



Canadian Institutes
of Health Research

Instituts de recherche
en santé du Canada



ANNUAL REPORT OF ACTIVITIES 2004 • 2005

Building the Life Foundation



CIHR IRSC

IHDCYH
Institute of Human Development
Child and Youth Health

Canada



Message from the President



Dr. Alan Bernstein, O.C., FRSC
President
CIHR

When the Institute of Human Development, Child and Youth Health (IHDCYH) was created as one of CIHR's 13 founding Institutes in 2001, it was recognized that its mandate, which focused on a key period of the life cycle, differed substantially from those of the more disease-focused Institutes. This difference created both challenges and opportunities. The major challenges relate to the Institute's extremely broad domain comprising all organ systems and both the physiologic and psychologic aspects of health and disease, and to the rapidly changing developmental landscape spanning fertility, embryonic and fetal development, pregnancy, birth, infancy, childhood, and adolescence. The opportunities arise through overlapping mandates and partnerships with IHDCYH's sister Institutes and with Canada's many research, policy, governmental and voluntary organizations interested in the health of mothers and children. Examples of the opportunities seized thus far include such major health issues as genomic aspects of embryonic and fetal development; childhood asthma, obesity, neurobehavioural development, tobacco addiction, and palliative care, as well as maternal and child health disparities.

IHDCYH has chosen to concentrate its strategic initiatives in a few, large multidisciplinary Requests for Applications (RFAs). These RFAs are truly strategic, in that their scope (in terms of the variety of areas of research and disciplines) and size (in dollars) are difficult or impossible to fund under CIHR's traditional operating grants mechanism. They are also strategic in capitalizing on subject areas that are not only important for the health of Canada's mothers and children but that also take advantage of existing scientific strengths in the country, while building further capacity for the kind of research that will be required in the future.

IHDCYH has been one of CIHR's most active Institutes in the international arena. In addition to RFAs and summer training institutes, carried out in collaboration with the National Institute of Health's (NIH) Institute of Child Health and Human Development (NICHD), IHDCYH has been one of three CIHR Institutes to participate in CIHR's collaborative grants program with Japan and will also participate in CIHR's upcoming mission aimed at establishing similar collaborative links with China. The Institute has also actively supported maternal and child health research in developing countries as part of CIHR's Global Health Research Initiative.

Finally, IHDCYH has been in the lead in planning future cohort studies currently under discussion by CIHR and several of its federal partners. IHDCYH's upcoming launch of a major new pregnancy/birth cohort study to examine the etiologic roles of genes and indoor environmental exposures is a model of the type of large-scale initiative that should play a major role in creating and applying knowledge to benefit the health of future mothers and children in Canada and around the world.

I would like to thank Dr. Michael Kramer, IHDCYH's Montreal- and Ottawa-based staff, its Institute Advisory Board (IAB) members, and affiliated researchers across the country for helping to instill this Institute with vision, innovation, and leadership.

Message from the Scientific Director



Michael S. Kramer, MD
Scientific Director
IHDCYH

2004-05 marked the first full year of IHDCYH's home at McGill University and the Montreal Children's Hospital and its full complement of staff both at the Institute's home and in Ottawa. Anne-Cécile Desfaits had been the Assistant Director of the Institute of Aging, based in Sherbrooke, and IHDCYH was lucky indeed to be able to recruit a person of her experience and with her knowledge of CIHR's policies and procedures. She easily made the transition from one end of the age spectrum to the other. Louise Poulin was recruited from the Networks of Centres of Excellence (NCE) program to become IHDCYH's Ottawa-based Assistant Director for Partnerships and International Relations. She was joined half-time by Gwendoline Simard, as project officer who had previously worked with IHDCYH under the former Health & Environment cross-cutting initiative. With this excellent staff in place in both Montreal and Ottawa, IHDCYH made major new strides in establishing two joint (with NICHD in the U.S.) summer training institutes and in launching or planning new RFAs in ethics research and a pregnancy/birth cohort to study the roles of genes and the indoor environment in the etiology of asthma and allergy in early childhood. We also strengthened existing partnerships and developed new ones within and outside the CIHR family in a collaborative effort to fill our broad mandate, and took initial steps toward a new strategic vision for IHDCYH's next five years. With the transition now behind us and a bright new future before, IHDCYH is poised to lead the country in creating and applying new knowledge for the improved health of Canada's mothers and children.

Outstanding Research

The Institute of Human Development, Child and Youth Health (IHDCYH) promotes and supports the creation and application of knowledge that contributes to the improvement of the health of children, youth, and mothers in Canada and in the rest of the world.

Healthy Developmental Trajectories

In June 2003, IHDCYH launched a Request for Applications (RFA) on Healthy Developmental Trajectories of Infants, Children, and Youth in partnership with CIHR Institutes of Gender and Health (IGH), Neurosciences, Mental Health, and Addiction (INMHA), Nutrition, Metabolism, and Diabetes (INMD), and Population and Public Health (IPPH) and the US-based National Alliance for Autism Research. The objective of the RFA was to investigate the interplay between biological, psychosocial, environmental, and cultural influences and how the interactions among them shape the cognitive and behavioural development of infants, children, and youth. In August 2004, three projects were accepted for funding (see Table below) for a total of \$6 million over 5 years.

PRINCIPAL APPLICANT	GRANT TITLE
Richard E. Tremblay Université de Montréal	Understanding and fostering healthy developmental trajectories: A multidimensional, longitudinal, and experimental approach
Peter Szatmari McMaster University	Autism spectrum disorders: Pathways to better outcomes
Jennifer M. Jenkins University of Toronto	Transactional processes in the development of emotional-behavioural regulation: Individuals in context

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Healthy Pregnancy

In June 2004, the Institute launched a second RFA on Healthy Pregnancy to increase research funding in this area. After review of the letters of intent, four applicants were invited to submit a full proposal. Results of this competition will be available in the fall of 2005.

Ethics Research

In collaboration with CIHR's Ethics Office, IHDCYH launched an RFA in December 2004 entitled "Empirical and Conceptual Research on Ethical, Legal and Social Issues in Studies Involving Pregnant Women and Children." It is expected that empirical research will lead to a better understanding of current practices in research involving pregnant women and children and that conceptual research will help develop/refine relevant standards and establish a normative framework, to protect pregnant women and children who participate in research, especially in longitudinal studies. Results of this competition will be available in the fall of 2005.

Other CIHR Institute Strategic Initiatives

In 2004-05, IHDCYH co-funded research and New Emerging Team (NET) grants in areas of strategic importance through RFAs led by other Institutes, including research grants for the RFAs "Facing our Future: Human Genetics, Ethics, Law and Society" (Institute of Genetics, IG), "New Perspectives on Gender and Health" (IGH), and "Childhood Obesity" (INMD), and NET grants for the Palliative and End-of-Life care RFA (Institute of Cancer Research, ICR) and the Rural and Northern Health Research Initiative.

Ongoing Initiatives

In 2004-05, IHDCYH continued to fund various interdisciplinary strategic grants from past RFAs: three grants from our RFA on Healthy Gametes and Great Embryos, for a total of \$1,698,290, and one grant from our first RFA on Healthy Pregnancy, for a total of \$660,000.

In partnership with other CIHR Institutes, IHDCYH also provided \$604,465 to ten NETs covering many areas of the Institute's mandate.

Outstanding Researchers in Innovative Environments

Since its inception, IHDCYH has been committed to building capacity through effective training programs and salary awards to further strengthen research that relates to its mandate. Over the past year, the Institute has focused on supporting new investigators in the field of reproductive and child health.

Start-up Grants for New Investigators

In 2004-05, IHDCYH awarded 10 start-up grants, for a total of \$780,569, to provide first-year operating support to IHDCYH-affiliated new investigators through CIHR's Priority Announcements (see table 2 below). These new investigators were highly rated in the March or September 2004 CIHR open grants competition, but were just below the threshold for funding. The criteria for "new" included one criteria based on time since completing research training (less than six years) and a second excluding those with Principal Investigator status on one or more previous CIHR operating grants. It is expected that this targeted investment will lead to increased success rate for new investigators in future CIHR regular open competitions and in competitions for operating grants from other agencies.

MARCH 2004 OPEN COMPETITION

PRINCIPAL APPLICANT	GRANT TITLE
Christine T. McCusker Meakins Christie Labs (McGill University)	Impact of local antigenic stimulation in the neonatal period on development of allergic rhinitis and asthma
Cameron D. Skinner Concordia University	A micro-immunoassay to measure components of amniotic fluid associated with fetal growth and growth abnormalities
Fay F. Warnock British Columbia's Children Hospital	Behavior of the newborn infant: Pain, distress and caregiving influences

SEPTEMBER 2004 OPEN COMPETITION

Jeff Dilworth Ottawa Health Research Institute	Elucidating the mechanisms directing temporally ordered gene expression by myoD
Deda C. Gillespie McMaster University	Mechanisms of circuit development in the auditory system
Danielle Groleau Sir Mortimer B. Davis Jewish General Hospital	Sociocultural determinants of hyperemesis gravidarum: From ethnographic film to clinical and community-based changes
Tammy L. Ivanco University of Manitoba	Investigating autism: evaluating fragile X mental retardation syndrome and developmental teratogen exposure as risk factors
Vincent Joseph Université Laval	Direct control of carotid body development by estradiol?
Jennifer M. Medves Queen's University	What factors influence rural women's choices: Giving birth in rural Alberta and Ontario
Glen S. Vanarsdell Hospital for Sick Children (Toronto)	Analysis of the mechanisms of altered systemic and cerebral oxygen transport in children with hypoplastic left heart syndrome

Other CIHR Institutes Training and Salary Awards

Over the past year, IHDCYH co-funded training and salary awards through RFAs led by other Institutes such as a New Investigator Award in Aboriginal Health (Institute of Aboriginal People's health, IAPH), and a Doctoral Research Award in the INMD's Target Obesity RFA.

Ongoing Initiatives

The Institute provided ongoing funds (\$1,143,508 in 2004-05) to 11 Strategic Training Initiatives in Health Research within its research mandate.

The Institute also continued its collaboration with the Hospital for Sick Children Foundation (HSCF, Toronto) through the New Investigator Grant Program. This program aims to build capacity among new child health researchers to compete in future for grants from CIHR and other funding agencies. In 2004-05, IHDCYH and HSCF co-funded 17 new investigators across Canada, for a total of \$2,195,187 over 2 years.

Note : A complete list of funded grants and awards, as well as workshops is available on the Institute's website at: www.cihr-irsc.gc.ca/e/8697.html



Translating Health Research into Action

In partnership with the Canadian Language and Literacy Research Network (CLLRNet), IHDCYH invested \$100,000 in knowledge translation research initiatives to improve language and literacy skills of Canadian children by using research evidence to influence policies, programs, and practices.

Through its workshop program, IHDCYH also funded 35 multidisciplinary and cross-cutting workshops related to its research priorities, for a total of \$245,195 in 2004-05. Funded workshops include:

- **National Workshop to Establish Canadian Pediatric Healthcare Indicators** (Ottawa, May 2004, \$10,000)
- **The Canadian Network for Child and Youth Rehabilitation Centres (CN-CYRC) Inaugural Workshop: Closing the Gap - Establishing a National Mechanism for Bringing Research to Practice** (Montreal, July 2004, \$7,000)
- **Investigating the Potential of a School-based, Community-led Intervention to Promote Healthy Child Development in Vulnerable Families: Bringing Research, Policy and Practice into Alignment** (Ottawa, January 2005, \$7,000)
- **Canadian Pediatric Intensive Care Collaborative to Improve Patient Safety in the ICU** (Silver Star, BC, February 2005, \$8,000)
- **The Complexity of Providing Primary Maternity Care in the 21st Century: Interprofessional Collaboration and Research** (Vancouver, February 2005, \$8,500)

Effective Partnerships and Public Engagement

The development of new partnerships and collaborations has increased over the past year. IHDCYH fostered partnerships in research planning and funding with other CIHR Institutes, national organizations, and its "sister" Institute at the National Institutes of Health (NIH), the National Institute of Child Health and Human Development (NICHD).

Partnerships with other CIHR Institutes

In 2004-05, IHDCYH partnered with a number of CIHR Institutes to fund various research grants and salary awards. The initiatives include:

- **Rural and Northern Health Research Initiative (IAPH, IPPH, and the Institute of Health Services and Policy Research, IHSPR)**
- **Opportunities for New Researchers in Aboriginal Health (IAPH)**
- **Palliative and End-of-Life Care (ICR)**
- **Facing our Future (IG)**
- **New Perspectives on Gender and Health (IGH)**
- **Target Obesity (INMD)**
- **Childhood Obesity (INMD)**
- **Gene Therapy for Neurological Disease (INMHA)**
- **Canadian Tobacco Control Research Initiative (IAPH, ICR, IGH, INMHA, and the Institute of Circulatory and Respiratory Health, ICRH)**

Partnerships with National Organizations

Since its inception, IHDCYH has championed health and environment issues affecting children. In 2004-05, the Institute actively planned and developed with multiple partners (see list below) an RFA for a pregnancy/birth cohort study aimed to advance knowledge about the etiology of childhood asthma and allergy, particularly the roles of indoor environments, genes, and the interactions of genes with indoor and other environmental exposures (launch scheduled in June 05).

List of partners for the RFA on the etiology of asthma and allergy on early childhood:

- **AllerGen NCE**
- **National Research Council**
- **Asthma Society of Canada**
- **Canadian Mortgage and Housing Corporation**
- **CIHR - IAPH, ICRH, IGH, IG, and Institute of Infection and Immunity (III)**
- **Environment Canada**
- **Health Canada**
- **Healthy Indoors Partnership**
- **Natural Resources Canada**

International Collaborations

The Institute planned and led the development of two joint IHDCYH-NICHD Summer Institutes: one in Reproductive & Perinatal Epidemiology and a second in Maternal-Fetal Pharmacology (both to be held in July 2005). The Summer Institute in Reproductive & Perinatal Epidemiology is an intensive one-week course providing PhD students with both substantive and methodological training. The Summer Institute in Maternal-Fetal Pharmacology will train clinical and nonclinical scientists considering academic careers in therapeutics during pregnancy and lactation. The overall objective of both Summer Institutes is to foster the development of a critical mass of Canadian and American researchers in these strategic domains.

In collaboration with INMHA and the Institute of Aging (IA), IHDCYH actively participated in the JSPS CIHR Joint Health Research Program. The program, established in 2003, is jointly managed and funded by the Japan Society for the Promotion of Science (JSPS) and CIHR. Its aim is to promote Japanese-Canadian research collaboration between universities or affiliated research organizations in Japan and Canada through the support of small project grants. A second call for proposals was launched in the fall of 2004 and the results of the competition will be available in April 2005.

Under the leadership of the NIH (the National Institute of Mental Health and NICHD), IHDCYH, INMHA, and IG launched a joint RFA in December 2004 to solicit applications to identify specific genes and gene variants in localized chromosomal regions that confer susceptibility to autism. Results of this competition will be available in the fall of 2005.

Canadian National Cohort Initiative (CNCI)

In partnership with IG, IPPH, IA, and ICR, IHDCYH has been actively involved in discussing a Canadian National Cohort Initiative comprising one or more long-term cohort studies of child health, healthy aging, and cancer. An international advisory panel and key Canadian investigators from IHDCYH and the other participating Institutes will be held in Toronto in December 2005 to identify the most important, feasible, and affordable scientific niche that Canadian national cohort studies should attempt to fill.

Organizational Excellence

IHDCYH Office

Michael Kramer has been the Scientific Director of IHDCYH since May 2003. The IHDCYH official opening was held in November 2004, in conjunction with the funding announcement of \$6 million under our Healthy Developmental Trajectories RFA. The opening provided another opportunity for IHDCYH staff to meet with researchers and stakeholders in the Montreal area.

IHDCYH's staff

MONTREAL **Dr. Michael Kramer** (Scientific Director) **Dr. Anne-Cécile Desfaits** (Assistant Director) and **Ms. Stella DiPiano** (Administrative Assistant)

OTTAWA **Ms. Louise Poulin** (Assistant Director, Partnerships and International Relations) and **Ms. Gwendoline Simard** (Institute Support Project Officer)

Institute Advisory Board

The Institute Advisory Board (IAB) includes 16 members from the reproductive and child health research community, voluntary sector, health care system, and governmental agencies. Bruce Murphy has served as Chair since April 2004. The IAB supports and advises the Institute's Directorate on strategic priorities and orientations. During face-to-face meetings held in April (Halifax) and September (Toronto) 2004, Institute staff and IAB members met with local researchers and partners to reinforce links with the local reproductive and child health research communities and to garner feedback about the Institute's past activities and future plans.

In September 2004, the Institute Directorate and IAB members decided that a new strategic plan was necessary to map the Institute's course over the next five years. In early 2005, a working plan outlining future steps was developed, and IHDCYH's new strategic plan is expected for early 2006.

IHDCYH Advisory Board Membership

Dr. Bruce Murphy, Université de Montréal (Chair)

Dr. James Bonta, Public Safety and Emergency Preparedness Canada

Dr. Sandra Davidge, University of Alberta

Dr. William Fraser, Université de Montréal

Dr. Kathleen Glass, McGill University

Dr. Victor Han, University of Western Ontario

Dr. Lucie Jeannotte, Université Laval

Ms. Brenda Kirtzinger, Prairie North Health Region

Dr. Shoo Lee, University of British Columbia

Dr. Catherine McCourt, Public Health Agency of Canada

Dr. Patrick McGrath, Dalhousie University

Dr. Hugh O'Brodovich, University of Toronto

Dr. Jim Roberts, University of Pittsburgh, Pennsylvania

Dr. Peter Rosenbaum, McMaster University

Dr. Bonnie Stevens, University of Toronto

Ms. Dawn Walker, Health Canada

Institute Support Grant

FOR THE YEAR ENDED MARCH 31, 2005

AVAILABLE FUNDS	\$1,000,000	
Expenses		
Institute Development		
Conference, symposia and workshops	\$258,766	
Institute Advisory Board	42,336	
Professional services	11,805	
Travel Expenditures	10,509	\$323,417
Institute Operations		
Salaries and benefits	\$393,777	
Office accommodations	16,441	
Telephone and communication services	6,363	
Supplies, material and other services	6,550	
Office furniture and fixtures	19,007	
Computer equipment and IT support	19,059	
Professional services	6,915	
Travel expenditures	30,800	
Other expenditures	1,272	\$500,183
Total Expenses		\$823,599
UNSPENT BALANCE*		\$176,401

* Note: The balance as at March 31, 2005 is carried forward to the subsequent fiscal year

Investments in Strategic Initiatives

FOR THE YEAR ENDED MARCH 31, 2004

CONTRIBUTIONS THROUGH GRANTS AND AWARDS

STRATEGIC INITIATIVES	Number	2004-05	2005-06	2006-07	2007 and beyond	Total
Healthy Gametes & Great Embryos	3	1,698,290	1,698,290	1,698,290	1,273,719	6,368,589
Healthy Pregnancy	1	660,900	650,000	650,000	800,000	2,760,900
Healthy Developmental Trajectories	3	502,231	710,074	828,265	1,913,596	3,954,166
Operating Grants	10	780,548	-	-	-	780,548
New Emerging Teams	10	604,465	703,041	642,349	28,673	1,978,528
CIHR Training Program Grants	7	852,948	1,318,335	1,318,334	1,559,089	5,048,706
Rural Health	1	100,000	-	-	-	100,000
New Researchers - Aboriginal Health	1	17,175	-	-	-	17,175
New Perspectives - Gender and Health	3	96,499	-	-	-	96,499
Gene Therapy - Neuro Diseases	1	50,000	50,000	-	-	100,000
Palliative End of Life Care	1	140,000	200,000	200,000	460,000	1,000,000
Facing our Future - Human Genetics	2	25,980	-	-	-	25,980
Target Obesity	1	12,925	18,333	18,333	4,383	53,974
Childhood Obesity	1	-	99,670	99,255	100,000	298,925
Tobacco	2	279,322	-	-	-	279,322
Hospital for Sick Children Foundation	1	900,000	-	-	-	900,000
Canadian Language and Literacy Research Network	1	100,000	-	-	-	100,000
	49	\$6,821,283	\$5,447,743	\$5,454,826	\$6,139,460	\$23,863,312

Note: Grants and awards in respect to these programs are approved for 1 to 6 years. Figures displayed represent financial commitments for these programs in 2004-05 and subsequent years. Availability of these funds in future years are subject to funding appropriations by Parliament. For some initiatives, partners also contributed to the funding of the grants and awards.