



Respiratory Medicine at the Montreal Children's Hospital: Helping Sick Children Breathe Easier

It should be a child's natural right to breathe easy every day of their lives. But that's not the reality for many Canadian children. Diseases such as asthma and cystic fibrosis, and illnesses such as pneumonia and other respiratory conditions can put serious limits on a child's ability to play, go to school or even eat.

In Canada, hundreds of thousands of children live with respiratory conditions; some are easily manageable, while others require intense and complex care. Asthma, for example, is a potentially life-threatening condition if not managed properly. Over the past two decades, the rate of asthma among children has gone up but the rate of hospitalization has gone down—likely due to improved treatments and therapies.

Advances in treatment for respiratory diseases come from both research and caring for patients in the clinical setting and the Montreal Children's Hospital has been at the forefront of leading that change for more than half a century.

The Respiratory Medicine Division of the Montreal Children's Hospital is the largest academic Pediatric Pulmonary Program in Canada, with seven faculty members who are recognized both nationally and internationally. This program includes teaching and research in basic physiology and clinical sciences related to Cystic Fibrosis, tuberculosis, chronic disorders of the lung, neonatal and pediatric intensive care, neuromuscular diseases, and disorders of the control of breathing.

Services

The division has an active ambulatory component with close to 4,000 annual visits, including the Cystic Fibrosis (CF) Clinic, Chest Clinic, Tuberculosis Prophylaxis Program, Neuromuscular Clinic, Apnea Clinic, Bronchopulmonary Dysplasia Clinic, Infantile Respiratory Clinic and Home Ventilation Clinic. It provides services to the Pediatric Intensive Care Unit and the Neonatal Intensive Care Unit, and has an active in-patient service. There are fully equipped respiratory, exercise, sleep and infant lung mechanics laboratories within the division as well as a bronchoscopy service. Respiratory Therapy, the Jeremy Rill Centre for Sudden Infant Death Syndrome and the Sleep Laboratory are also part of Respiratory Medicine.



Innovation



Led by Dr. Larry Lands, the MCH Respiratory Medicine team is advancing the field of respiratory medicine with some outstanding innovative work, including:

- Participating in a network of neonatal monitoring centres with web-based reporting;
- Creating a portal for tracking tuberculosis in northern communities;
- Providing expanded home ventilation services to include cough-assist and breath stacking equipment in order to improve a child's airway clearance and lung function;
- Providing expanded flexible bronchoscopy and joint flexible-rigid bronchoscopy procedures with the department of Otolaryngology.
- Developing a web-based database for cystic fibrosis;
- Using hypertonic saline inhalation in the treatment of cystic fibrosis and other conditions;
- Participating in the multidisciplinary Craniofacial and Cleft Surgery group

How Kurling for Kids Can Help

The respiratory medicine division is among the most equipment dependent departments at the Children's. Because they treat patients throughout the hospital, from ages 0 to 18, they require a vast array of highly specialized tools to help diagnose and treat every form of respiratory disease and condition. Thanks to advances in medical technology, this equipment is becoming less invasive for our young patients, as well as providing higher levels of precision.

Below are the current equipment needs in respiratory medicine for the next 2 to 3 years. While the division benefitted from a significant renewal of its fleet with the move to the Glen, several of the items listed below are used on a daily basis and must be replaced to keep up with the high demand.

Respiratory medicine equipment



1. Neonatal software for MRI ventilator: **\$8,000:**

The software allows the ventilator to deliver small volumes of air to premature babies during MRI procedures. It offers a more precise and accurate diagnosis thanks to new technologies that were never available before.

2. Ten (10) oxygen analyzers: \$1000/each = **\$10,000:**

The Oxygen analyzer is used to measure the percentage of oxygen delivered to the young patients during respiratory therapy.





3. Four (4) Bipap machines: \$6000/each = **\$24,000:**

The BiPap machine is used to assist patients with respiratory deficiencies by blowing air into their lungs via a mask placed on the patients face. The machine pushes air into the lungs via a face mask placed on the face. It allows for clinicians to monitor the patients' breathing status and adjust settings accordingly.

4. 18 nasal Bipap masks: \$250/each= **\$4500:**

The mask is used with Bipap machines to provide a better flow of oxygen to the patient. A variety of mask sizes are available for the varying age groups of the pediatric population we serve.



5. Two (2) critical care Bipap systems: \$25,000/each = **\$50,000:**

The critical care Bipap systems are used in the Pediatric Intensive Care Unit to treat critically ill patients who have difficulties breathing due to respiratory infections. This system allows more air into the lungs, thereby offering a viable option for preventing intubation in acute respiratory failure, which is far more invasive.



Year 4 of the Naming Opportunity at the New Children’s Hospital (\$300,000 pledged over 5 years)

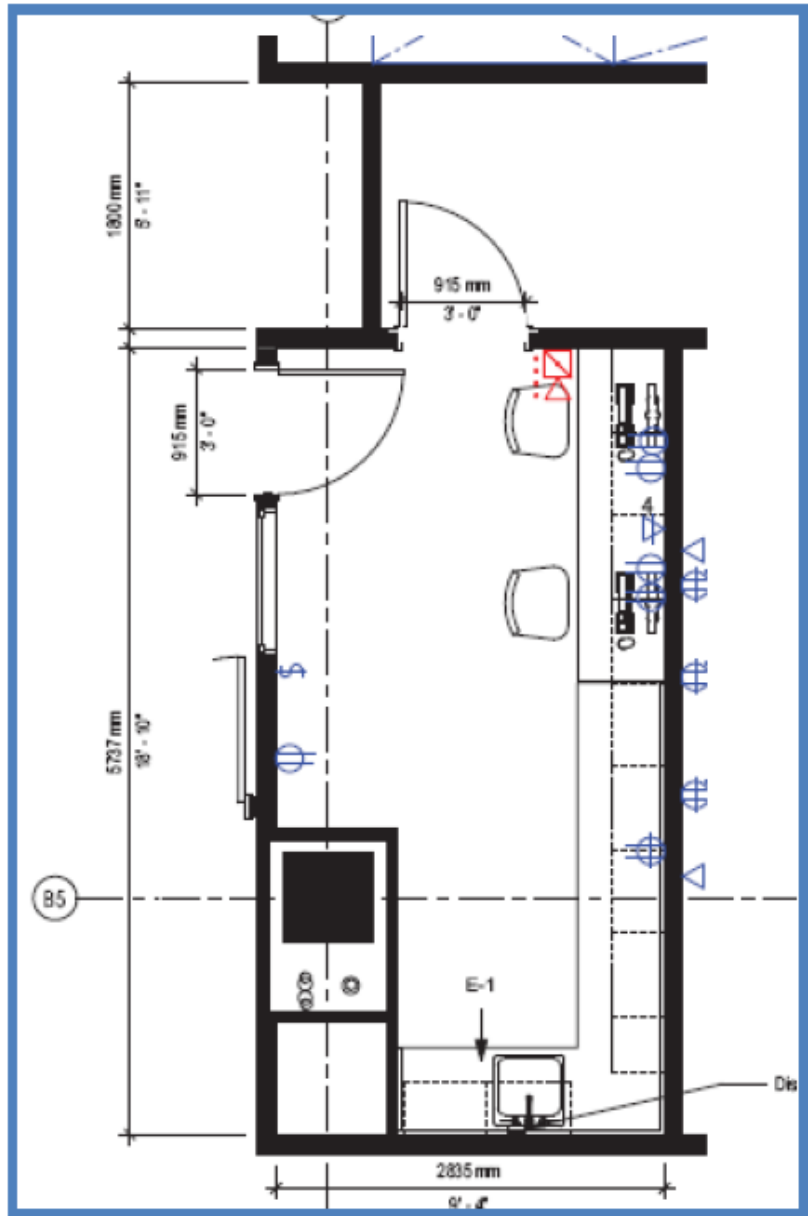
“Kurling for Kids” Playroom on the Medical/Surgical Ward - Location: 8th Floor, Pavillion B



Plan of 8th floor medical/surgical unit showing location of playroom

The medical/surgical pediatric patient care units will provide high-quality care to general medical and surgical patients who require admission to the hospital. The age group that will be admitted includes those from infant through age 18. This floor will accommodate hospitalized patients, as well as patients admitted to the short stay unit directly from the Emergency Department. All 34 patient rooms will be single, with private washrooms and place for a parent to spend the night. The projected occupancy rate on the wards is about 85%.

As this unit will be running on a 24-hour basis, the child life specialists will have the opportunity to organize a multitude of activities for the patients, including arts & crafts, movie nights and readings, all of which will cater to various age groups. This enclosed, dedicated space will be equipped with toys, books, computer workstations, a sink and adjacent space for storage.



Layout of the Kurling for Kids play room

