensure that both the mother and her baby are as healthy as possible at the time of birth. Antenatal care visits also provide an ideal opportunity for providers to counsel women about issues related to birth preparedness and complication readiness, including danger signs during pregnancy and labor and the importance of seeking care from a skilled provider at birth. Women should be encouraged to plan to give birth where resuscitative care is immediately available.

### **MNH Program Activities**

The MNH Program promotes these approaches to detecting and treating newborn asphyxia through its dissemination of clinical guidelines manuals, such as *Managing Complications in Pregnancy and Childbirth* and *Management of Newborn Problems* (forthcoming from the World Health Organization and JHPIEGO with BASICS), and through its clinical training for healthcare providers.

MNH Program clinical training participants learn to make a rapid assessment of a baby's condition at birth and to provide the appropriate response. Providers learn that, as long as a baby is crying and breathing normally, they should avoid any manipulation, such as routine suctioning, which may cause trauma or introduce infection. If a baby is distressed and needs resuscitation, however, the use of the simple suction tube and neonatal mask and bag can make a real difference in saving the baby's life.

The MNH Program promotes this approach to managing newborn asphyxia because it can be implemented safely and effectively by all levels of providers and because the equipment needed for resuscitation is minimal and the procedure is simple. The approach reflects the Program's focus on low-technology solutions that are effective and that can be sustained in areas with few resources.

**For more information  
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Program visit our  
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