

Early interventions and different health service delivery models will be developed, pilot tested and evaluated in community settings. The cohort of preterm infants from the Group Prenatal Care study and/or the Gene and Environment study will be used for intervention studies and follow-up. In addition to addressing interactions between prenatal events and child development, our team will perform a comprehensive cost analysis of preterm birth to Albertans. Our team will examine the effects of improved father-child interaction on development of preterm infants as well as determining the outcomes associated with increased parental care while a preterm infant is in the neonatal intensive care unit.

### **Detailed Research Strategies**

#### **Project 1: Effects of an Education Intervention on Fathers' Skills in Interaction and Language Development in Late Preterm Infants**

**Co-leader: Dr. Benzies and Dr. Magill-Evans**

**Researchers: Dr. Leew**

**Collaborators: Dr. Girolametto, Dr. Hodge, Dr. Nettel-Aguirre, and Dr. Tough**

Fathers contribute to infant development in addition to the important contribution of mothers. An educating intervention may influence father parenting and child language and behavioural development. Knowledge gained from this study may be used to inform neonatal follow-up programs to mitigate risks and to optimize language outcomes for late preterm infants.

#### **Project 2 Pilot Study: Care by Parents in a Neonatal Intensive Care Unit (NICU)**

**Leader: Dr. Lee**

**Researchers: Dr. Yee, Dr. McNeil**

**Collaborators: Dr. Narvey, Dr. Cote**

The NICU is an environment with complex technology and monitoring equipment. However, this may not be optimal for infants, whom may benefit from consistent love and care and a quiet environment. We will examine the NICU environment for inconsistencies in medical care. Moreover, a pilot intervention study will be performed, with a formalized approach of parental care for the infant. Birth outcomes and maternal mental health will be observed. A randomized controlled trial of this approach will also be performed. Such parental care may improve long term growth and neurodevelopmental outcomes after discharge as well. It will also potentially allow more efficient allocation of NICU resources.

#### **Project 3: Burden of Preterm and Low Birth Weight Births (PT/LBW): Estimating the Costs and Outcomes for a Geographically Determined Cohort**

**Co-Leaders: Dr. Newburn-Cook and Dr. Schopflocher**

The cost of preterm births goes beyond direct medical costs to indirect costs to parents and non-financial burden. A more comprehensive analysis of medical and non-medical costs will be performed, which will be essential for benchmarking and future evaluations of cost-effectiveness of new policies and interventions.