

## Medical Equipment in the NICU

### *What you will see*

**Accu-Chek:** A machine that measures blood glucose.

**Bili lights (phototherapy):** Special blue lights that help break down bilirubin in babies with jaundice. The lights may be placed over the baby's incubator or placed beneath the baby in a "bili blanket." Bili lights do not affect the baby's skin or change their body temperature.

**Bili mask:** These soft cotton patches are placed over the baby's eyes during phototherapy.

**Blanket warmer:** This machine keeps bedding and clothes warm so that the baby will not lose heat when these items are changed. The warmer uses a blue light instead of white light. Blue light is easier on the eyes, uses less power, and lasts longer.

**Breathing tube:** A tube that connects to a ventilator to provide oxygen and breathing support to the baby. A breathing tube is also called an endotracheal tube. (See *Endotracheal tube*. Also see the photo on page 38.)



*Accu-Chek*



*Bili lights*



*Blanket warmer*

**Chest tube:** A small plastic tube inserted through the baby’s skin and into the space between the lung and chest wall. This tube removes excess air, fluid, or both. A chest tube may be in place for several days until the problem goes away.

**Continuous positive airway pressure (CPAP):** A way to provide oxygen and keep the lungs expanded. A CPAP machine keeps a constant pressure of air in the baby’s airways (*positive airway pressure*). It delivers pressure through a mask that goes over the baby’s mouth.

**Crib:** A baby who is ready to leave the incubator is moved to a crib, also called a *bassinets*. The NICU has small cribs and large cribs. This move usually happens when the baby is able to maintain body temperature without losing weight, and is no longer having problems when outside the incubator.

**Endotracheal tube (ET tube):** A small plastic breathing tube that goes through the baby’s mouth and down the windpipe. The ET tube is connected to a ventilator and provides extra oxygen to help the baby breathe. The tube is suctioned to remove mucus from the baby’s lungs. (See *Breathing tube*. Also see photo on page 38.)

**Feeding pump:** A machine that delivers a set amount of food over a set period.



*Feeding pump*

**Feeding tube:** A tube that may be used for feeding until the baby is ready to feed at the breast or from a bottle. (See photo on page 38.)

**Hand sanitizer:** Gel with an alcohol base that kills germs that could cause infection. There is a hand sanitizer bottle outside and inside every patient room. Everyone who enters the room should “gel in,” and then “gel out” when they leave.

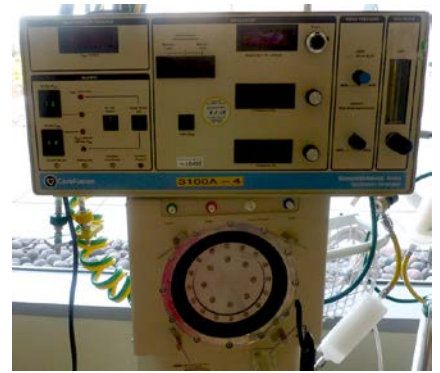


*Hand sanitizer*

**High-frequency jet ventilator (HFJV):** A way to provide air to the baby. HFJV delivers small *tidal volumes* (the amount of air inhaled and exhaled with each normal breath) at very high speeds. Most babies breathe 40 to 60 times a minute. An HFJV breathes for a baby up to 650 times a minute. Air flows through the baby’s breathing tube, and into their airway. The baby then exhales the air. A ventilator (see *Ventilator*) is used with the HFJV to provide back-up support. HFJV is very useful for babies who have breathing problems like *pulmonary interstitial emphysema* (see handout “Medical Terms in the NICU”).

**High-frequency oscillator ventilator**

**(HFOV):** A way to provide air to the baby. HFOV delivers small *tidal volumes* (the amount of air inhaled and exhaled with each normal breath) at very high speeds. A HFOV breathes for a baby up to 900 times a minute. It sends air through the breathing tube and into the baby's airway, then pulls air back out. HFOV is very useful for babies who cannot keep their *oxygen saturation* (level of oxygen in a baby's blood cells) in the normal range.



*High-frequency oscillator ventilator*

**Incubator:** An enclosed bed with clear walls that allows the care team to watch the baby. The temperature inside the incubator is adjusted to meet the baby's needs. Air in the incubator is circulated through a filter. Babies are moved to a newly sterilized incubator once a month to help prevent infection.



*Incubator*

**Intravenous line (IV):** A thin tube placed in one of the baby's veins, often in the hand, foot, or scalp. Fluids and medicines are given through the IV. (See photo on page 38.)

**i-STAT:** A handheld tool that quickly provides lab results for testing that is done at the bedside.

**IV pole:** If a baby needs an intravenous line (IV), an IV pole will be beside the baby's bed. Bags or syringes holding medicines and fluids will be placed on this pole. IV tubing is used to connect the bags or syringes to the baby's IV. (See photo on page 36.)



*i-STAT tool*

**Leads:** Small, sticky paper discs with wires that carry information about the baby's *vital signs* to a monitor. Several leads are taped on the baby's chest. Nothing enters the baby's skin. Also called *cardiorespiratory* leads. (See photo on page 38.)

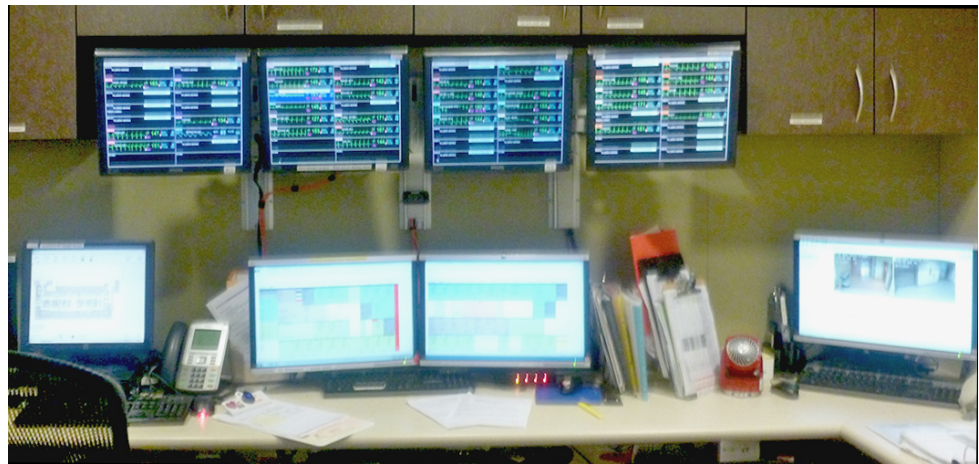
Leads help us monitor your baby's:

- *Respiratory rate:* The white number on the monitor shows how many breaths your baby takes in 1 minute.
- *Heart rate:* The green number on the monitor shows how many times your baby's heart beats in 1 minute.
- *Oxygen saturation:* The blue number on the monitor shows how much oxygen is in your baby's blood.



*IV pole*

**Monitor:** A screen that is used to watch and record the baby's vital signs. There is a monitor in each room. The information on the monitor is displayed other places in the unit as well, so that nurses can watch the baby's vital signs at all times. (See *Leads*.)



*Monitors at the nurses' station*



A NAVA machine

**Nasal prongs:** Thin, flexible tubes placed in the nostrils that deliver air flow and oxygen to the baby.

**Near-infrared spectroscopy (NIRS):** This device measures how well blood and oxygen are reaching the brain or kidneys. Small sticky leads are placed on the baby's head or back, or both.

**Neopuff:** This machine is used to help babies who have stopped breathing. A nurse gives *positive pressure breaths* by hand to the baby using the Neopuff. There is a Neopuff machine in every patient room in the NICU.

**Neurally adjusted ventilatory assist (NAVA):** This machine helps the baby breathe while your baby is still intubated. A feeding tube in the baby's mouth or nose picks up the electrical signals sent by the brain to the diaphragm. These signals tell the machine what air pressure the baby needs.

A NAVA is often used as *non-invasive NAVA (NIV NAVA)* when a mask or prongs are used to provide air.

**Nitric oxide (NO or "nitric"):** A special gas that helps the baby's lungs use oxygen. It may be added to the oxygen that is given through nasal prongs or a ventilator (see *Nasal Prongs, Ventilator*).

**Oximeter:** A device that monitors how much oxygen is in the blood. (See photo on page 38.)



A baby with nasal prongs

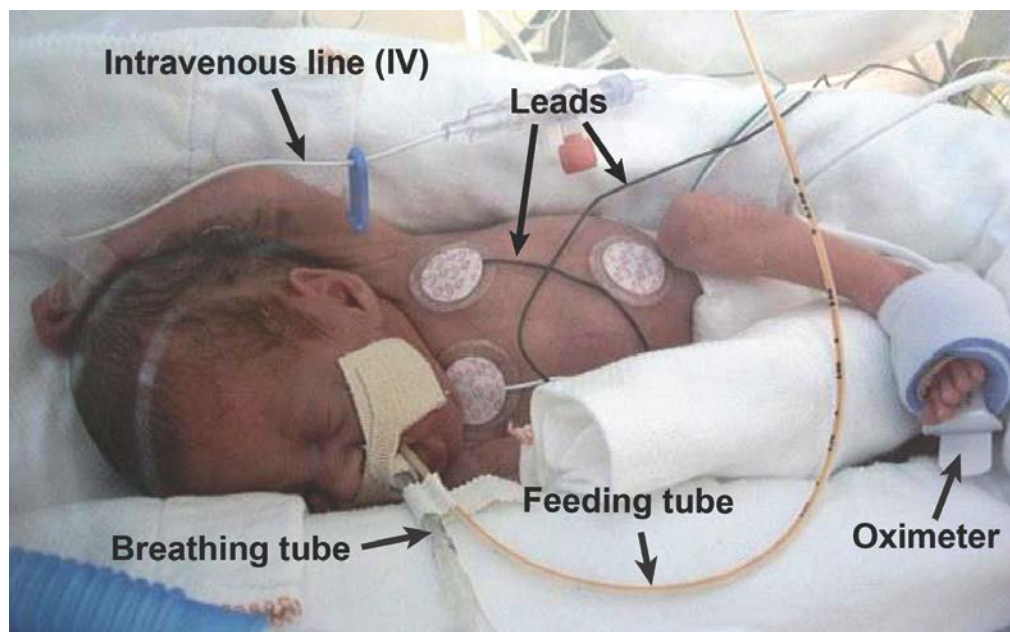


A baby with NIRS leads  
(Medtronic photo used by permission)



Neopuff machine

**Oxygen:** A compound in the air that all humans need to live. Room air is 21% oxygen. Babies who have a hard time breathing may receive up to 100% oxygen. The amount of oxygen needed is determined by the ABG (see *ABG* in the handout “Medical Terms in the NICU”).



*This baby has an IV, leads, a breathing tube (endotracheal tube), a feeding tube, and an oximeter.*

**Peripherally inserted central catheter (PICC):** A kind of intravenous line (IV) that is used when a baby needs an IV for more than a few days. A PICC is a long, flexible tube. It is inserted into an arm or leg vein and threaded into a large blood vessel deep inside the body. It is used to give medicines, fluids, and nutrients. Placing a PICC means the baby will have fewer needle sticks than if regular IVs are used.

**Stethoscope:** A tool used to listen to the baby’s heart or breathing. A stethoscope usually has a small disk called a chest piece that is placed against the baby’s chest and 2 tubes that connect to earpieces.

**Transcutaneous monitor (trans Q or TCoM):** A monitor that shows an estimate of how much oxygen or carbon dioxide is in the baby’s blood. A round sticky pad that contains wires (an *electrode*) is placed on the baby’s skin. This electrode warms the skin and brings the blood closer to the surface. This way, the oxygen or carbon dioxide can be measured. The electrode is moved every 8 hours. The electrode may leave a red mark on the skin. This mark will go away about 24 hours after the electrode is removed.

**Umbilical artery catheter**

**(UAC):** A thin, flexible tube placed in an artery of the umbilical cord. The nurse uses the UAC to give the baby fluids, draw blood samples, and measure blood pressure.

**Umbilical vein catheter**

**(UVC):** A thin, flexible tube placed in the vein of the umbilical cord. The nurse gives the baby fluids and medicines through the UVC.

**Ventilator:** A machine that helps the baby breathe. It delivers a certain number of breaths per minute, pressure to expand the lungs, and oxygen.

**Z-Flo:** A device that looks like a gel pillow. It holds babies in a comfortable position, even with their health condition and all the medical equipment around them.



*Ventilator*



*Z-Flo device inside an incubator*

