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## MEDIA RELEASE

May 13, 2009  
For immediate release

### Canadian doctors find better treatment for babies with respiratory infection and slash hospitalization rates

**Vancouver, B.C.** – Canadian pediatricians have found a better way to help babies suffering from a lung infection called bronchiolitis and were able to reduce the number admitted to hospital by more than one-third.

A national study, led by Dr. Amy Plint at the Children's Hospital of Eastern Ontario (CHEO) and University of Ottawa, Dr. Terry Klassen of the University of Alberta, Stollery Children's Hospital, Dr. David Johnson at the Alberta Children's Hospital and University of Calgary, and Dr. Hema Patel at Montreal Children's Hospital and McGill University showed that combining two common drugs cut hospital admissions by 35 per cent.

Results of the study, which involved 800 babies in emergency departments in eight pediatric hospitals across Canada, including BC Children's Hospital are being published Thursday, May 14, 2009 in the New England Journal of Medicine.

"Thirty five per cent is a substantial drop. These findings are truly significant to the health-care system and to families of young children around the world," said Plint who was the lead study investigator and author. Plint is a pediatric emergency physician at CHEO and associate professor in Pediatrics and Emergency Medicine at the University of Ottawa. "Bronchiolitis is a very common illness with symptoms that are distressing for infants and their parents and results in a high rate of hospital admissions and high health care costs. The children in the study who received the combined drug treatment got better sooner, went home faster, and were less likely to need hospital care."

Bronchiolitis, an inflammation of tiny airways in the lungs called bronchioles, usually affects children under the age of two, and especially those aged three to six months. Usually caused by viral infections, it makes the baby cough, wheeze and have difficulty breathing. In Canada, an estimated 35 in 1,000 babies are hospitalized with the condition each year, with rates nearly doubling in the last 10 to 15 years. Annual hospitalization costs for bronchiolitis in the U.S. have been estimated to be as high as \$700 million. In 1993 the cost of bronchiolitis in Canada was conservatively estimated at \$23 million and admission rates have doubled since this time.

“This is exciting because bronchiolitis is a distressing disease for young children and their parents, and a tremendous burden for the health care-system in terms of hospital admissions,” says Klassen, professor and in the Department of Pediatrics in the Faculty of Medicine & Dentistry at the University of Alberta. “To date, there have been no clear treatment options other than giving babies oxygen if their oxygen levels were low and fluids if they weren’t feeding.”

One of the drugs in the study, called epinephrine, is a bronchodilator which relaxes the muscles and opens the airways; the other, called dexamethasone, is a steroid that reduces inflammation. These types of drugs have been tried as treatments for bronchiolitis, but studies have not supported their effectiveness when used separately.

However this is the first large study to use the two drugs together and “we found that two drugs together produced surprising results” says Plint.

“The fact that combined treatment allowed many more infants to be safely treated in their own homes, versus in-hospital, is a tremendous benefit. Hospitalization is a significant disruption of regular life for young infants and their families,” explains Dr. Hema Patel from the Montreal Children’s Hospital, McGill University.

A randomized clinical trial at multiple sites in Canada was conducted to determine which treatment would be more effective. Infants aged six weeks to 12 months and diagnosed with bronchiolitis were randomly assigned to one of four study groups. One group was treated with both epinephrine and dexamethasone; one with only epinephrine; one with only dexamethasone, and one group received a placebo.

The study found that infants who had the combined drug treatment returned to normal breathing and feeding more quickly, and were discharged faster. A follow-up seven days later showed 35 per cent fewer hospitalizations compared to infants from the other groups.

The study was conducted by the collaborative research group Pediatric Emergency Research Canada (PERC) and funded by the Canadian Institutes of Health Research (CIHR), at \$1.96 million, with additional funding from the Alberta Children’s Hospital Foundation. Nine universities and eight hospitals across Canada participated including: BC Children’s Hospital in Vancouver, Children’s Hospital of Eastern Ontario, the Alberta Children’s Hospital Calgary, London Health Sciences Center, the Children’s Hospital of Western Ontario in London, the Montreal Children’s Hospital, Sainte Justine Hospital in Montreal and the IWK Health Centre in Halifax.

Dr. Sandra Whitehouse of BC Children’s was among the 14 co-authors of the paper that will be published by the NEMJ.

“On average we see 750 cases of bronchiolitis each year at BC Children’s. The illness is very stressful for both infants and their parents,” said Dr. Whitehouse. “This study has gone a long way to identify effective treatment. Now more babies can get better faster at home with their parents instead of needing to be hospitalized. This has the added benefit of decreasing the burden on the health care system.”

“Our findings have potential implications for treating not just children with bronchiolitis, but also many other young children with multiple wheezy episodes,” said Johnson, a Professor of Pediatrics at the University of Calgary. “One in three children have at least one wheezy episode before their third birthday. We anticipate insights from our study will lead to follow-up studies that may ultimately improve how we care for all these children.”

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