



News Release

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Universal vaccination associated with decreased Canadian cases of most deadly strain of meningitis

Canadian infants now routinely immunized with meningococcal C vaccine

(Vancouver, BC – March 2, 2009) – Universal childhood vaccination against meningococcal C appears to reduce Canadian incidence of the most deadly strain of bacterial meningitis, reports new research published in the March issue of *The Pediatric Infectious Disease Journal*.

The Men C vaccine was introduced as part of universal immunization programs for children in Quebec and Alberta in 2002 and in British Columbia and Prince Edward Island in 2003.

By 2005, all Canadian provinces included Men C vaccine as part of routine childhood vaccinations. Staggered implementation across Canada offered researchers the opportunity to evaluate the universal vaccination program.

“There was a dramatic decline in provinces with the early immunization program, suggesting the program works,” says Dr. Julie Bettinger, the study’s lead author. Dr. Bettinger is a scientist in the Vaccine Evaluation Centre at the Child & Family Research Institute and assistant professor in the Department of Pediatrics at the University of British Columbia.

Prior to Men C universal vaccination, BC, Alberta, and Quebec had rates of meningococcal C disease that were nearly 4.5 times higher than the rest of Canada. The study reports that today these provinces have the lowest rates in Canada, from 0.41 cases per 100,000 people in 2002 down to 0.07 per 100,000 in 2006. The provinces with later introduction of universal Men C vaccination showed no major changes in the one year of follow up study, with annual rates of meningococcal C at 0.08 per 100,000 people in 2006.

“The numbers may seem small, but even one case of the disease is one too many,” says Dr. Bettinger. “It can strike without warning and cause death or permanent physical or neurological disability. Because meningococcal infection is spread by saliva through coughing, sneezing, and kissing, it has the potential to become an epidemic. Universal vaccination is critical to control disease and prevent epidemics.”

Meningitis is an infection of the lining that covers the brain and spinal cord. It can be caused by viruses and bacteria. The viral causes of meningitis are rarely life-threatening whereas the bacterial types are more deadly. There are five strains of meningitis caused by the meningococcal bacteria (called serogroups A, B, C, Y, and W135). Meningococcal vaccines protect against A, C, Y, W135 with the Men C public vaccination programs targeting the meningococcal C bacteria. The researchers did not observe significant

changes in the rates of other strains causing meningitis following introduction of the meningococcal C vaccination program.

Infection with the meningococcal bacteria develops suddenly into a medical emergency that must be treated in hospital with IV antibiotics. Initial symptoms include fever, headache, stiff neck, vomiting, and drowsiness while in infants it may show as irritability and lethargy. It can cause gangrene leading to amputation of limbs, blindness, deafness, brain damage, and cognitive and neurological disability. Children, adolescents, and immuno-compromised individuals are most vulnerable to infection.

Meningococcal C is the most fatal strain of bacterial meningitis. It infects approximately 250 Canadian children and adults each year, according to the BC Centre for Disease Control. For every 100 children who get sick, up to 15 will die. Those who survive may face life-long disability.

The Men C vaccine is provided free to all children in BC along with the regular childhood vaccinations. Infants need two doses: one needle at two months of age and then another at 12 months. The vaccine is also provided to people who may be vulnerable because they are missing a spleen, they have a weak immune system, are transplant recipients, or they have a cochlear (inner ear) implant.

The Men C vaccine is the first product suitable for infants offering long-term immunity against meningococcal C and it became commercially available in 2001. Previously, adolescents or adults received a different vaccine which provided protection for about three years.

For the study, the 12 pediatric centres involved with the Canadian Immunization Monitoring Program, Active (IMPACT), carried out surveillance in collaboration with local public health officials. IMPACT meningococcal surveillance is administered by the Canadian Paediatric Society and funded by Sanofi Pasteur. Its surveillance centres are located in Newfoundland, Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and BC.

“What’s needed next is a vaccine against meningococcal B,” says Dr. Bettinger. “This is the Holy Grail of vaccine research.”

The Child & Family Research Institute (CFRI) conducts discovery research, clinical investigation, and applied health research to benefit the health of children and families. It is the largest research institute of its kind in Western Canada. CFRI works in close partnership with BC Children’s Hospital and Sunny Hill Health Centre for Children, and BC Women’s Hospital & Health Centre, agencies of the Provincial Health Services Authority; BC Children’s Hospital Foundation; the University of British Columbia and Simon Fraser University. For more information, visit www.cfri.ca.

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