

**Preventing Infant Lung Disease in Canada's North:  
Building Canada, Leading the World**

**2012 Pre-Budget Submission to the House of Commons  
Standing Committee on Finance**

**Abbott Laboratories Ltd.**

**August 12, 2011**



## EXECUTIVE SUMMARY

A health crisis exists among Inuit babies in Canada's North who suffer devastating lung infections. The government has an immediate opportunity to implement an effective and proven treatment that can relieve the physical and emotional burden on children and families and reduce the financial costs associated with medical evacuation to faraway locations.

This science-based proposal supports a number of government priorities including the strengthening Canada's North, improving First Nations health, supporting Canada's agenda for maternal and child health in Canada and worldwide, and parallels the Nunavut Maternal and Newborn Health Strategy.

Respiratory Syncytial Virus (RSV) is the leading cause of severe lung infections, especially pneumonia and bronchiolitis, in infants and young children. Inuit babies in remote communities are particularly vulnerable and infants born in remote Baffin Island communities outside of Iqaluit have the highest reported hospital admission rate due to these debilitating diseases in the world. During a typical RSV season in communities like Igloolik, half of babies younger than six months are admitted to hospital following an emergency medical evacuation and one in ten are placed on life support due to RSV.

The preventable costs of medical care and evacuation are staggering: an average hospital stay costs more than \$26,000 while the cost for medical evacuation is \$19,000 or more. The First Nations and Inuit Health Branch at Health Canada, which is responsible for transportation and other expenditures by First Nations and Inuit communities, spent \$275 M on medical transportation in 2008-2009 alone.

With over 100 babies evacuated each season for lung infections, the potential for savings and long-term health benefits from prevention of these infections is clear. Unfortunately, the babies who need preventative care most are those least able to access it.

Since 2000, all across Canada over 60,000 babies, primarily those born prematurely, have been protected against RSV through the use of palivizumab, an innovative biologic therapy used to prevent hospitalization due to serious respiratory infections caused by RSV.

To build on this success, the government now has the opportunity to extend this therapy to all babies born in remote Nunavut communities, not just preemies and at risk-infants, and prevent hundreds more needless emergency evacuations and hospital admissions.

**We recommend that the Government of Canada provide \$7 million annually to implement a RSV prophylaxis (preventative treatment) program to ensure that all Inuit babies born in remote northern communities of Nunavut are protected against RSV**

Our proposal has the support of leading stakeholders including the Canadian Pediatric Society (CPS) who in 2009 recommended that consideration be given to administering RSV prophylaxis to all full-term Inuit infants six months of age or younger at the onset of the RSV season in northern remote communities. Our proposal also fulfills the following committee goals as discussed herein:

**Sustained Economic Recovery:** The development of Canada's northern regions is critical to our future as a nation. The northern economy will depend on the development of a healthy and productive workforce. By protecting vulnerable children from debilitating illness, we enable their future success in the workforce and immediately impact the ability of their families to continue to contribute to the economic growth of the North.

**Contribute to a Balanced Budget:** The extremely high costs associated with emergency medical transport and critical care treatment of infants with RSV and its complications will be immediately reduced through prevention of the infection resulting in net cost savings and the future health care costs avoided.

**Ensure Relatively Low Taxation:** Improving the health status of Inuit infants in remote northern communities can reduce pressure on taxation by limiting the need for government expenditures and enhancing revenue through economic expansion.

## **RSV A SIGNIFICANT HEALTH BURDEN**

In responding to the 2010 Speech from the Throne, the Minister of Health, The Honourable Leona Aglukkaq confirmed the government's commitment to improving the health of our Canada's youth, "*We believe that youth are the cornerstone of our communities. As such, one of our goals is to ensure our children enjoy a safer, healthier and more prosperous future.*" Addressing the crisis of severe respiratory disease suffered by babies in remote northern communities is a key opportunity to fulfill this commitment.

Respiratory Syncytial Virus (RSV) infection occurs in annual and seasonal epidemics. It is the most common cause of severe lung infections, especially pneumonia and bronchiolitis in babies and young children. In Canada, the RSV infection season extends from September to May.

RSV is responsible for the majority of the approximately 12,000 hospitalizations for bronchiolitis in children younger than two years of age in Canada, each year.

Premature babies and infants with chronic lung disease, congenital heart disease, or immune deficiency, and Inuit infants are particularly at risk for both hospitalization and mortality associated with RSV.

RSV infections in premature babies and those with existing lung or heart disease are often severe and Canadian data suggest that 25 to 36 percent of these patients will require admission to an intensive care unit and 18 to 25 percent of these will require mechanical ventilation.

Approximately one percent of children hospitalized with RSV bronchiolitis die, with an increase in mortality to three percent in those with pre-existing cardiac or lung disease.

## **RSV A SIGNIFICANT CONCERN IN CANADA'S NORTH**

RSV is the most common cause of bronchiolitis, and lower respiratory tract infection (LRTI) is the most common respiratory disease during the first year of life. From work done at the University of Toronto, it is known that all infants living in remote Canadian northern communities, not just those born premature, are at increased risk for bronchiolitis compared to infants in the rest of Canada.

The hospitalization rate due to severe lung infections for children living in Canada's North is approximately 800 percent higher than for children living in southern, non-aboriginal Canadian communities. In fact, the bronchiolitis-related hospitalization rate in the North is the world's highest.

A high prevalence of smoking in pregnancy, a high proportion of adopted children, overcrowding and living in isolated communities have been identified as RSV risk factors for children living in Canada's North.

The advanced medical care needed for infants with LRTI in remote settlements often necessitates medical evacuation to the Qikiqtani General Hospital in Iqaluit, Nunavut or in the 7-10% of cases requiring intensive care or respiratory support, to Ottawa or Winnipeg sometimes without parents or family members.

Often admission to intensive care requires the infant to be placed on a respirator. This procedure is traumatic for the child, increases the risk of recurrent respiratory infections and often leads to chronic respiratory problems such as asthma as the child grows. The extended

absence of family members who accompany the baby also creates financial and emotional hardships on the family and remaining community members.

During a typical RSV season in communities like Igloolik, half of infants younger than 6 months are admitted to hospital following an emergency medical evacuation and one in ten are placed on life support due to RSV infection. Costs to care for these infants are extremely high with an average hospital stay costing in excess of \$26,000 and the average cost for medical evacuation costing almost \$19,000.

Due to the frequency of hospitalization, air transport, and significant intensive care unit costs, severe respiratory infections constitute the principal healthcare expenditure for Inuit babies.

While RSV-specific information is not readily determined, Nunavut's main estimates project more than \$59 M will be spent on travel and transportation overall in 2011-2012 while the First Nations and Inuit Health Branch at Health Canada, which is responsible for transportation and other expenditures by First Nations and Inuit communities, spent \$275 M on medical transportation in 2008-2009 alone. It is clear that prevention of RSV-related lung infections has the potential to significantly reduce emergency transport and health care expenditures at both the federal and territorial level.

### TREATMENT AND PREVENTION OF RSV

**Education and Awareness:** Parent and caregiver education and awareness is an important factor in preventing RSV transmission to young infants. RSV targeted education initiatives include how to avoid RSV exposure and acquisition as well as techniques to avoid modifiable RSV risk factors, such as smoking.

**Therapy and Treatment:** There is no vaccine that offers protection from RSV infection; however, a preventative treatment does exist. Palivizumab is an advanced biological therapy indicated for the prevention of serious lower respiratory tract infection caused by RSV in pediatric children at high risk of RSV disease.

In 1999, the CPS published guidelines on the use of palivizumab for the prevention of serious lower respiratory tract disease caused by RSV in pediatric patients at high risk of RSV disease; in particular, premature babies and babies born with severe lung disease.

In 2003 the National Advisory Committee on Immunization followed the CPS and recommended the use of palivizumab for infants born premature (<32 weeks gestation) if they are aged six months or younger at the start of the RSV season, children under 24 months with chronic lung or heart disease and consideration for prophylaxis for premature infants born <35 weeks gestation living in remote northern communities.

As a result of these recommendations, infants born premature and within six months of the start of the RSV season have access to palivizumab for the prevention of RSV infection through provincial and territorial public health programs. Since 2000, over 60,000 babies, primarily those born premature, have been protected against RSV through the use of palivizumab. This therapy has become the standard of care in Canada, providing a safe and effective method of reducing morbidity and mortality in vulnerable patient populations.

In 2009 the CPS issued an updated position statement on the prevention of RSV infection reaffirming the efficacy, cost-effectiveness and value of RSV prevention with palivizumab.

## OPPORTUNITY FOR CANADIAN LEADERSHIP IN NORTHERN INFANT HEALTH

Due to the increased incidence and severity of RSV, and the costs associated with emergency transportation and hospitalization of severe cases, the CPS in 2009 also recommended that children in remote northern communities born at less than 36 weeks gestation should be given RSV prophylaxis if they are less than six months of age at the onset of RSV season and that ***consideration be given to administering RSV prophylaxis to all full term Inuit infants less than six months of age at the onset of the RSV season in northern remote communities regardless of gestational age.***

This statement represents an opportunity for Canada to demonstrate global leadership at home by improving the health of our most vulnerable infant population living in the far North.

In January 2010, The Canadian Medical Association Journal also addressed the need for effective interventions to help address the “dire situations of maternal and infant health in Inuit-inhabited areas”. Canada’s Inuit-inhabited areas have substantially higher rates of infant death, and the risk of death due to infection is more than eight times higher than other rural or northern areas of Canada.

Given the unquestionable success in preventing RSV infection in premature infants, the government now has the opportunity to extend this preventative therapy to all babies born in remote Nunavut communities, not just preemies, and prevent hundreds more needless emergency evacuations and hospital admissions. Unfortunately, these babies who need preventative care most are those least able to access it.

## RECOMMENDATION

**We recommend that the Government of Canada provide \$7 million annually to implement a RSV prophylaxis (preventative treatment) program to ensure that all Inuit babies born in remote northern communities of Nunavut are protected against RSV**

This investment could be recouped through savings in travel and transportation costs in addition to savings elsewhere and, most importantly, a higher quality of life for Inuit children and their families. Canada would be world-leading and inform how other remote communities in Canada and countries worldwide deal with RSV.

## MEETING COMMITTEE AND GOVERNMENT OBJECTIVES

**Sustained Economic Recovery:** The development of Canada’s Northern regions is critical to our future as a nation. The Northern economy will depend on the development of a healthy and productive workforce and extending our sovereignty will require stable, growing populations. By protecting vulnerable children from debilitating illness, we enable their future success in the workforce and immediately impact the ability of their families to continue to contribute to the economic growth of the North. The government is also working with Northerners, through *Canada’s Northern Strategy* to increase access to skills training and education, better housing, and improved health care. This program will further build upon the Territorial Health Systems Sustainability Initiative that is part of that strategy and continue to reduce reliance on medical services outside of the North.

**Contribute to a Balanced Budget:** The extremely high costs associated with emergency medical transport and critical care treatment of infants with RSV and its complications will be immediately reduced through prevention of the infection resulting in net cost savings and the

future health care costs avoided due to the long-term impacts of severe RSV disease. While the travel and medical transportation costs outlined herein are not all directly related to RSV treatment they do speak to the reality of health care access for far-away communities and ways prevention could assist vulnerable populations while bringing significant savings to the system.

**Ensure Relatively Low Taxation:** Improving the health status of Inuit infants in remote northern communities can reduce pressure on taxation by limiting the need for government expenditures and enhancing revenue through economic expansion. This recommendation has the potential to limit exposure to more costly health care interventions and ensure healthier youth and families will contribute to the economic development of the North – leading to greater economic activities and enhanced government revenues without raising taxes.

**Maternal, Newborn and Child Health Initiative:** Canada's contribution to the 2010 G-8 Muskoka Initiative focused on three paths: strengthening health systems, reducing the burden of diseases and improving nutrition. RSV disease affects vulnerable northern remote communities around the globe. Through the adoption of the recommended prevention and education programs to reduce the incidence of RSV disease in Canada's North the government will demonstrate global leadership in northern and Arctic child health. Canada will address the long-standing and chronic problem of Inuit child health and provide a pathway for other nations seeking to improve the health and productivity of their northern populations.

## SUMMARY

The time to act is now. For a modest investment, the Government of Canada has the opportunity to effectively address a recurring health threat impacting our most vulnerable infant population, enhance the lives of Inuit citizens in remote settlements and lay another piece of the foundation for a healthy, productive northern population. We urge the Finance committee to seize the leadership opportunity to do the right thing at home and provide a new model in northern health to the rest of the world by recommending the government act in this area.