Canadian Institutes of Health Research:
The Canadian Institute on Aging/ Institut Canadian de Vieillissement

*Concept of Operations*

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Canadian Institutes of Health Research:  
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**Key Points**

- The CIA/ICV will support excellence in both investigator-initiated and targeted research.
- The CIA/ICV will proactively support, facilitate, link and focus research on health and health care relevant to the quality-of-life for Canadians as they age.
- The CIA/ICV will advance knowledge to promote healthy aging of Canadians and to provide effective and efficient care for those in need.
- The CIA/ICV will play a proactive role in facilitating the formulation of research directions, bringing together teams of researchers across disciplines and geographical regions, fostering communication within and between stakeholders and researchers, building partnerships across sectors, and ensuring that research knowledge is used to advance the quality-of-life of Canadians.
- The CIA/ICV will be organized with two foci: health and health care/illness, because it is critically important that as we enter the new millennium with ever increasing proportions of the population reaching old age, that healthy aging for Canadians be a priority, and that the illness experienced by many older Canadians be addressed in the context of quality-of-life.
- The CIA/ICV will engage in capacity-building activities for new and established researchers since aging research has never been provided with the levels of funding required to develop adequate human resources.
- The CIA/ICV will involve stakeholders in key decision-making activities within the Institute.
- The CIA/ICV will maintain databases of research and researchers in aging in Canada to allow the Institute to respond to high priority requests for information in a timely fashion as well as allow the Institute to draw together experts across regions and disciplines for the development of specific targeted activities.
- In all operations, the CIA/ICV will play an integrative role: fostering input and active involvement from all relevant parties (researchers and stakeholders), encouraging research from all disciplinary perspectives (basic biomedical; applied clinical; society, culture and population health; and health related services and systems), as well as nurturing research that combines several perspectives.
- The CIA/ICV will be the mechanism to bring coherence, nationally, ensuring both the advance and the use of knowledge relevant to the quality of life of Canadians as they age.

**Executive Summary**

The CIA/ICV is 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. The mission of the Institute is the advancement of knowledge to promote healthy aging of Canadians and to provide effective and efficient care for those in need. The Institute will pursue this mission by playing a proactive role in facilitating the formulation of research directions, bringing together teams of researchers across disciplines and geographical regions, fostering communication within and between stakeholders and researchers, and ensuring that research knowledge is used to advance the quality-of-life of Canadians. It will bring coherence to a currently dispersed effort among researchers and stakeholders, among governments, and among communities. It will support and crystallize existing efforts to build a stronger and more relevant research enterprise.

The Institute will support excellence in traditional research and capacity-building programs. All program activities will be organized with a dual focus: health and health care/illness. This dual focus has not typically been promoted by health research agencies but is particularly relevant to the area of aging. Healthy aging is an achievable and worthwhile goal that cannot be defined only as the absence of disease. It is critically important, as we enter the new millennium with ever increasing proportions of the population reaching old age, that healthy aging for Canadians be a priority. However, the prevalence of illness, and often multiple illnesses, in older adults cannot be ignored and must be addressed within the context of enhancing quality-of-life for those with illness and in need of care. The CIA/ICV organizational structure allows for research on the process of aging (e.g., biological mechanisms of aging; the meaning of aging), as well as research relating to specific disorders or care practices (e.g., arthritis; home care).

The Institute will support both investigator-initiated and targeted research, with substantial proportions allocated to the latter. Traditional individual investigator-initiated projects and integrated projects brought forward by investigators from a number of disciplines to address a single topic will be facilitated. At least in the transitional phase, these submissions would undergo peer review outside the Institute through the overall CIHR review committees. Targeted research will address identified areas of priority. The Institute would play a proactive role in bringing together people from various backgrounds to identify priority areas and would bring together experts from various disciplines to address the questions at hand. The Institute would also coordinate a national longitudinal dataset emerging from such consultations. The peer review for these projects is likely to be international and organized by the Institute.

The capacity-building activities of the Institute are essential and fundamental since, despite an awareness of the relevance of aging research in the 1970s, aging research has never been viewed as a substantive area
with associated levels of funding or growth in human resources. As a result, there is a need to build capacity across all disciplines with emphasis in a variety of areas from basic sciences (e.g., cellular aging) through to the social sciences (e.g., humanities) and policy. Support will be provided through the traditional mechanisms of student and new investigator competitions. In addition, salary support, endowed chairs, and opportunities for upgrading of skills or re-training will be available for established investigators.

Databases of research and researchers in aging in Canada will be maintained to allow the Institute to respond to high priority requests for information in a timely fashion, and to allow the Institute to draw together experts across regions and disciplines for the development of specific targeted activities. A liaison function of the Institute would maintain close ongoing relations with relevant federal and provincial government agencies, stakeholders, researchers and members of the public and ensure the dissemination of research findings to and through these avenues.

Stakeholders (e.g., government policy makers, spokespersons from community-based not-for-profit agencies working with seniors, formal and informal providers of care to seniors, and Canadian seniors) will be involved in key decision-making bodies within the Institute. Stakeholders will constitute one third of the Institute Advisory Board. Scientists from each of the four cross-cutting CIHR themes (i.e., basic biomedical, applied clinical, health service/system, social and cultural aspects of population health) make up the remainder of the Board. Stakeholders will also be involved in forums that identify gaps in knowledge. These identified areas will be targeted for research activity.

The Institute will have a Scientific Director who, in the transitional phase, will probably be housed in Ottawa with a core secretariat. The Scientific Director will be critical in creating an intellectual home for scientists and stakeholders alike, establishing ongoing liaisons with government offices and stakeholder organizations, and building and negotiating partnerships. It is essential that the CIA/ICV build on and support the large but still disparate groups of aging-relevant researchers and other communities that currently exist in Canada. The secretariat will be involved in three key aspects of the Institute’s operation: supplying public information, database development (e.g., up-to-date information on research activities in Canada, liaison with other data sources, compilation of longitudinal databases), and program development and management. The secretariat would form the “institutional memory” essential to the level of responsiveness and integration envisaged for the Institute and would remain in Ottawa after the transitional phase. Once the Institute is established, the Director could be housed, with a small support staff, in a host
In all operations, the Institute will play an integrative role: fostering input and active involvement from all parties concerned, encouraging research from all disciplinary perspectives, and nurturing research that combines several perspectives. It is an absolute necessity that aging be studied in the integrative context supported by the CIHR. Aging, long ignored as a substantive area, cuts across most other areas of health research and by its nature is an exemplar of the CIHR philosophy. The focus of the Institute on the enhancement of health and ways to mitigate the ravages of illness is essential to ensuring quality-of-life for all Canadians as they age.
1. The Context

1.1 The importance of Aging for the new millennium

Societies around the world are aging; the number and percentage of older adults is growing at an unprecedented rate. This is true for both developed and developing countries. Decreasing fertility rates and increasing longevity over the past century, primarily due to improvements in public health, have contributed to this dramatic shift in the age profile of societies. In 1991, approximately 3,200,000 Canadians were 65 years of age or older, representing 12% of the Canadian population. Between 1986 and 1991, the number of persons 65 years and older grew by 17.5% and the number of persons 75 years of age and older grew by 21.7%. It is anticipated that there will be continued growth with the number of persons aged 60 years and older reaching a full 25% of the population by 2020 (United Nations, 1997), when the baby boom generation reaches old age. While the aging of the baby boom generation brings immediacy to an aging population, the health issues relevant for old age and for those who die at any age are always pertinent, irrespective of the proportion of elderly in a population.

While some people in the past have lived as long as people do today, never before have virtually all members of a society expected to live to old age. Society has achieved longevity for its citizens; however, quality of life has not automatically followed. Approximately 80 percent of older adults have at least one chronic health condition (NACA, 1993). Multiple conditions are common and increase with age. The average person over 85 has three major chronic health problems (NACA, 1993b). Until very recently, the added years of life were primarily years of illness and disability. The most recent figures show that some of those years are now illness and disability free: approximately half of the additional years of life for both women and men aged 75-84 years are free of severe or moderate disability (Statistics Canada, 1999). The prevalence of dementia increases with age; 34% of those aged 85+ suffer from this disease (Canadian Study of Health & Aging, 1994).

Quality of life, however, is not simply the absence of disease; it refers to wellness from a holistic perspective, including social, psychological, environmental, and spiritual factors as well as the physiological. The World Health Organization advocates a broad definition of health in which quality-of-life is central: “Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.” Ageism, characteristic of most Western societies, contributes unnecessarily to a lower quality of life as we age. In other words, there is much more to aging than the number of years we live.
In many instances issues associated with aging have been ignored, not only by society in general, but also by the research community. Ageism comes in many guises. Because of deteriorating health as we age, there is a necessary focus on decline and dependency associated with aging, and its social and economic costs. However, there has been much less focus on the positive aspects of aging. Others view older persons as middle aged adults in older bodies, denying that issues related to late life exist. Yet human development continues throughout the life course, including late life. Development taking place after the first two decades of life and into late life is just as important to understand as development in the early years. No stage of life is supreme in its regulation of development. The emerging view, and one held by the Institute, is that human development is inter- and multidimensional (e.g., physical, cognitive, social), multidirectional (growth occurs at different rates and times and goes in different directions across the life course - gains and losses, constancy and change), and multicausal (influenced by multiple factors).

This life course approach is consistent with the new paradigm of aging, to be released by the United Nations at the end of the year 1999 - the International Year of Older Persons. Unlike the International (Vienna) Plan of Action on Aging (1982), that was preoccupied with humanitarian efforts to ensure the problems faced in old age were minimized, current thinking argues for a proactive approach to avoid or minimize problems of aging before they arise (United Nations, 1999). Similarly, World Health Organization initiatives (1998) address the need to develop preventative strategies as part of promoting health. Social factors may serve as barriers or facilitators to the effective implementation of these factors. Population aging should be reconciled with other major trends, including technological advances, globalization, and socioeconomic development; rather than isolating and segregating older people. Current UN thinking calls for a new paradigm on aging, one that argues for the involvement, participation and integration of elders within society. This approach necessarily includes a focus on social policy and a recognition of the importance of social location, culture and gender. However, the situation of older persons first espoused in the Vienna Plan of Action (health and nutrition, housing and the environment, the family, social welfare, income security, and employment) is not abandoned. A second facet is added, referred to as lifelong individual development, that includes an enabling environment to foster lifelong education, skills upgrading, and healthy lifestyles.

The process of individual development can be modified, thereby influencing future outcomes. In the case of health-related outcomes, early or mid-life behaviors may strongly influence or be risk factors for future disease and disability. Historical, cultural, and social forces contribute both to similarities and variability
between people in both the level and course of individual development (Baltes, 1987). For example, cross-sectional studies have shown dramatic, steep rates of cognitive decline associated with aging. However, longitudinal and sequential studies indicate that most cognitive abilities remain stable (or actually increase) until age 60 years after which only slight decline may be observed. These insights have profound implications for how older adults are perceived, as well as how cognitive impairment is both treated by health professionals and conceptualized within the context of addressing the health-related quality of life of Canadians of all ages. The necessity of examining health outcomes within the context of a life course developmental perspective cannot be overemphasized.

Gerontology, the study of aging, encompasses two general research questions. One refers to the diagnosis, treatment and cure of illness and disability; one refers to healthy aging. Because the likelihood of developing chronic health conditions increases sharply with age, illness and health care (both formal and informal) are necessarily a major focus. The medical profession is frequently asked for assistance. Deterioration in physical health is highly correlated with aging, as is use of medical and support services, but much of the care provided to elders is either episodic for acute illness or custodial for chronic conditions. The challenge is to find ways to facilitate adjustment, compensation and rehabilitation of the individual and, in so doing, maximize personal autonomy. This will require concerted and integrated efforts, from the biomedical and clinical sciences perspectives, as well as the social and cultural sciences. For example, it is known that people’s culturally and socially determined beliefs about health and health care services can influence their health seeking behavior as well as the outcomes of interventions.

Research on treatments and outcomes that does not acknowledge this perspective may be limited in terms of its predictive value or utility. The challenges in providing continuity of care in the long term across various health and social sectors (e.g., institutional, acute care, home care, mental health) are also opportunities for integrative research. Understanding the hidden care system of informal caregivers (who provide between 75-85 percent of all personal care in industrialized countries; Kane and Kane, 1985) and its interrelations with the formal care system must necessarily be captured within the context of a spectrum of care alternatives.

In gerontology there is also an effort from biological and behavioural perspectives to separate normal aging from pathological or diseased aging. Increasingly, the need to isolate and understand the determinants of healthy aging has been articulated as an important goal. Psychosocial studies of aging include psychological studies, as well as the more macro-behaviourally oriented social sciences. Both sociology
and economics have contributed much to this area. A major focus in cultural studies of aging has been on ageist attitudes within societies. Virtually all disciplines have important contributions to make to the study of aging, including history (learning the role of elders in past societies), philosophy (including both ethical issues and philosophies on aging and old age), the languages (language is a major barrier for seniors needing to connect with health and social services) and geography (aging in remote and rural areas poses different challenges than aging in urban areas).

Research on aging, like that in most areas, proceeds primarily through disciplinary research due both to the disciplinary structure of universities and the tendency of funding agencies to support this structure. Basic scientists tend to work in isolation from clinicians, who in turn work in isolation from social scientists. Notwithstanding organizations such as the Canadian Association on Gerontology that provide a venue for interdisciplinary dialogue and the Quebec/FRSQ model of inter/multidisciplinary research centres, most research in this area is neither inter/multidisciplinary nor multi-institutional. Yet gerontology is a multidisciplinary substantive area that requires the integration of theoretical perspectives for understanding and advancement. The disciplinary perspectives require strengthening in order to build effective inter/multidisciplinary research and training programs. The component parts of multidisciplinarity include the biological, social, political, cultural, and psychological study of aging as well as an examination of the appropriateness of health services delivery mechanisms across the life course.

The multidisciplinary approach necessary for studying aging is obvious in some of the questions addressed: understanding health inequalities as we age, especially those associated with socioeconomic status, race, and gender; establishing legislation to assist those who are mentally incompetent; studying cognitive and personality bases for economic and other decisions across the life course; identifying the social and physiological determinants and consequences of caregiving; providing and monitoring continuity and quality of care in a population that requires care over the long term, to name but a few. It could not be more timely to create a national, integrative institute on health and aging. Moreover, all of this must be done by building bridges between approaches that have not traditionally collaborated directly (such as basic animal research in nutrition and strategies of meal distribution among the institutionalized elderly, or basic research in cognitive neurosciences on wayfinding abilities and the planning of housing for elders).

It is within this context that we propose a Canadian Institute on Aging and submit that its mandate include research that has a clear and direct relevance to later life. There is much we need to understand about
health and aging, including an objective understanding of what happens (both positive and negative) to people as they grow old, why one person’s health declines with age and another’s does not, which negative changes can be reversed or modified, and how to promote healthy aging. We need to know what can be done now to improve the health and quality of life of our present and future seniors in Canada. Such research is relevant not only to health research communities, but to middle-aged Canadians who are struggling to provide care to aging relatives within the context of rapidly changing family forms and who themselves will soon be among the elders of society; first and second generations of immigrant groups confronting changing expectations around the what and how of health care; individual aging men and women trying to realize a life course in which the later years are as developmentally critical as earlier stages in the life cycle; the recently retired executive searching for meaning in his or her life; and the elementary school teacher coping with a child experiencing grief at the loss of a grandparent.

1.2 Current Infrastructure in Canada for Research on Aging
Despite the relatively short span of time aging research has been pursued in Canada, many Canadian researchers on aging hold international acclaim, particularly within the social sciences (see Appendix A for examples of Canadian research on aging). Canada is well-poised to make this contribution, given its world leadership in support of health promotion dating back to Lalonde's 1974 report and its research activity on the social determinants of population health. The gerontological/aging research and health care communities emerged during the 1970s. It was during this decade that the inter-/multidisciplinary and multisectoral Canadian Association on Gerontology was organized and several university research centres/institutes were formed. Geriatric medicine and geriatric nursing developed to their present status where specialized training is available within Canada, and each have their own national organizations. The federal government began allocating targeted funds for research, recognizing that the disciplinary and disease focus of the funding councils did not provide fertile ground for the cross-cutting integrative nature of aging research.

The gerontological research community in Canada has established a cadre of internationally recognized researchers. This includes research on ageism, caregiving, cognition, quality of life, geriatric care, therapeutic modalities, service delivery options, and social policy (see Appendix A for an overview of current Canadian research on aging). Notable longitudinal research includes the Aging in Manitoba Study and the Ontario Longitudinal Study. The gerontological community has demonstrated its ability to work together in multidisciplinary efforts. For example, the NCE-funded CARNET focused on aging and
employment issues. The Canadian Study on Health and Aging brought together over 50 researchers to investigate dementia relevant issues, including caregiving, neuropsychological testing, and biological markers of disease progression. There are, in addition, numerous research centers and groups across the country, based primarily at universities and teaching hospitals.

Despite these areas of strength and examples of success, there has never been a national focal point to synthesize the research efforts and act as a catalyst for this area of research. In addition, many areas have received little attention and support to date. Most notably these include basic biological research on the aging process, the experience and control of pain, and the complex array of issues involved in end-of-life decision-making and care. Some of the expertise we once had has moved south of the border. For example, the Canadian who first uncovered the important role played by telomeres and associated enzymes in replicative senescence and aging that lead to telomerase-based therapeutics in modifying cancer biology as well as various aspects of aging is now pursuing these ideas in the United States. The Canadian who is mounting a longitudinal study of Jesuits to provide a male sample comparable to the Nun study (that has identified predictors at puberty of later life cognitive decline) is doing so from his new home in the United States. It is worrisome that some of the expertise we do have is relocating to other countries where research opportunities are more plentiful. It is also worrisome that we lack a foundation of knowledge in such areas that are highly relevant to quality-of-life throughout the life course and particularly in late life. The Institute will identify such emerging areas of research and foster their growth and development through individual and integrative investigator-initiated research, as well as targeted research and capacity-building efforts (see below for an elaboration on programming and capacity-building).

1.3 The Process Used in Designing the Canadian Institute on Aging

The design of the CIA is based on the ideas of numerous members of the Canadian gerontological community. The process began with a search of existing models of research institutes. Shortly thereafter, a national call for information on research and teaching in aging and for input on an institute was sent to all research centres on aging across the country, provincial and federal government offices for seniors, and the 1000 members of the Canadian Association on Gerontology. Using this information, team members met for two days in Victoria to discuss potential strategies to support research on aging, to decide whether to recommend the foundation of an institute, and to plan the elements of Institute design, should this strategy be chosen. A draft summary of the ideas which resulted from the meeting was distributed to the initial contact group. A list of stakeholders was compiled consisting of: provincial gerontological associations; government offices for seniors and seniors’ issues; relevant non-profit organizations such as the Heart &
Stroke Foundation, the Alzheimer Society of Canada and the Canadian National Institute for the Blind; and national organizations and associations representing both practitioners and seniors themselves. Telephone interviews were conducted with numerous stakeholder representatives who were asked to contribute ideas, specifically regarding the most effective roles that their organizations might play in an institute (see Appendix B for a list of contacted stakeholder groups). A second draft of ideas was circulated to all previously contacted individuals and organizations, prior to finalizing this paper.

2. **The Institute**

**MISSION:** The advancement of knowledge to promote healthy aging of Canadians and to provide effective and efficient care for those in need.

2.1 Rationale for the Institute’s design and relation to the CIHR Mandate

The Institute was designed as a mechanism to support, facilitate, link, and provide a focus for research on health and health care relevant to the quality-of-life for Canadians as they age in a way that will ensure both excellence and relevance. Unlike many other areas of health research that have fit within the context of existing research organizations, a mechanism that specifically addresses research on aging has never existed in this country. Research organizations tend to develop committees for peer review and planning by disciplines or diseases; research on aging, in contrast, tends to be inter- and multidisciplinary because seniors tend to exhibit multiple illnesses and healthy aging is multidimensional. For these reasons, and due to the need to employ longitudinal research designs (considered too expensive by those without a life course perspective), review committees have been ill-equipped to provide support for aging research. In response to similar situations elsewhere, many other countries (e.g., Australia, USA, China, Germany, the United Kingdom) have established research institutes on aging as a means for ensuring much-needed research in the area. A Canadian Institute on Aging will ensure this research is addressed from a Canadian perspective for the benefit of Canadians.

As noted above, aging is an area that inherently cuts across most other areas of health research. We have chosen to propose an Institute on Aging research rather than argue for incorporating an aging component in all other Institutes for the following reasons:

- there is a critical mass of researchers in the field and across disciplines, as demonstrated by the diverse memberships of the Canadian Association on Gerontology, the Canadian Gerontological Nursing Association and the Canadian Society of Geriatric Medicine, and
by the success of inter- and multidisciplinary research efforts to date;

- excellence in research on aging has been achieved by Canadians and supported through Senior’s Independence Research Program initiatives (within the themes of economic security, improving health care, medication use and self-care, self-help & mutual aid), the Canadian Aging Research Network of NCE, the National Health Research Development Program (e.g., the Canadian Study of Health and Aging), as well as provincial and community-based sources of research funding;

- there are special considerations when doing research on aging that are not necessarily appreciated by general review committees (such as the relative contributions of cohort, aging, and history (time-of-testing) effects; coexistence of multiple morbidities; and quasi-experimental research strategies);

- there are issues associated with healthy aging and prevention of disabling conditions that require a life course perspective that is not adopted by other fields;

- in order to advance the area, a focus on maintenance of health is essential rather than a largely exclusive focus on illness;

- it is absolutely necessary that aging be studied in the integrative context of the four cross-cutting themes supported by the CIHR, thereby making aging exemplary of the CIHR philosophy;

- because numerous other countries, including Australia, China, Germany, the United States and in the United Kingdom, have analogous institutions, the proposed Institute will allow Canada to interact more effectively at an international level (see section 2.7);

- integrating aging research in other institutes without a separate institute would ensure the continuation of the lack of attention to aging that has been characteristic of research in Canada to date. It would also prevent the life course and longitudinal focus so necessary for advancing knowledge in this area;

It is, however, also recommended that the Institute on Aging interact regularly with other Institutes of the CIHR in order to promote a heightened awareness of the relevance of other research to the area of aging, as well as the reverse. If there were to be an institute of health services, of cancer, or of chronic conditions, for example, the Institute on Aging would necessarily share concerns and interact with them (Figure 1, in section 2.2, outlines the proposed organizational structure of the Institute).
The Canadian Institute on Aging was designed in accordance with the CIHR Mandate. The Institute will:

- **Promote healthy aging of Canadians and the provision of effective and efficient care for those in need through the creation of new knowledge and its translation.**
  
  This will be accomplished by creating an intellectual home for both researchers and stakeholders. Research programs (investigator-initiated and targeted), capacity-building programs, and liaison and dissemination efforts will be provided through the Public Liaison Office, including dissemination grants. Program activities will promote new knowledge and the dissemination of that knowledge on both healthy aging and care for those whose health declines. This dual focus has not typically been promoted by health research agencies, but is particularly relevant to the area of aging. Healthy aging is an achievable and worthwhile goal that cannot be defined solely as the absence of disease. It is critically important, as we enter the new millennium with ever increasing proportions of the population reaching old age, that healthy aging for Canadians be a priority. The proposed dual emphasis ensures an emphasis on healthy aging and distinguishing conditions under which healthy aging is maximized. However, the prevalence of illness, and often multiple illnesses, in older adults cannot be ignored and must be addressed within the context of enhancing quality-of-life for those with illness and in need of care. The process of aging includes, for example, biological markers of aging and the meaning of aging. Research relating to specific disorders or care practices includes, for example, arthritis and home care. The Institute will support existing strengths in research focused on both health and health care/illness, including existing expertise in cognition, caregiving, geriatric services and quality-of-life. It will also build capacity in needed areas of research, such as end-of-life issues, pain, and successful aging (see Section 2.3.2 on capacity-building).

- **Facilitate integrative, interdisciplinary research.**
  
  Both the targeted and the investigator-initiated programs will encourage integrative, interdisciplinary research activities through special competitions and through specific application criteria. Integration refers to the four cross-cutting themes of CIHR (basic biomedical, applied clinical, health services and systems, and social and cultural determinants of population health). The Institute will allocate 50-70% of available funding resources to investigator-initiated and 30-50% to targeted research in the transitional phase. Although consensus on the appropriate distribution has not been reached within the gerontological research community, a significant proportion of funding will be allocated to targeted research. Investigator-initiated research will be
encouraged through two channels: traditional individual investigator-initiated projects, and integrated projects brought forward by investigators from a number of disciplines to address a single topic. Targeted research will address identified areas of priority. The Institute will play a proactive role in bringing together experts from various disciplines to address the questions at hand. Moreover, the Institute will proactively bring together stakeholders and researchers (think tanks), working with other Institutes when identifying gaps in knowledge, when designing and implementing targeted projects, and when disseminating information. Not only will the research programs facilitate integrative, interdisciplinary research, this approach will also be emphasized in the Institute’s capacity-building initiatives, for both new and established researchers in aging.

- **Foster collaboration with stakeholders in the voluntary, community and private sectors, and others with complimentary research interests.**

The above stakeholders will be actively involved in the Institute Advisory Board, think tanks that determine targeted research areas, and dissemination activities. Serving on the advisory body, executive committee and standing committees, they will work with the Scientific Director in writing the Institute’s strategic plan, setting research priorities, guiding the development of the administrative operations of the Institute through the transitional phase, and maintaining the impetus generated during this phase into the long-term operation of the Institute. The Advisory Board will include stakeholders from the following sectors: health care professionals, government agencies, non-profit organizations related to aging, and seniors. Approximately 1/3 of the Board (4-6 people) will represent stakeholders. Four standing subcommittees will be struck for each of the stakeholder groups and these subcommittees will provide input to the Board through their respective representatives. Think tanks, struck to assist in identifying high priority research areas, to assist in putting teams together for conducting targeted research, and to formulate dissemination initiatives, will include stakeholders, with support from the public liaison and database offices of the secretariat. Areas identified and issues associated with them will be brought to the advisory board (through the executive committee if time is limited) for consideration. Stakeholders are involved in these capacities to ensure that their voices, classically absent from determining research agendas, are not only present but heard and that they become reflected in the work of the
Institute. By having the stakeholders involved in key decision-making capacities, the Institute design is addressing the concern that stakeholders often become de facto tokens on committees where specific research expertise assumes a more powerful presence. Stakeholders will have the opportunity to form partnerships with the Institute and with researchers funded through the Institute. Such collaborations can revolve around funding, conducting research, and/or disseminating and using results.

- **Anticipate emerging challenges and respond promptly to health threats with strategies for prevention, care and cure.**

The Institute will maintain ongoing close liaisons with relevant departments of federal (e.g., Division of Aging and Seniors, National Advisory Council on Aging, Department of Veterans Affairs) and provincial (e.g., Ministries and offices responsible for seniors and seniors’ affairs) governments. The secretariat of the Institute will have built-in capacity to respond quickly to requests for information. This capacity will be enhanced by a computerized database of all aging-related research being conducted in Canada and the researchers in the field. This will permit the secretariat to access information in a prompt manner and draw together people capable of developing strategies for action. The Institute’s think tanks, involving stakeholders from various walks of life and with a variety of expertise, will assist in the identification of priority areas for research.

- **Create a robust research environment based on excellence that transforms traditional approaches to health research; one that is flexible and evolving.**

The Institute will have the capacity to link researchers and provide unique forms of support to them. In addition to traditional forms of grant funding based on excellence as judged by peer review, transformative forms of support, also based on excellence, will include:

- making funds available (with a quick turn around time) for the development of research questions and preparation of proposals;
- supporting one or more longitudinal studies based at the Institute as a mechanism for facilitating research collaboration and for addressing issues surrounding the effects of earlier experiences on aging. The Institute would play a lead role in the management and implementation of this study and provide partial financial support in conjunction with other partner organizations (e.g., other institutes, industries, governments). Any longitudinal studies could be platforms for investigator-initiated research. In-depth local studies could complement any
longitudinal studies;

• ensuring that review committees consider proposals for longitudinal studies, including small-scale inexpensive research (traditionally such proposals have been refused, regardless of their scale), and that, where necessary, separate review committees are established for aging research. It will encourage the Governing Council to implement mentoring peer review, providing constructive feedback, opportunities to resubmit and matching promising applicants with a mentor for learning purposes. If such strategies are not implemented at the Governing Council level, they will be at the Institute level;

• promoting Institute database development and access (e.g., facilitating access to databases though Statistics Canada, the Canadian Institute of Health Information, provincial administrative databases, etc.; developing longitudinal and qualitative databases; compiling an up-to-date Institute database of all aging-related research conducted in Canada);

• creating international links by facilitating widespread international dissemination networks, "free trade" negotiations with organizations such as the Canadian International Development Agency, and funding for international research initiatives;

• supporting targeted studies with specific, well-defined populations over time. Researchers will be invited to apply with specific projects within the targeted area and the combination of projects will result in a solid base of information concerning the topic area. The responsibility of selecting these targeted areas will reside with the Executive and the Advisory Board;

• supplying capacity-building funds to support workshops. These workshops may be initiated by either researchers or the Institute in response to identified areas of weakness. They may be used as opportunities for established researchers to upgrade their skills (e.g., methodological approaches), be introduced to an emerging area of research, or bring together researchers for consensus building activities;

• supporting capacity-building for established researchers by providing resources for workshops/sessions to facilitate creative thinking. Individuals from outside the aging community will also be invited to present at these workshops. Not only will
these workshops introduce new perspectives to researchers of aging, they will also serve as an opportunity for networking. The capacity-building programs will also include resources for those researchers from outside the aging community who wish to receive specialized expertise in aging-relevant areas;

- providing resources for new researchers through mechanisms such as studentships, post-doctoral awards, and career awards;
- providing resources to enable researchers, in conjunction with members of the community, to further efforts on the dissemination of research findings in special circumstances or when a finding has unanticipated far-reaching relevance;

The existence of the Institute is a transformation of the traditional manner in which health research on aging has been approached. It will give ownership to researchers and stakeholders, creating a coherent environment that will act as a catalyst for research on aging. Never before has a mechanism existed in this country to ensure that research which is directly relevant to quality-of-life for Canadians as they age is actively pursued and integrated into our society. Moreover, the Institute will be proactive in facilitating new levels of collaboration, integration and comprehensiveness through its programs of research, mechanisms for capacity-building activities, and dissemination activities. It will do so in areas of existing strength and it will build capacity in areas that currently represent research gaps.

2.2 Organizational Structure and Operations:

In designing the Institute, it became evident that there must be a transitional phase from the current situation to the maturity of the CIHR and its Institutes. Where possible we have addressed how the Institute would function in transition and at maturity. The Institute will consist of a director with a staff to administer the programs of research and provide proactive facilitation and linkage among researchers and between researchers and other stakeholders (e.g., policy makers, non-profit organizations, seniors organizations). The proactive nature of the Institute’s role in the support and facilitation of research across the country and across disciplines will be reflected in various mechanisms within the Institute and will transform the way health research has traditionally been conducted in Canada.

Figure 1: Institute Organizational Structure
2.2.1 The Director

In the transition stage (3-5 years), the Director will be housed in Ottawa along with the secretariat staff if at all possible. The first Director will be critical in establishing the reputation of the Institute; they will be a dynamic individual with demonstrated originality in research and imaginative leadership skills. A director with these characteristics is essential if a transformative institute of this type is to flourish. It may also be desirable that an associate or deputy director, whose areas of strength are complementary to the Director, be appointed in order to assist with the necessary proactive outreach to both researchers and other stakeholders. It is anticipated that after the transition period, the Director could be housed in a host Institute with a small support staff. The main secretariat would remain in Ottawa. This structure was selected over an institute without walls for the following reasons:

- The first director will be key to the long term success of the Institute and must establish linkages and partnerships that currently do not exist (such as relationships with a variety of federal government offices, national non-profit organizations, research centres and groups, as well as individual researchers). The initial phase will require a full-time commitment to
ensure the vision, including the Institute’s proactive role with both researchers and stakeholders, becomes reality.

- A single location is necessary to ensure an institutional memory. Given the strong emphasis of the Institute on responsiveness and facilitation, the maintenance of the institutional memory is imperative.
- Directors are expected to change relatively frequently (every 3 to 5 years); and it would not be feasible to expect all potential directors to move to Ottawa, nor would it be feasible for the support staff (embodying the institutional memory) to move from one host institution to another.
- Liaison functions with the government and other national organizations are best served from a central location. This is a role of the Ottawa-based secretariat that could be maintained in the absence of the Director after the transitional phase.

2.2.2 The Advisory Board

As mandated by the CIHR program, the Director will report to the government through the CIHR Governing Council and will be guided by an Institute Advisory Board (see Figure 1). This Advisory Board would ideally be comprised of:

- high caliber researchers representing the four CIHR perspectives on health research: basic biomedical, applied clinical, health services & health systems, society, culture and health of populations.
- representatives from affiliated (partner) organizations. These individuals would represent their personal experience, not explicitly the organization.
- knowledgeable Canadian seniors. This group may include persons from all walks of life.

The Institute Advisory Board will liaise with the Director and the Institute's secretariat in long-term strategic planning for the Institute. The Board will interface with the Director in determining the priority topics for targeted research. Think tank activities may include Board members and may inform the recommendations made by the Board. The Board will recommend desirable areas for CIHR-wide programs to the CIHR council through its Director, and will also interact with the Boards of other institutes in identifying areas for joint integrated research endeavors. The Advisory Board will be composed of two-thirds scientists, representing the four cross-cutting themes of CIHR. It will also include stakeholders from the following sectors: health care professionals; government agencies; non-profit organizations for seniors.
Approximately 1/3 of the Board (4-6 people) will represent stakeholders. Membership on the Board will represent all regions of Canada (e.g., the Maritimes, Quebec, Ontario, the Prairie provinces, the Western provinces and Northern regions), as well as gender perspectives. Four standing subcommittees will be struck for each of the stakeholder groups and these subcommittees will provide input on issues such as areas for enhanced research opportunities, methods for disseminating research findings and needs for enhanced integration to the Board through their respective representatives. The composition of the Advisory Board is critical to the success of the Institute. Not only will the members of the Board advise the Director on matters concerning the Institute, but the Board members will serve as ambassadors for the Institute who play an active role in reinforcing links within existing networks of researchers and stakeholders and forging new relationships with other research Institutes and new agencies.

A smaller executive committee will be comprised of the Director and members from the Advisory Board, representing the distribution of the full board.

### 2.2.3 The Secretariat

The secretariat will be involved in three key aspects of the Institute’s operations:

- **Public Information/Relations**
- **Database development and maintenance (e.g., maintain up-to-date information on research activities in Canada and, to a lesser extent, abroad; liaise with other data sources; compile longitudinal databases)**
- **Program development and management**

The secretariat staff, forming the “institutional memory” essential to the level of proactivity and responsiveness envisaged for the Institute, would be permanently housed in Ottawa. The secretariat may take on other roles as well, but the extent of these roles (e.g., ethical review) cannot be clearly defined until the main CIHR secretariat is established, and the functions of Institute-level secretariats are determined.

### 2.2.3.1 Public Liaison Office

The Public Liaison Office will be responsible for responding to general inquiries concerning research on aging in Canada as well as for organizing an efficient response network. This office will work closely with relevant federal and provincial government departments and with Institute partners to keep abreast of their needs. It will remain up-to-date concerning who is doing what research on aging in Canada so that teams of researchers can be assembled quickly for responding to high priority issues. This office will also work
closely with the community and non-scientific partner organizations in the dissemination of research
information. This will include keeping informed about the needs of these groups as well as ascertaining
and using the most appropriate vehicles to convey research findings to particular consumers. In this
capacity, the office will assist researchers to disseminate research findings and may play a role in
evaluating the success of dissemination activities which receive support from the Institute. In addition, this
office will maintain a Web page for the Institute, interact with the media, and facilitate international
linkages for researchers in aging.

2.2.3.2 Database Development Office
The Database Development Office will house a central database listing of all health and health care
research in Canada relevant to the quality of life for Canadians as they age and researchers associated with
this pursuit. The Canadian Association on Gerontology saw the advantages to having access to such a list,
which led to the development of the 1994 National Directory of Researchers in Aging. The Institute will
liaise with this list’s creators to facilitate its development, ongoing maintenance and use. This will provide
Institute with the capacity to respond quickly to requests for information and to be able to bring together
people and resources to determine whether or not the capacity exists to find a solution. The Institute would
be able to respond to needs arising from the community through the same process. The Database
Development Office will also facilitate access to other data sources. There are a number of sources of data
on aging in Canada, including provincial administrative data sets and tax files, that researchers have not
made full use of due to limitations on access. The Institute could play a facilitative role in liaising with
these data sources (e.g., Canadian Institute of Health Information; Statistics Canada; Canadian Foundation
for Innovation) and standardizing access, as well as ensuring that relevant aging factors are included in
national surveys. This office would work with the CIHR secretariat and other institutes where appropriate
to ensure there is no duplication of efforts. It would interact in a supportive function with the Public
Liaison Office and the Program Management division for supplying the necessary information in a timely
fashion.

2.2.3.3 Program Management
The secretariat will organize and manage programs in support of research and capacity-building in the
general areas of healthy aging and health care/illness. The promotion of healthy aging is critically
important as we enter the new millennium with ever-increasing proportions of the population reaching old
age. However, the concerns of older adults with illnesses must also be addressed; this will be achieved
within the context of enhancing quality-of-life and the provision of effective and efficient care.

The operations of the programs division of the secretariat are key to the success of the Institute by ensuring the implementation of the Institute’s mission. Close liaison with the CIHR Council concerning peer review issues will ensure that the unique needs of researchers in the area of aging are recognized. Close relations with the Public Liaison office and the Database development office will ensure that the most suitable members for think tank activities and review panels (for targeted research) are selected. Similarly, these working relations will ensure all researchers with an interest in aging are informed about traditional research and capacity-building opportunities.

2.3 Programs
2.3.1 Research Programs
Research programs will address two classes of grant funding: investigator-initiated and targeted grants. The investigator-initiated grants are essentially the same as the current process of applying for operating funds (e.g., through MRC). The Institute will support requests received from individual investigators (i.e., disciplinary research) and those that are integrative in nature (i.e., inter- and multidisciplinary). The Institute will support both types of research based on the premise that good multidisciplinary research requires as its foundation good disciplinary research. The Institute will work with the CIHR secretariat to ensure inter- and multidisciplinary proposals are fairly adjudicated and not subjected to disciplinary biases.

Special review committees heave to be established. In addition to grant funding for projects, funds would be available to bring together multidisciplinary teams interested in a particular area to develop proposals (to ensure that the most relevant questions are being addressed). The areas of research of interest to these multidisciplinary teams will emerge from the research community and will typically differ from the areas designated for targeted integrative projects. If insufficient inter-/multidisciplinary research is forthcoming, the Institute will sponsor specific competitions where inter-/multidisciplinarity is a requirement.

Targeted grants are designed to bring together researchers from a number of disciplines to address an area of priority. One mechanism for determining priority topics is to bring together people from various backgrounds (e.g., researchers, policy makers, recipients of service) in think tanks to delineate gaps in and priorities for knowledge. Once areas for research are identified, the Institute would play a proactive role in bringing together experts from various disciplines and Institutes to address the question at hand. This
process is seen as transformative in two ways:

- the Institute will play an active role in facilitating the formulation of the questions to be addressed.
- The Institute’s role will go beyond a passive “call for proposals” in the identified area. Targeted areas, as part of the research agenda of the Institute, will draw on the expertise of stakeholders and researchers. Existing networks of research centres and groups will be a key part of this process.

2.3.1.2 Peer Review

All grant proposals (both investigator-initiated and targeted) will undergo peer-review. In the transition phase, the CIHR Council will likely be responsible for peer-review and the disbursement of program funding. Although this avoids duplication of committees across Institutes and helps to ensure consistency of standards across Institutes, characteristics inherent to certain areas of investigation may be unintentionally overlooked or devalued. Since aging as a distinct focus has not traditionally been a part of the culture of health research, this may be particularly true. For example, a longitudinal perspective is inherent to research on health and aging but may be viewed as unnecessary or too expensive by researchers from other fields. Certainly, general principles associated with peer review would need to be adhered to for all reviews (e.g., biomedical research reviewed by biomedical reviewers, social sciences research reviewed by social scientists), but guidelines for reviews will need to be developed to ensure that reviews are consistent with the basic principles of the Institute. The existing committee structure under MRC will need to be altered to include committees that have representation from all four CIHR themes as well as committees for specific themes (e.g., basic biomedical research). If necessary, the Institute would ensure that separate committees to review aging research are set up by the Governing Council. Where partnership arrangements (for example, between NHRDP and the Institute) call for joint peer review committees, the Institute may argue to the Governing Council that the Institute is the appropriate channel. Relevance reviews outside of the scientific panels should occur at the Institute level. The Institute suggests the Governing Council implement training for serving on peer review panels.

2.3.2 Capacity-building programs

The tremendous need for capacity-building in aging research is driven by anticipated population demographics as well as the significant lack of funding targeted for aging research in the past. Although an awareness of the relevance of studying aging emerged in the 1970s, efforts to address the situation to date have been insufficient to prepare us for the new millennium. In addition, the way aging is viewed in
our communities has limited both its popularity as a field of study and the breadth of disciplines involved. For example, aging is considered a substantive, not a disciplinary, area. Universities, the major site for training new researchers, continue to primarily support disciplinary areas consequently limiting the number of researchers in cross-cutting areas such as aging. The fact that aging cuts across various diseases has also limited the number of researchers identifying themselves with aging research. Rather, these researchers adhere to the traditional “disease-specific” approach in their research activities, sometimes ignoring the aging dimension. That is, they consider themselves to be cancer researchers, pulmonary pathophysiologists, cardiologists, or cognitive neuroscientists, whose work is unrelated to aging.

The greatest need for capacity-building is presently in the humanities and basic sciences, specifically with respect to normal and/or healthy aging processes. The basic sciences have suffered greatly from the traditional “disease-based” models of research funding where normal aging has no relevance. Humanists are noticeably absent from health research in general, including the aging area. Other areas have begun to develop but require additional support to ensure continued growth. These areas include research related to policy, health economics and geography.

Capacity-building support will be provided in the form of studentship and new investigator competitions. Student support will be considered in relation to the supervisor’s research and for the student’s research, independent of the supervisor’s research program. Various types of student support (e.g., studentships, project-related research internships, research training internships that focus on a specific method or substantive area, community research internships working on a research project with a community group) will be offered. Capacity-building support will also be provided in the form of salary support, endowed chairs, and opportunities for upgrading of skills or re-training for established investigators. Workshop grants may be initiated by Institute members or may be requested by the Institute in response to identified areas of weakness in the field. Although all requests for operating funds will require a plan that includes the involvement of partner organizations for disseminating research findings, additional dissemination funds will be available to projects where there is a need. The Public Liaison Office will be involved in this process.

2.4 Membership
The Institute will not have “members” as such who are defined by a set of criteria or by their holding a grant from the Institute. Instead, any researcher may apply for funding and will be asked to demonstrate
the relevance of the research to aging as part of the application process. The proof of the Institute’s success will lie in the extent of involvement of researchers in the Institute, its various programs and committees, and the generation of new knowledge that is of use and used by society.

2.5 Relationships between Institutes
Aging is a theme that cuts across many areas of health research. Most major diseases and disorders of adulthood are age-related (e.g., congestive heart failure, diabetes, arthritis, Alzheimer’s disease). The biology of aging is poorly understood, yet may be related to many diseases that affect persons of all ages. Aging impacts people of all races, genders, and socio-economic status, though its effects on the health of these people vary widely. Social determinants of health interact with biological factors across the life course, contributing to the health of persons at all ages and accumulating over time. Health beliefs, attitudes and perceptions have a tremendous impact on the use of the medical care system, health practices, the use and effectiveness of self-, informal and formal care. It is important to know how the changing face of society (e.g., family structure, values, commitments) will impact the quality-of-life of older Canadians. There is concern that older persons may dominate the use of the health care system. In our quest for better quality-of-life for Canadians of all ages, much more attention must be paid to modifiable determinants of health, including diet, exercise, social support, and family relations.

There are many opportunities for horizontal integration with other proposed Institutes: the observation of *Chlamydia pneumoniae* in the brains of Alzheimer’s disease victims provides a possible link with microbiology and infectious diseases; the need for support due to age-related decline in physical health provides strong links with the disabilities, rural health, and home care areas, should they be separate Institutes; the primary role of women as caregivers (informal and formal) and the relative poorer health and social status of older women than men form an area of common concern with a gender and women’s health Institute; issues related to end-of-life care and competency to make decisions about the receipt of medical and supportive care are directly relevant to bioethics and health law.

The Institute will liaise with other institutes around specific topics of common interest and encourage joint submissions of integrative investigator-initiated applications and targeted projects. It will work proactively, where appropriate, to ensure that researchers who are funded by other institutes are aware of their work’s relevance to aging, and that the Institute on Aging is aware of other research. Directors from
each of the Institutes will meet regularly.

2.6 **Affiliated Organizations**

There are many existing organizations (see Appendix B) whose functions are relevant to the mandate of the Institute. These organizations will be invited to become affiliated with the Institute through various mechanisms. Involvement on the Institute Advisory Board, standing subcommittees of the Advisory Board, think tanks, and as participants in targeted project development are examples of possible roles for affiliated organizations. Involvement of affiliated organizations as participants or collaborators in investigator-initiated projects will also be encouraged. Partnerships, in terms of funding, research collaboration and/or dissemination will be formed with some. It is anticipated that these organizations will work closely with the Public Liaison Office in activities designed to disseminate research findings to their members and society in general. The Liaison Office will work closely with the Canadian Association on Gerontology in developing and fostering linkages already established by that organization and increasing the visibility of Canadian researchers through their network of communications. In addition, it is anticipated that the Liaison office will maintain strong links with the National Advisory Council on Aging and the federal and provincial government offices on seniors affairs (see Appendix B). These links will ensure the information needs of the governments are being met and that these same governments are hearing the messages emerging from the research being conducted through the Institute. Working closely with these offices will ensure that policy relevant material is accessible, that population health issues receive attention across levels of government, and that all efforts to pursue the broadest possible dissemination of information are given.

There are, in addition, several research centres and groups located in many of Canada’s universities and teaching hospitals. The intent of the Institute is to support, not duplicate, their work. The Institute Director will sit as a member of a group of centre group leaders to ensure their input into the operation of the Institute and that the Institute is facilitative of their research. A virtual network will also ensure such linkages, capitalizing on and strengthening the base of research currently in existence.

2.7 **International Liaisons**

The development of a strong national profile in aging research will enhance collaborations with organizations in other countries. It is anticipated that the Institute will facilitate strong links with the International Institute on Ageing (United Nations - Malta), the American National Institute on Aging, and
the World Health Organization (e.g., Programme for Health of the Elderly) as well as others (see Appendix C, International Linkages). The age demographic that is anticipated for Canada is far less dramatic than that anticipated in developing countries, and the research information Canada has and will continue to produce in the area of health and aging will contribute to global collaborative efforts to understand the impact of aging. In turn, other countries have much to teach us. Collaborations with these organizations may take various forms. For example, the Institute may assist a group of Canadian researchers to develop formal research liaisons with a group of researchers in China, actively seek out delegate researchers to send to international consensus conferences on issues relevant to aging, negotiate an exchange agreement for international review procedures to facilitate the review of targeted projects, and seek out international research opportunities, actively promoting the involvement of Canadian researchers in these projects.

3.0 Conclusions

3.1 An example of research areas to be addressed by the Institute: Cognitive Impairment

One of the two greatest fears that middle-aged adults have about their impending old age is that they will become demented. In part, this stems from a lack of understanding about cognitive changes as we age. Cognitive changes are a normal part of aging. Memory declines in some areas, but that does not necessarily mean that there are significant impacts on functioning (one example is short-term capacity). In other areas, such as verbal components of intelligence, there is increased ability as we age. Nevertheless, mild cognitive impairment occurs among 17% of those aged 65 and over. Of these, 40-60% become demented within 3 to 7 years. In other words, approximately half will not decline to dementia. Eight percent of those aged 65 and over suffer from dementia, as do 34% of those aged 85 and over.

Research is required that can identify those who are at risk of becoming demented and, among those with mild impairment, who will become demented. We need to seek methods of preventing cognitive impairment as well as finding cures for those who suffer from it. Treatment and care delivery are important aspects for those suffering from cognitive impairment. These questions require both micro and macro approaches and contributions from multiple disciplines.

At the present time in Canada, research is being conducted in many disciplines. Basic neurobiology, neurochemistry and genetics differentiate types of dementia from one another. They have concluded that there are, not one, but multiple genes responsible for dementia. Psychologists are identifying the domains
in which impairment occurs - memory, language, visual, and spatial functions - and the impact on daily functioning. Social scientists are examining care provided to those suffering from cognitive impairments, both informal caregivers and the health care delivery system. Ethicists are involved in end-of-life issues, both the appropriateness of certain types of care and issues surrounding voluntary death. Health care practitioners (geriatricians, linguists, nutritionists, occupational therapists, chiropractors, alternative healers) are sometimes involved in research and are busy providing care. New knowledge is being translated to care. Long-term care institutions are creating wandering loops instead of dead-end corridors; they are no longer waxing their floors to a shine - dementia sufferers frequently mistake shiny floors as lakes of water and will not step on them.

Although not abundant, and not the norm, there is research being conducted from a life course perspective; both longitudinal and inter-/multidisciplinary research are also being conducted. These are the types of research that the Institute on Aging will promote and facilitate, recognizing that multidisciplinary research requires strong and excellent disciplinary research as a necessary precondition. Longitudinal research has demonstrated that cognitive and intellectual decline are less and occur later than do cross-sectional studies. The longitudinal Nun Study reveals that characteristics present as early as puberty (such as writing skills) are predictive of later life cognitive decline (Snowden et al., 1996). We do not know if the teaching of such skills during these years can prevent cognitive decline later on. Research is also discovering links between both psycho-social stress and social support of the informal caregiver, with the rate of decline in cognitive impairment of the care receiver (using both psychological and physiological measures such as memory, reasoning, natural killer cell activity, coronary heart disease). This is a new frontier for research on aging and the area needs a catalyst that will facilitate such inter-/disciplinary studies, that will encourage researchers into this area and that will broaden their thinking. It is within this new frontier that advances towards a healthier aging society will take place.

3.2 Conclusions
It could not be more timely for Canadians to benefit from a national Institute on Aging. Such an institute could bring coherence to the now dispersed efforts by researchers, health care providers, policy makers and the non-profit organizations all currently working to ensure healthy aging and care for those with ill health. A national institute could bring synergy, catalyzing current strengths and building new ones, delivering Canadians a greater quality of life as they age.
To accomplish these goals, a proactive institute built on scientific excellence and relevance to Canadians is envisioned. Integration, collaboration, and partnerships are all central. Scientific and organizational leadership by a Director who is committed to the vision is also essential, as well as adequate resources. Canadian gerontologists, researchers and non-researchers alike, have striven and will continue striving to bring new knowledge to this field. They have done so and are doing so without appropriate funding, organizational or leadership support. With the catalyzing power of a national Institute on Aging, they can take quantum leaps forward in their contributions to scientific discoveries that will advance the quality of the lives of individuals and society as a whole.
References


### APPENDIX A: Current Canadian Research on Aging *

#### BASIC BIOMEDICAL
...includes aging-related aspects of Alzheimer’s diseases & other neurodegenerative disorders, biological rhythmicity, cell biology, cell differentiation, development of animal models, endocrinology, genetics, immunology, integrative neurobiology, molecular biology, molecular genetics, motor function, neuroscience, nutrition & metabolism, pathobiology, physiology, protein structure & function, sensory processes

Centre de Recherche en Gerontologie et Geriatrie, Sherbrooke; Centre for Activity & Aging & Canadian Centre for Activity & Aging, London Ontario; Dalhousie Geriatric Medicine Research Unit; Institut Universitaire de Geriatrie de Montreal; Lawson Research Institute, London Ontario; McGill University (including Division of Geriatric Medicine); Mcmaster University; R. Samuel McLaughlin Centre for Gerontological Health Research, Hamilton; University of British Columbia (including Division of Geriatric Medicine); Universite de Quebec, Laboratoire de Gerontologie; University of Waterloo, Department of Health Studies & Gerontology; University of Western Ontario, Division of Geriatric Medicine

#### SOCIETY, CULTURE & POPULATION HEALTH
...includes aging-related aspects of ageism, behavioural & psychological development, caregiving, competence, crime & law, demography & population epidemiology, drug abuse, drug use, economic security, education, elder abuse, housing, intergenerational relationships, labour, leisure & activity/exercise, lifestyle, literacy, personality & social psychological aging, poverty, quality of life, retirement, self-care, sexuality, social policy, social security, status transitions

Centre de Recherche en Gerontologie et Geriatrie, Sherbrooke; Centre on Aging, University of Manitoba; Centre on Aging, University of Victoria; Dalhousie Geriatric Medicine Research Unit; Gerontology Research Centre, Simon Fraser University; Institut Universitaire de Geriatrie de Montreal; Institut Universitaire de Gerontologie Sociale du Quebec; Institute for Human Development, Life Course & Aging, Toronto; Lawson Research Institute, London Ontario; McMaster University; Mount St. Vincent University; Northern Educational Centre for Aging & Health, Thunder Bay; Seniors’ Education Centre, Regina; University of British Columbia (including Division of Geriatric Medicine); University of Guelph; University of Manitoba (including Centre on Aging); University of Ottawa; University of Western Ontario; Veterans Care Program, London Ontario

#### APPLIED CLINICAL
...includes aging-related aspects of alternative therapies, cancer, cardiovascular functions, cognitive functioning, competence, dementia, endocrinology, gastroenterology, infectious diseases, metabolism, mobility, neuropsychology, nutrition, orthopedics, pain, pharmacology, pulmonary functions, renal functions, sleep & biological rhythms

Centre de Recherche en Gerontologie et Geriatrie, Sherbrooke; Centre for Activity & Aging & Canadian Centre for Activity & Aging; Centre on Aging, University of Manitoba; Centre on Aging, University of Victoria; Dalhousie Geriatric Medicine Research Unit; Gerontology Research Centre, Simon Fraser University; Institut Universitaire de Geriatrie de Montreal; Lawson Research Institute, London Ontario; McGill University, Division of Geriatric Medicine; McMaster University; R. Samuel McLaughlin Centre for Gerontological Health Research, Hamilton; Sunnybrooke Health Science Centre, Toronto; S.W. Ontario Regional Geriatric Program; Universite de Quebec, Laboratoire de Gerontologie; University of British Columbia (including Division of Geriatric Medicine); University of Guelph; University of Waterloo, Dept. of Health Studies & Gerontology; University of Western Ontario, Division of Geriatric Medicine;

#### HEALTH RELATED SERVICES & SYSTEMS
...includes aging-related aspects of assessment tools, elder abuse, health care organization, home care, housing, leisure & activity/exercise, long term care, mental health, nutrition, palliative care, pharmacology, quality of life, retirement economics, self-care, service delivery, social policy, technical aids, transportation

Centre on Aging, University of Manitoba; Centre on Aging, University of Victoria; Dalhousie Geriatric Medicine Research Unit; Gerontology Research Centre, Simon Fraser University; Institut Universitaire de Geriatrie de Montreal; Institut Universitaire de Gerontologie Sociale du Quebec; Institute for Human Development, Life Course & Aging, Toronto; Lawson Research Institute, London Ontario; McGill University, Division of Geriatric Medicine; McMaster University; Mount St. Vincent University; Northern Educational Centre for Aging & Health, Thunder Bay; R. Samuel McLaughlin Centre for Gerontological Health Research, Hamilton; Seniors’ Education Centre, Sheridan College; S.W. Ontario Regional Geriatric Program; Sunnybrooke Health Science Centre, Toronto; University of British Columbia (including Division of Geriatric Medicine); University of Guelph; University of Waterloo, Dept. of Health Studies & Gerontology; University of Western Ontario, Division of Geriatric Medicine; Veterans Care Program, London Ontario

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*The above research centres and universities do not represent an exhaustive list, but a sample of those who responded to an informal survey conducted by this project. This list does not include, for example, researchers who do not recognize that their work is aging-related, nor those researchers who were unable to respond to the survey, many due to the short time frame and time of year of this project.

### APPENDIX B: Canadian Stakeholder Organizations & Government Offices Contacted
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<th>GOVERNMENT OFFICES</th>
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<th>OTHER RELEVANT ORGANIZATIONS</th>
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<tr>
<td>Department of Veterans Affairs</td>
<td>Canadian Association on Gerontology</td>
<td>Alzheimer Society of Canada</td>
</tr>
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<td>Division of Aging and Seniors, Health Canada</td>
<td>Alberta Association on Gerontology</td>
<td>Arthritis Society of Canada</td>
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<td>Manitoba Association on Gerontology</td>
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<td>Canadian Hearing Society</td>
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<td>Gerontology Association of Nova Scotia</td>
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<td>Saskatchewan Seniors Policy Analyst</td>
<td>PEI Association on Gerontology</td>
<td>Canadian Institute for Health Information</td>
</tr>
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<td>Manitoba Seniors Directorate</td>
<td>Association d’Age d’Or</td>
<td>Canadian Long Term Care Association</td>
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<td>Ontario Seniors Secretariat</td>
<td>Canadian Association of Pre-Retirement Planners</td>
<td>Canadian National Institute for the Blind</td>
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<td>Conseil des Aines</td>
<td>Canadian Association of Retired Persons</td>
<td>Canadian Nurses Association</td>
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<td>New Brunswick Provincial Seniors’ Issues Consultant</td>
<td>Canadian Gerontological Nursing Association</td>
<td>Canadian Palliative Care Association</td>
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<tr>
<td>Nova Scotia Seniors Secretariat</td>
<td>Canadian Pensioners Concerned</td>
<td>Canadian Physiotherapy Association</td>
</tr>
<tr>
<td>PEI Department of Health and Social Services*</td>
<td>Canadian Society of Geriatric Medicine</td>
<td>Heart and Stroke Foundation</td>
</tr>
<tr>
<td>Newfoundland Continuing Care Division*</td>
<td>Quebec Society of Geriatric Medicine</td>
<td>Volunteer Canada</td>
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<tr>
<td>NWT Department of Health and Social Services*</td>
<td>Reseau d’Info des Aines du Quebec</td>
<td></td>
</tr>
<tr>
<td>Yukon Department of Health &amp; Social Services*</td>
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</table>

*some provinces do not have seniors’ offices/secretariats. In this case, members of relevant departments who deal with seniors’ issues would serve as representatives.

**APPENDIX C : International Linkages**

The main purpose of the Canadian Institute on Aging /Insitut Canadian de Vieillissement is to facilitate a
national focus and framework for aging research in Canada. However, collaboration with international researchers is also essential to the quality of aging research in this country. Facilitating linkages with these organizations will help to ensure that Canadian research on aging is internationally competitive, that research findings are disseminated through a far-reaching international network, and that Canadian researchers in aging can collaborate more easily with peers around the world. The organizations will serve as sources for international peer review and will also contribute to multicultural perspectives on research about the aging process. The CIA/ICV will maintain ongoing relationships with organizations such as the United Nations International Institute on Aging in Malta, the World Health Organization Aging and Health Programme, the National Institute on Aging in the United States, the Australian National Aging Research Institute and the China National Committee on Aging.

When appropriate, the Institute will seek out and interface with other national organizations representing aging research and seniors around the world such as: the Japan Well-Aging Association, the Federation Internationale des Associations des Personnes Agees in France, the Slovakian Research Institute of Gerontology, HelpAge International in the United Kingdom, the Brookdale Institute of Gerontology and Adult Human Development in Israel, the European Federation for the Welfare of the Elderly, the African Gerontological Society, the Institute of Gerontology in Kiev, and the Municipal School of Gerontology in Argentina. These groups would participate in research partnerships, in think tank groups and peer review committees; they would also facilitate international dissemination of research results. Canadian researchers would be provided with the opportunity to reciprocate in these countries.

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