

## FACTS AND STATISTICS ON NEWBORN BABIES

Each year over 250,000 babies are born in Australia. About 21,000 of these babies are born prematurely at less than 37 weeks gestation and more than 2,500 are born prior to 32 weeks.

### Neonatal Care

About 15% of all babies born in Australia require care in a specialised nursery, totalling more than 5,700 admissions to neonatal intensive care units each year.

Neonatal Intensive Care Units (NICU or Level III Nursery) provide specialised treatments to infants with severe health problems. Up to half these infants require artificial assistance to breathe and a large proportion undergo major surgery.

Monash Medical Centre runs one of only four NICUs in Victoria and treats about 1,000 newborns each year.



Special Care Nurseries (Level II) also help numerous very sick babies every year providing IV fluids, medications, oxygen therapy and monitoring of heart rate and breathing.

### Low Birthweight

A low weight at birth is a major risk factor for premature babies; the lower the birthweight the greater likelihood of serious illness and death.

Low birthweight is defined by the World Health Organization as follows:

- low birthweight - babies weighing less than 2,500 grams (<5.5lbs)
- very low birthweight - babies weighing less than 1,500 grams (<3.3lbs)
- extremely low birthweight - babies weighing less than 1,000 grams (<2.2lbs).

Over 5% of all babies born in Australia have low birthweights and about 2,250 infants weigh less than 1,500 grams. Furthermore over 1,000 extremely low birthweight babies are born each year in Australia. Miraculously, given their size and prematurity almost half of these survive with the aid of modern medicine in NICUs.

### Perinatal Mortality

There are usually over 2,000 perinatal deaths each year in Australia.

Perinatal deaths are defined as deaths that occur in the period shortly before or after birth. This includes stillborn infants and those who never breathe after delivery (fetal deaths) as well as those who die within the first 28 days of life (neonatal deaths).

While this statistic has been reduced by half in the last decade, thousands of mothers, fathers, brothers, sisters, grandparents, aunts, uncles, friends and many more are still faced with the torment of losing a child.

### **Key problems facing the newborn**

Premature infants can suffer from a range of serious, life-threatening conditions due to the immaturity of their organs.

#### Lung Problems

One of the greatest concerns of premature labour is inadequate development of the newborn's lungs. Some of the complications that arise with immature lungs are:



- Respiratory distress syndrome (RDS) which causes difficult breathing due to a lack of the agent surfactant which stops lungs collapsing and makes them easier to expand.
- Chronic lung disease (CLD) or bronchopulmonary dysplasia (BPD) which occurs when if the immature lungs do not withstand the pressure of a respirator and the concentrated oxygen which damage the cells in the lungs. The tissues inside the lungs become

inflamed, causing scarring which leads to breathing difficulties.

- Apnea and bradycardia - Premature infants whose respiratory centre in the brain is not fully developed are susceptible to episodes of apnea, when they stop breathing for short periods of time. This in turn can lead to bradycardia which is the slowing down of the heart rate, usually caused by a drop in oxygen levels when breathing stops.

#### Other conditions

There are a great many conditions that can develop in the early weeks of life after premature delivery. These include:

- Intraventricular hemorrhage (IVH) - Premature babies are at increased risk of bleeding in their brain. This is usually not a major long-term problem, but can lead to future complications such as cerebral palsy, mental retardation and learning difficulties.
- Patent ductus arteriosus (PDA) is a cardiac disorder due to an open blood vessel, called the ductus arteriosus. In full-term infants, this blood vessel closes soon after birth. However the more premature the infant, the more likely this duct remains open, which can cause complications due to the load placed on the heart.
- Necrotizing Enterocolitis (NEC) occurs when a portion of the newborn's intestine is damaged, usually caused by poor blood flow or infection in the bowel wall. Patients require intravenous feeding and antibiotics and sometimes surgery.
- Sepsis occurs when bacteria enter the blood stream, when it can lead to low blood pressure (shock) and serious injury to vital organs such as the brain.
- Long term consequences

With modern intensive care, increasing numbers of premature babies who once were at risk of death or injury now live fulfilled lives. Yet many, particularly those with low birthweights remain at risk of experiencing long term physical and neurological complications. As young children and teenagers they are more likely to have difficulty at school. Some research also suggests that prematurity and low birthweight can predispose people to serious health problem, such as diabetes and chronic heart disease, as adults.

### **Sudden Infant Death Syndrome (SIDS)**

Following the introduction in 1991 of the National SIDS Council of Australia public education campaign recommending the supine (back) sleeping position of infants, the death rate from SIDS has decreased to a third. Yet it remains a serious problem, responsible for 17% of post-neonatal deaths.

### **Research Needed**

Through greater understanding of the development of the foetus and the newborn scientists and neonatal intensive care clinicians at the Ritchie Centre are dedicated to improving the survival rate and long-term quality of life of premature infants.

### **References:**

*Australia's mothers and babies 2004* Australian Institute of Health and Welfare (AIHW) Perinatal Statistics Unit (December 2006)

*A Picture of Australia's Children* AIHW (May 2005)

*Australia's Health* No. 10 AIHW (June 2006)