



# BRIGHAM AND WOMEN'S HOSPITAL

## Parent Information Sheet:

### Persistent Pulmonary Hypertension of the Neonate (PPHN)

#### What is Persistent Pulmonary Hypertension of the Neonate (PPHN)?

- Persistent = not going away
- Pulmonary = of the lungs
- Hypertension= high blood pressure
- Neonate = newborn baby

PPHN refers to a condition of newborn babies who have high blood pressure in their lungs that makes it hard for the lungs to get oxygen into the blood stream.

#### Why do babies get PPHN?

After birth, your baby's blood pressure in the lungs normally goes down to allow blood to flow to the lungs but, in some cases, this does not happen. Sometimes it is because of pregnancy or birth complications such as infection or inhalation of meconium (baby's first bowel movement) in the lungs, but sometimes we don't know why (this is called 'idiopathic').

#### How do we know if a baby has PPHN?

Babies with PPHN need help with their breathing usually with a breathing tube and a breathing machine (ventilator). We can find out if a baby has PPHN with blood tests, a chest x-ray which tells us how the baby's lungs look, and an ultrasound of the heart (also called ,cardiac echocardiogram or echo) which tells us if the blood pressure in the lungs is too high and blood is being sent away from the lungs.

#### How do we treat babies with PPHN?

Your baby may need all or some of the treatments below:

1. We take measures to help the baby breathe. These may include, supporting the baby's breathing with a breathing machine (ventilator) through a breathing tube, giving medications to relax and calm your baby down, and giving a special medication (surfactant) down the breathing tube to decrease the baby's breathing difficulties.
2. We take measures to support your baby's blood pressure so that the high blood pressure in the lungs is balanced by a strong blood pressure in the rest of the body. These include giving intravenous fluids, including blood transfusions if needed and giving medications to increase the baby's blood pressure (also called pressors or inotropes).
3. Through the breathing tube, we give inhaled Nitric Oxide, a gas that directly lowers the baby's blood pressure in the lungs.
4. We treat anything that makes PPHN worse such as infection, agitation, or changes in the body's chemical balance and we provide nutrition through an intravenous line until the baby is ready to feed normally.



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## **How will my baby look during treatment for PPHN?**

Your baby will have a breathing tube in the mouth (intubated) and will be connected to a breathing machine (ventilator) and to a heart monitor and other monitors through wires so we can follow him or her closely. He will most likely be asleep or very sleepy because of medications used to keep him/her comfortable and she/he may also need medications to relax his/her muscles so he or she will not move. There will be an intravenous line placed in the belly button (umbilical venous line) and on one of his limbs for nutrition and medications. Most of the times, there will also be an arterial line (either umbilical or on wrist or ankle) for continuous monitoring of the blood pressure and blood sampling.

## **How can I help my baby?**

Learning as much as you can about PPHN can help reduce your stress by understanding the course of the disease and the medical treatments. Your love and care are most important to your baby at this time. Your baby's nurse will teach you how to comfort your baby. If you notice anything about your baby that concerns you, please tell your nurse or another member of the medical team.

## **How can I help my baby after recovery from PPHN?**

After treatment for PPHN, your baby's lungs may take weeks or even months to fully recover so it is important to protect your baby from catching a cold or the flu. You can help by practicing good hand washing, keeping your baby away from sick people and crowded places and by bringing your baby to all follow-up visits advised by the doctors. Low oxygen levels can sometimes cause injuries that do not become apparent until the baby is older so follow-up check-ups are really important to your baby's health. These visits may include hearing screenings and visits to the specialist who checks the baby's learning and motor skills.

## **What if I have questions?**

The doctors, nurses and respiratory therapists will talk to you about the treatment your baby needs. You should feel free to ask to speak to a nurse or senior doctor (fellow or attending neonatologist) anytime, day or night. A social worker can help you and your family with other stresses or practical challenges.