

Canadian Institutes of Health Research–Institute of Aging: Profile

Ten Years of the CIHR Institute of Aging: Building on Strengths, Addressing Gaps, Shaping the Future*

Anne Martin-Matthews

CIHR Institute of Aging and the University of British Columbia

* The author acknowledges the assistance of Susan Crawford, Ph.D., Assistant Director, CIHR Institute of Aging, in the preparation of this manuscript, which is a revision of a presentation to the Canadian Association on Gerontology, at their Annual Scientific and Educational Meeting, Montréal, Québec, December 3, 2010.

Manuscript received: / manuscrit reçu : 25/03/11

Manuscript accepted: / manuscrit accepté : 25/03/11

Correspondence and requests for offprints should be sent to / La correspondance et les demandes de tirés-à-part doivent être adressées à:

Anne Martin-Matthews, Ph.D.
CIHR Institute of Aging and
Department of Sociology
The University of British Columbia
6303 NW Marine Drive
Vancouver, BC V6T 1Z1
(amm@exchange.ubc.ca)

It is now 10 years since the establishment of the Institute of Aging (IA), one of 13 national institutes of the Canadian Institutes of Health Research (CIHR), Canada's leading health research funding agency. With a mission to advance knowledge in aging to improve the quality of life and the health of older Canadians, the IA has transformed the landscape of Canadian research on aging over the past decade. This anniversary is an appropriate time to revisit the vision that led to the development of Canada's national Institute of Aging, and to consider not only what has been achieved, but also what challenges and opportunities remain in building and enabling research on aging in Canada.

Over a decade ago, the need for strategic leadership and for the establishment of a unifying centre for Canada's diverse research community in aging was well recognized. Historically a small community, researchers in aging worked largely in isolation within single disciplines, often disconnected from related work being done on their own campuses, and even moreso from that undertaken across the country. In

2000, a group of Canadian researchers in aging presented, to the Interim Governing Council overseeing the creation of CIHR,¹ a case for the development of a Canadian Institute on Aging (Chappell et al., 2000).

The Institute was proposed as a mechanism to support, facilitate, link, and focus research on health and health care relevant to the quality of life for Canadians as they age. Healthy aging for Canadians would be a research priority, and the illness experienced by many older Canadians would be addressed within the context of quality of life. In reviewing this document, it is clear that the CIHR Institute of Aging has indeed realized the vision set out for it more than a decade ago.

Building Strength

Over the course of 10 years, two strategic plans, *It's Time for Research on Aging* (2002–2007) and *The Future is Aging* (2007–2012), have guided the development of strategic initiatives and priority setting for the IA. The creation of two peer review committees at CIHR

dedicated to aging, the Biological and Clinical Aspects of Aging (BCA) and the Social Dimensions of Aging (SDA), have been catalytic in giving a focus to research on aging across its full spectrum from biomedical, to clinical, to health services and population health.

At the same time, the percentage of total CIHR expenditures directed towards research on aging has grown – from six per cent of a \$370 million CIHR budget in 2000–2001 to 14 per cent of the \$984 million budget in 2009–2010. This amounted to more than \$122 million of research on aging funded by CIHR in 2010. The number of investigators working in aging has grown, and increased strength is evident across the biomedical, clinical, health services, and population health research domains.

Over this period, as well, the Institute has identified and addressed three unique needs in research on aging: (a) a national longitudinal data platform, (b) greater research capacity, and (c) advancement of science in two key areas: cognitive impairment in aging, and mobility in aging. These two areas were identified as strategic funding priorities for the IA following extensive consultations with relevant research and stakeholder communities across the country.

The Canadian Longitudinal Study on Aging (CLSA), launched in 2009 and designed to span 20 years of research with 50,000 participants, holds tremendous potential for transforming research on aging in Canada (<http://www.clsa-elcv.ca/>). The development history of the CLSA, and the important findings from its foundational pilot studies, are documented and described in a special issue of the *Canadian Journal on Aging* published in 2009, with one article elaborating CIHR's role and the priority given to this initiative on the national research agenda (Martin-Matthews & Mealing, 2009). Although as yet in its early (and crucial) days of recruiting participants and establishing 11 state-of-the-art data collection centres across the country, the CLSA has already been recognized, according to the Canada Foundation for Innovation (2009), as

a significant research endeavour of a magnitude that ... has not been seen before in population aging, ... a wonderful resource for decades to come in terms of factors which influence health in seniors ..., [and] ... one of a kind even by international standards.

Since its establishment in 2001 of the Cognitive Impairment in Aging Partnership, the IA has collaborated with 23 national and provincial partners to support research on biological mechanisms and treatment of Alzheimer's disease, on vascular health and dementia, on care practice, and the creation of the Canadian Dementia Knowledge Translation Network. Despite these efforts, many challenges remain: the number of

Canadians with Alzheimer's disease or a related dementia (ARD) is projected to rise from 500,000 to 1,125,000 in 30 years, with the economic burden rising from \$15 billion to \$152 billion per year, as well as many social costs to individuals and to society. The development of CIHR's International Collaborative Research Strategy on Alzheimer Disease (ICRSAD) will further accelerate research into the causes of ARD, and into the optimum organization, financing, management, and coordination of care (CIHR, 2010a).

In these, and all its research endeavours (including 'Mobility in Aging', discussed next), the IA has also worked to enhance the profile of Canadian research on aging, be it in national research contexts, among stakeholders, or in policy environments. International partnerships, especially with China, Japan, and Europe (and particularly with the United Kingdom) have further contributed to the global profile of Canadian research on aging.

Addressing Research Gaps

The IA's 'Mobility in Aging' strategic initiative, developed in 2005, has redefined this field in Canada through the funding of research on all facets of mobility in aging and through innovative international collaboration on age-supportive built environments. The World Health Organization (1998) has noted that "mobility ... is the best guarantee of retaining independence and being able to cope" (p. 14). Limited mobility predicts mortality and is a risk factor for cognitive impairment, disability, and social isolation. There are considerable national strengths in research on mobility in aging, but the IA's funding support of nine theme-specific teams and seven demonstration projects has consolidated and enhanced that strength. Nevertheless, significant gaps remain in our knowledge of key issues, such as the design of age-supportive built environments that impact mobility in aging. Canadian researchers have been leaders in supportive indoor design elements, and are rapidly accumulating knowledge from significant European research on transportation, walkability, and other "outdoor" features of the built environment (KT-Equal, 2010). In addition, the collaborations that the IA has established with the Division of Aging and Seniors of the Public Health Agency of Canada concerning its Age-Friendly Communities initiatives are key and will require ongoing support in the future.

The building of research capacity has also been an important focus of activity for the IA and will continue to be a priority in coming decades. To that end, the IA's annual Summer Program in Aging (SPA), launched in 2006, has partnered with research centres across five regions of the country, and has mentored over

300 trainees in all areas of research on aging. Pilot and Catalyst Grants, and Age+ Prizes (with more than 75 prizes awarded for excellence in research publication by trainees) have also contributed to building capacity in research on aging. Evaluations of these initiatives have lauded their contributions to enhancing research and professional skills, positioning trainees for success in subsequent funding competitions. Nevertheless, it will be important in the years ahead to track the longer-term benefits of such initiatives to the overall enhancement of Canada's research on aging, and, for those trainees who ultimately do not pursue research careers in aging, to consider other benefits in terms of the research-policy interface.

The Institute of Aging has also demonstrated its commitment to citizen and stakeholder engagement, not only through its series of Regional Seniors Research Workshops but also by utilizing that input, in 2009, to identify 'Health Services and Systems for an Aging Population' as a next strategic priority area for the IA. This will likely be the most pressing issue in the coming decade. The renewal of Canada's Health Accord in 2014 will focus on federal-provincial division of health services financing and policies. Inevitably, discussion of the cost of health services for an aging population will take centre stage. The IA is working with CIHR's Institute of Health Services and Policy Research to generate knowledge to inform these deliberations, and to ensure that evidence-informed policy alternatives are available to all parties.

The IA has also been collaborating with the Canadian Health Services Research Foundation in national consultations and regional focus groups with stakeholders and key informants to clarify other key issues relevant to health services and systems for an aging population. However, in fact, we already have a strong base of evidence that better health and social care system-wide integration, treating "the person, not the disease" (nor single disease by single disease) and a return to a preventive home care paradigm (as contrasted with current post-acute care models of home care) will all lead to better health services and better health as people age. The perpetuation of the gap between "what we know and what we do" profoundly challenges our capacity to provide optimal care in the face of the complexities of health as people achieve advanced old age. The "aging" (and retirement, absent of replacement) of health and social service providers also will add to the challenges in the years ahead.

The Future *Is* Aging: Challenges and Opportunities

At the Gerontological Society of America's recent 65th anniversary event, a banner with the GSA logo and the

words "Getting Better with Age" was prominently placed. With its intriguing play on words, this statement challenges us in its assumption that the work we do, the research we undertake, the knowledge we impart, are, in fact, getting better with age. And, as this statement further implies, are we doing better "by age" in terms of the outcomes of our work in improving health and quality of life for aging and elderly people? Has our research gotten "better" in challenging societal misconceptions about aging? Has it prompted "better" (more positive) images of aging and elderly people (who are healthier today than they have ever been before in history) or have we done quite the opposite? Has our research gotten "better" in challenging the homogenization of the population aged 65 and older into a single category of "the elderly"? Has it succeeded in advancing understanding that aging is far more than the sum of chronic diseases or in recognizing that there are at least two generations over the age of 65? My observation is that we have, yet, a way to go.

Despite the longstanding awareness by the Canadian research community in aging of transitions and trajectories in unmet needs that distinguish earlier from later old age (Havens, 1980), there remains but one systematic study of the oldest-old population in Canada (the Fredericton 80+ Study), and still only a handful of studies worldwide that explicitly focus on the population aged 80 or 85 years of age and older. These studies illustrate the diversity of capability amongst the "oldest old". Recent data from the Newcastle 85+ study, for example, well document that increasing longevity does not necessarily equate with very high disability and levels of dependency (Collerton et al., 2007). And, looking even further into what is sometimes called "deep" old age, Nir Barzilai and colleagues (e.g., Barzilai & Gabriely, 2010 – see Benady [2011] for a "lay" account) are studying centenarians in the unique and homogeneous Ashkenazi Jewish population for genetic similarities that may explain their longevity. In the process, we are learning much about genetic and biomedical clues to longevity.

And yet, a recent perusal of articles published in the *CJA* over the past two years indicates comparatively little recognition of multiple generations over the age of 65, and too-infrequent differentiation of the experiences and circumstances of those in younger, and those in later, old age. Although there are notable exceptions (Tate, Loewen, Bayomi, & Payne, 2009), too often Canadian research on aging describes study participants as "ranging in age from 65 to 79, with an average age of 73" or "having a mean age of 69.7, SD 6.3", with infrequent within- or across-age comparisons. Canadian research rarely focuses on very old people at all. Of course, the CLSA, with its study of people aged

45–85 at time of intake into the study will, over its 20-year interval, significantly change the nature and volume of data on “aging throughout later life” and on our oldest populations.

Immigration has been an important factor in the shaping of Canadian society and will, in future, continue to “protect” Canada from the most significant societal impacts of an aging population, in contrast to the projected circumstances facing Japan, Italy, and the Nordic states (Jackson & Howe, 2008). Nonetheless, there remains much work to be done in our understanding of the experience of aging and old age for immigrants to Canada; of the differences between those “aging in place” and those who arrive later in life to find themselves “growing old in a foreign land”; and of the challenges of access to culturally appropriate and relevant services reflective of and knowledgeable about their health beliefs and behaviours.

Another change that I have observed in more than seven years as Scientific Director of CIHR’s Institute of Aging is the shift, as expressed succinctly by IA Advisory Board member Norma Drosdowech, “from advocacy to partnership”, in the engagement of older people by and with the research community. An example of such a partnership is the recent open-access publication of *Grey Matters* (Marlett & Emes, 2010), based on a project funded by an IA pilot grant. Through collaborative research by and with elderly people, the book examines the concept of resilience in old age and at the same time provides a guidebook to the research process itself. There is every indication that such innovative partnerships between researchers and their “subjects”, engaged as stakeholders and collaborators, will become more typical in the future.

Other challenges and opportunities lie ahead for research on aging in Canada. Anti-aging rhetoric abounds. Assumptions of an apocalyptic demography of aging baby boomers decimating and indeed destroying the Canadian health care system continue unabated, despite ample evidence (Barer, 2005) and enlightened public commentary (Picard, 2010) to the contrary.

The media play a role in perpetuating stereotypes of aging that are bankrupting the “system”. A cover story in *Maclean’s* (Gatehouse, 2010) screams: “What the boomers are leaving their children: Fewer jobs. Lower pay. Higher taxes. Now the Screwed Generation is starting to push back” (p. 54). In the context of events in the past year in France and elsewhere concerning revisions to retirement age provisions and policies, even more reasoned analysts acknowledge societal shifts from “compassionate ageism to intergenerational conflict” (Binstock, 2010), suggesting renewed likelihood of the intergenerational conflicts that

Marshall and Tindale (1978–1979) wrote about more than 30 years ago. In the suggested rise of intergenerational conflict, such scholars see the reduction of our understandings of intergenerational equity, and of the loss of the “social contract” inherent in “old age entitlements”, which benefit all generations. Nor can we expect these issues of population aging to go away any time soon, as per the metaphorical “pig passing through a python”. If, indeed, as Kirkwood (2010) has suggested, those of us in developed countries are gaining five hours of life expectancy every day, these challenges will remain with us for some time to come.

Shaping the Future: Emergent Science, New Approaches

Our understandings of aging are also being redefined with the emergence and strengthening of a new science of healthy aging. Increasingly, there are calls for “a new focus on research to promote healthy ageing, rather than simply treating the diseases of old age” (Abbott, 2004, p. 116). Instead of research dominated almost exclusively by attempts to understand and treat individual diseases, we “need to investigate the genetic and environmental (including health and lifestyle) factors that allow people to remain healthy and active into their eighties, nineties, and beyond” (Abbott, 2004, p. 116).

Recent U.K. Royal Society deliberations on “the new science of ageing” similarly considered the scientific challenges and prospects for a broad-spectrum, preventive medicine for age-related disease (see Partridge, Bates, & Thornton, 2011). Current CIHR cross-cutting strategic initiatives in epigenetics and in inflammation (taking more “horizontal” rather than “vertical” approaches to understanding common causes of age-related diseases) have the potential to contribute substantially to our understanding of aging and disease. The CLSA will be an important “enabler” of research on such processes.

The emergence of the field of geroscience represents another means to achieving such understanding, doing for the study of aging what the development of neurosciences 40 years ago did for our knowledge about the brain. This integrative approach recognizes that aging is the most important risk factor for human disease in developed countries. Similarly, it recognizes the difficulty in tackling age-related disease, as long as there continues to be a lack of understanding of principles and mechanisms of aging. The fundamental tenet of the approach of geroscience is that aging is complex, and our understanding of it is unlikely to yield to traditional investigative techniques. In 2007, the (U.S.) National Institutes of Health funded the Buck Institute (California) to focus on studying the interface of

normal aging and aging diseases in an interdisciplinary manner. The recent establishment of a Canada Research Chair in Geroscience at McMaster University presages the importance of this integrative research approach in this country, and is a welcome orientation.

The next decade will provide an exceptional opportunity for CIHR and the IA as attention is drawn increasingly to issues of population aging. Already there is evidence of “aging” as both a policy priority and a research priority for Canada. The 2010 Annual Report of the Chief Public Health Officer of Canada focuses on aging (Butler-Jones, 2010). The federal government’s Science, Technology and Innovation Council has identified “health in an aging population” as a research priority area in which Canada can leverage research strengths to achieve a competitive advantage.

With CIHR’s 10th anniversary, an International Review took place in February and March of 2011. The final report and recommendations from this Review will be presented to CIHR in June, at approximately the time when my two terms as Scientific Director of the Institute of Aging are completed. The next Scientific Director will be announced at that time. This crucial evaluation and guidance will greatly assist the next administration of the Institute and its Advisory Board in informing the development of the Institute’s priorities and next Strategic Plan.

In recognition of the 10th anniversary of the creation of the Canadian Institutes of Health Research, each Institute Scientific Director was asked to provide a statement of vision for their Institute and their field of research for 2020. For the Institute of Aging, I wrote:

In Canada, and worldwide, the future is aging! The integrated focus of geroscience is rapidly advancing our understanding of the biological processes of aging. The Canadian Longitudinal Study on Aging will enhance knowledge of how biomedical factors (including genetics and epigenetics), along with clinical and behavioural factors, intersect with social, cultural and economic contexts to impact aging and advanced age. Optimizing health and health services for very elderly people will become national priorities. (CIHR, 2010b, p. 27)

Time will establish the accuracy of these projections. In the interim, I invite the Canada’s research community in aging to consider this vision, and to continue to work collaboratively in informing and engaging with the IA, with CIHR, and with our partners in the development of strategic priorities. Together we will build on the well-demonstrated strengths in our field nationally and internationally, address existing and emergent gaps in knowledge in crucial areas, and shape the future of our field through innovative science, effective

researcher-stakeholder partnerships, and active engagement in the application of knowledge to improve the health and quality of life of our aging and elderly citizens.

Notes

- 1 CIHR was created in 2000 from an amalgamation of the former Medical Research Council and the National Health Research and Development Program of Health Canada.

References

- Abbott, A. (2004). Ageing: Growing old gracefully. *Nature*, 428, 116–119.
- Barer, M.L. (2005). Evidence, interests and knowledge translation: Reflections of an unrepentant zombie chaser. *Healthcare Quarterly*, 8(1), 46–53.
- Barzilai, N., & Gabriely, I. (2010). Genetic studies reveal the role of the endocrine and metabolic systems in aging. *Journal of Clinical Endocrinology and Metabolism*, 95(10), 4493–4500.
- Benady, S. (2011). Living like a centenarian: New drugs may one day help those of us who aren’t genetically blessed to remain healthier into our old age. *Macleans Magazine*, 42–43.
- Binstock, R.H. (2010). From compassionate ageism to inter-generational conflict? *The Gerontologist*, 50(5), 574–585.
- Butler-Jones, D. (2010). *The Chief Public Health Officer’s Report on the State of Public Health in Canada, 2010: Growing Older – Adding Life to Years*. Ottawa, Ontario, Canada: PHAC. Retrieved March 21, 2010, from <http://publichealth.gc.ca/CPHOREport>.
- Canada Foundation For Innovation (January 2009). *Expert Committee Report, New Initiatives Fund 2009. The Canadian Longitudinal Study on Aging: Understanding the complexity of aging health through interdisciplinary research*, Project number: 19909.
- Canadian Institutes of Health Research (CIHR) (2010a). *Turning the Tide - A Canadian Strategy for International Leadership in the Prevention and Early Treatment of Alzheimer’s Disease and Related Dementias*. Ottawa, Ontario, Canada: CIHR. Retrieved March 18, 2010, from http://www.cihr-irsc.gc.ca/e/documents/icrsad_report_full_2010-03-25_e.pdf.
- Canadian Institutes of Health Research (CIHR) (2010b). *To Your Health: Celebrating 10 Years of Research Success*. Ottawa, Ontario, Canada: CIHR.
- Chappell, N., Joannette, Y., McDonald, L., Neysmith, S., Rockwood, K., Stones, M., et al. (2000). *Canadian Institutes of Health Research: The Canadian Institute on Aging/ Institut Canadian de Vieillessement. Concept of Operations*. Canadian Health Services Research Foundation and Social Sciences and Humanities Research Council of

- Canada. Retrieved March 18, 2010, from http://www.chsrf.ca/final_research/commissioned_research/programs/pdf/hidg/chappell.pdf.
- Collerton, J., Barrass, K., Bond, J., Eccles, M., Jagger, C., James, O., et al. (2007). The Newcastle 85+ study: Biological, clinical and psychosocial factors associated with healthy ageing: Study protocol. *BMC Geriatrics*, 7, 14.
- Gatehouse, J. (2010). What the boomers are leaving their children: Fewer jobs. Lower pay. Higher taxes. Now the Screwed Generation is starting to push back. *Macleans*, 123(47), 54.
- Havens, B. (1980). Differentiation of unmet needs using analysis by age/sex cohorts. In V.W. Marshall (Ed.), *Aging in Canada: Social Perspectives* (pp. 215–221). Toronto, Ontario, Canada: Fitzhenry and Whiteside.
- Jackson, R., & Howe, N. (2008). *The Graying of the Great Powers: Demography and Geopolitics in the 21st Century*. Washington, DC: Center for Strategic & International Studies.
- Kirkwood, T. (2010). Why can't we live forever. *Scientific American*, 303(3), 42–49.
- KT-Equal (2010). *The Science of Age-supportive Built Environments: Canadian Institute of Aging Study Tour to the UK*. Retrieved March 21, 2010, from http://www.sparc.ac.uk/media/downloads/executivesummaries/age_supportive_environments_monograph.pdf
- Marlett, N., & Emes, C. (2010). *Grey Matters: A Guide for Collaborative Research with Seniors*. Calgary, Alberta, Canada: University of Calgary Press.
- Marshall, V.W., & Tindale, J.A. (1978–1979). Notes for a Radical Gerontology. *International Journal of Aging and Human Development*, 9(2), 163–175.
- Martin-Matthews, A., & Mealing, L. (2009). Editorial: Realizing the vision. The Canadian Longitudinal Study on Aging as a Strategic Initiative of the Canadian Institutes of Health Research. *Canadian Journal on Aging*, 28(3), 209–214.
- Partridge, L., Bates, G., & Thornton, J. (2011). New science of ageing. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, 366(1561).
- Picard, A. (2010). Stop blaming seniors for soaring health costs. *The Globe and Mail*, (November 11), L6.
- Tate, R.B., Loewen, B.L., Bayomi, D.J., & Payne, B.J. (2009). The consistency of definitions of successful aging provided by older men: The Manitoba Follow-up Study. *Canadian Journal on Aging*, 28(4), 315–322.
- The Fredericton 80+ Study. Retrieved March 22, 2010, from <http://www.stu.ca/research/80plus/description.htm>.
- World Health Organization (1998). *Growing Older – Staying Well: Ageing and Physical Activity in Everyday Life*. Geneva, Switzerland: Ageing and Health Programme, World Health Organization.