



Canadian Center for Vaccinology
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The Canadian Center for Vaccinology (CCfV)

The Canadian Center for Vaccinology in Dalhousie University, the IWK Health Centre, and Capital Health, Halifax, Nova Scotia, was established to develop, implement, and evaluate vaccine technologies and vaccines for infectious diseases that have a significant impact on Canadian and global health and to train experts in these critical and evolving fields. This integrated, multidisciplinary research program brings together investigators from diverse disciplines to focus on vaccine discovery and evaluation. The collaboration of researchers in basic biomedical, clinical, and social sciences and the humanities provides a continuum of vaccine research from basic microbiological and molecular research in vaccine discovery and development, to translational research—research that takes basic science to marketable product—such as vaccine safety and efficacy studies, to evaluation research, encompassing clinical trials as well as vaccine program and policy evaluation. Social sciences and humanities research is integrated with both vaccine discovery and evaluation; it addresses a wide range of ethical, legal, and societal issues that inform policy and practice.

Current research in the Vaccine Discovery Group includes development of mucosal vaccines against pertussis, *Chlamydia* infection, and respiratory syncytial virus as well as the development of novel adjuvants and needle-free vaccine delivery systems. Ongoing research in the Vaccine Evaluation Group includes the assessment of new vaccines to prevent meningococcal infections in young infants, novel combination vaccines, and improved vaccines against hepatitis B and influenza. The Health Policy and Translation Group focuses on moving evidence into health policy in order to improve population health. An initial focus has been on influenza in pregnancy: demonstrating that pregnant women get more serious disease, discussing the implications of these findings for public health policy, and exploring current barriers to influenza vaccine uptake in pregnancy and novel and innovative approaches to improving influenza vaccine uptake. This group will continue to explore more generic public health, legal, and ethical issues in vaccine research, vaccine use, and vaccine uptake in pregnancy.

The Center's 20,000 sq. ft. facilities include laboratories for microbiological and molecular research, ambulatory clinical trial facilities, and data analysis, training, and videoconferencing/telemedicine capabilities. A Containment Level 3 laboratory and a human vaccine challenge unit will open within a year. The "sanofi pasteur human vaccine challenge unit," a 5,400 sq. ft., ten-bed inpatient unit with isolation rooms, will be the first of its kind in Canada and, with less than a dozen such facilities worldwide, at the cutting edge of global vaccine research.

The Canadian Center for Vaccinology serves as an "academic pipeline" for Canadian vaccine priorities identified through the National Immunization Strategy. It facilitates public health policy development by enabling policy makers and planners to obtain scientific data upon which to base their decisions and evaluate the outcomes of implemented policies. As one of the three partner institutions in the recently formed Pan-Provincial Vaccine Enterprise (PREVENT), a Centre of Excellence for Commercialization and Research, the CCfV will play an integral role in accelerating promising Canadian vaccine discoveries through preclinical and early clinical evaluation and catalyzing the commercialization of viable products that meet Canada's public health priorities. The CCfV in Halifax, together with other vaccine centres elsewhere in Canada such as in British Columbia (Vaccine Evaluation Center and the BC Centre for Disease Control, Vancouver), Saskatchewan (Vaccine and Infectious Disease Organization, Saskatoon), and Quebec (McGill University, Montreal, and Institut national de santé publique du Québec, Quebec City), form a nationwide network for collaborative and complementary vaccine research.