Final Report – Longevity and Healthy Aging: Evidence and Action

Plenary Panel held at the International Association of Gerontology's 17th World Congress of Gerontology, Vancouver, July 5, 2001

Supported by a grant from the Health Canada Population Health Fund

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A total of 4,086 people, from 75 countries attended the International Association of Gerontology's 17th World Congress of Gerontology, held in Vancouver, July 1-6, 2001. A substantial proportion of these people were present, on July 5, 2001,from 8:30-10:00 am, when as part of the Congress, a special plenary session, supported by a grant from the Health Canada Population Health Fund was held on the topic "*Longevity and Healthy Aging: Evidence and Action*". Chaired by Simon Fraser University professor Dr. Andrew Wister, the chair of the Congress's Scientific Program Committee, the session featured three internationally acclaimed gerontologists: from New York, **Robert Butler, MD**, first director of the U.S. National Institute on Aging and currently President and CEO of the International Longevity Centre; from Berlin, Germany, **Paul Baltes, PhD**, Director, Centre of Life Span Psychology, Max Planck Institute for Human Development; and from Geneva, Switzerland, **Alexandre Kalache**, MD, PhD, Head of the World Health Organization's Ageing and Life Course Programme. The fourth distinguished speaker, **Robert McMurtry**, MD, Assistant Deputy Minister, Population and Public Health Branch, Health Canada addressed the topic from a Canadian perspective.

This report summarizes the four presentations, in the process highlighting "lessons learned" and "best practices" as well as gaps in policy, practice and information.

Healthy Aging as a Global Investment

Dr. Robert Butler opened the session by pointing out that healthy aging is both an individual matter and a public health issue. At the individual level, it is a dividend of a lifetime commitment to healthy behaviour and access to education. At the population level it is a significant generator of wealth. In support of the latter he cited research (Bloom & Canning, 2000) showing substantial increases in GDP in societies that had a five-year advantage in life expectancy.

He noted, however, that in spite of the known relationship between health and wealth, investment in research on healthy aging and in particular, on the basic biology of aging, is minimal. He argued for increased funding for such research pointing out that it could "help stave off the increasing vulnerability to disease and death that follows the aging of the organism". As well, he argued for support of research that would increase our understanding of the socio-economic, moral, cultural and personal consequences of the new longevity and population aging.

Advancing programs for the training of health personnel to more effectively assess, diagnose, care for, and treat older people was a second key target area for investment, according to Butler, if we are serious about achieving healthy population aging.

A third objective should be the creation of healthy intervention communities "as counterparts to the Framingham type of discovery community that brought us the coronary risk profile". He noted that the Millennium Communities Project that his organization is participating in would focus on diet and exercise. In particular, encouraging smaller portions of food, reduced saturated fat, and exercise via inexpensive walking clubs (The Partnership to Promote Healthy Eating and Active Living, Inc. undated).

Banking Health

Articulating a theme that would be elaborated on by Dr. Kalache, Butler underscored the importance of taking a life course approach to individual and population health. He pointed out that many of the diseases of old age are disorders that begin earlier in life. As an example, he noted that young Americans killed in the Korean War had pathological evidence of atherosclerosis. Good health habits in youth are very important in preventing disability in old age. Bone density, for example, is known to be most effectively established during puberty and adolescence. Butler expressed discouragement at the number of overweight persons in the United States, especially children -- 20% of whom are obese. This, in turn, has lead to an increased incidence of Type II diabetes in children, striking some as young as 10 years of age.

Fostering the Health and Wealth of Nations

Butler stated that it was a matter of enlightened self-interest for rich and powerful nations to improve the health and educational status of the developing world. “Effective globalization and a global economy require healthy and productive consumers. Exporting nations…cannot succeed if there are no consumers who have the means to buy their products and services”. Currently, 10 percent of the lifetimes of people living in the developing world are lost to disease and disability. Nations whose citizens have impaired and shortened lives cannot be fully productive.

Another reason for reaching out and assisting the developing world is to protect against the potential dissemination of disease (e.g. AIDS, tuberculosis) via modern transportation.

Suggested strategies for development included:

- Establishing an international, intergenerational global Health Corps modelled in part on France’s Doctors Without Borders and the US Peace Corps to monitor, teach, and serve health needs.
- Establishing an international, intergenerational Voluntary Teachers Corp to advance education
- Expanding credit and reducing interest rates to reward advances in public health and education
- Supporting the efforts of the World Health Organization

Qualified Optimism

Professor Baltes began his comments by agreeing with Dr. Butler that the economics of a society are extremely critical for healthy aging. He also agreed that it was important to take a life course approach, stating that “the best guarantee for the future of an aging society are healthy children, healthy youth and healthy adults”. He then went on to caution the audience about generalizing optimistic findings based on samples of young-old individuals to the situation of the very old – i.e. persons aged 85 and over. Citing findings from the Berlin Aging Study (Mayer & Baltes, 1996; Baltes & Mayer, 1999), a longitudinal study of men and women aged 70-100, which began in 1990, he argued for the existence of a “fourth age”, characterized by a non-reversible negative patterns of change. Speaking about “cognitive psychological mortality”, he noted that in the fourth

age the behaviour system is challenged to such a degree that none of the typical interventions will work; learning potential is severely restricted; multiple dysfunctions are apparent and much of the individual's cognitive resources are required just to manage his/her body.

In order to place his remarks in context it is necessary to revisit his 1996 American Psychological Association Award Address "*On the incomplete architecture of human ontogeny*" (Baltes, 1997). In this landmark paper, which draws on both evolutionary and ontogenetic perspectives, he identifies three general functions or outcomes of development (a) growth, (b) maintenance, including recovery (resilience), and (c) regulation of loss. Over the life span, he argues, there is a systematic shift in allocation of resources of these three functions such that in childhood the emphasis is on growth, in adulthood on maintenance and recovery while in old age more and more are directed towards regulation or management of loss. The paper also refers to the meta-theory of Selective Optimization with Compensation (Baltes & Baltes, 1990), which describes strategies people use to regulate loss.

In his World Congress of Gerontology talk Dr. Baltes illustrated this theory with the following examples.

Example 1: When, at the age of 80, the pianist Arthur Rubenstein was asked in a television interview how he was still able to play so well, he said "I play fewer pieces" (the selection part of the process) "I practice them more often" (the optimization part) "and I also produce sharper contrast between fast and slow movements to cover up my loss in mechanical speed" (compensation)."

Example 2: A retired university professor purchases a farm and works it for a number of years. When it gets to be too much for him, he works only in the garden and as he loses sensory and motor function moves more and more into the house until towards the end of his life, his every day purpose in life was taking care of a window box.

Psychology, according to Dr. Baltes, is a powerful protector against the biological losses of aging. Our internal mental reorganizations are extremely powerful in maintaining well-being. As illustrated in the story of the window box, in old age, by reducing the territory one can still nurture the territory. But with increasing age people have fewer and fewer resources to engage in optimization and compensation. Data from the Berlin Aging Study, illustrated in a number of slides shown during the plenary session as well as in papers presented elsewhere in the Congress program (e.g. Jopp & Smith, 2001; Smith, 2001a; Smith 2001b), indicate that overall, beginning at about the age of 85, there is a clear, strong and non-reversible change pattern that is largely related to the biological life course. While culture – which in Baltes' lexicon includes education as well as "crystallized cognitive pragmatics" i.e. the software of the mind – enhances function of people with greater amounts of it in the third age, "culture runs against a wall in the fourth age".

Baltes stated that while like most of us, he would like the fourth age be a continuation of what we have seen in the third age, he does not think there is any evidence of compression of morbidity so far. He also has serious doubts that genetic intervention will be able to control the aging process. Noting that even on one's deathbed one is

expected to learn and to be generative he stated, “The biology of the human organism, its incomplete architecture, doesn’t make that possible.” Data from the Berlin Aging Study, for example, from studies of walking and talking at the same time, show that with aging more and more of our resources go into coordination of the body. “It’s like having a mortgage that we have to pay on continuously. Even if cognitive resources would stay at the same level, which they do not, one has less and less available for free ranging activity and to be invested into further development”.

In concluding his remarks, however, he ended on an optimistic note with the following joke. John and Mary come to heaven and speak to Saint Peter. After some chit-chat with John who had been a successful real estate salesman, Saint Peter says “OK, now I’m going to show you where you are going to live” and pointed out a wonderful bungalow next to a golf course and swimming pool and putting green. John turned to Mary and said “You know, we could have had this much earlier if it weren’t for your vitamin pills every morning.”

Contrasts: Aging in the Northern and in the Southern Hemispheres

The third speaker, Dr. Alexandre Kalache, began his presentation with a series of slides and commentary documenting the life history of a woman born in Sao Paulo Brazil in 1900 who is now aged 100. He used her life history to describe a number of public health achievements and developments in health care that have taken place over the last 100 years – such as the conquest of diphtheria and other infectious diseases through vaccination, the prevention of premature death from pneumonia through the use of antibiotics, improvements in the diagnosis and treatment of diabetes, and development of pacemakers and other technologies that enable people with heart disease to live into old age. He noted, however, that she was one of the lucky ones. Only 10% of babies born in 1900 in Brazil reached even the age of 60. Part of her good fortune was that she was born into an affluent family and thus, was able to access new health treatments and technologies as they were being developed.

Dr. Kalache went on to point out that much of the much heralded increase that will take place worldwide in the older population between now and 2050, will take place in the southern hemisphere. “However”, he stated emphatically, “while the developed countries of the north got rich before they got old, the developing countries of the south are becoming old before they become rich”. Reminding us that those who will be old in 2050 are aged between 15 and 25 now, he asked, “How are they living now?” The contrast between north and south was dramatically illustrated by comparing the per capita income –currently $30,000-$40,000 in Switzerland and Japan -- with a few hundred dollars per year in Nigeria and Egypt. Other areas of difference included rapid social changes in the south caused by urbanization, modernization, wars and natural disasters and, in Africa especially, by the AIDS epidemic.

Kalache noted that a culture of aging is a culture of solidarity – between generations, between rich and poor, and very importantly between the north and the south. Another message was that aging belongs to the development agenda. As articulated in the Brasilia Declaration (see Gutman, 1997) aging is a development issue; an elderly person is a resource for the family, the community and the economy. Another important message related to the life course perspective, which he considered essential for us to

understand the ageing process. Emphasis on prevention of non-communicable disease and on health promotion was another key theme. While in 1990, non-communicable disease accounted for 27% of the global burden of disease, Kalache noted that the figure will jump to 43% by 2020.

In his concluding remarks, Dr. Kalache thanked Health Canada for their support of the WHO Ageing and Life Course Programme and drew attention to a new publication that they had jointly produced that was to be launched that afternoon. Entitled *Health and ageing: a discussion paper* (WHO, 2001) this document formed the basis for *Active ageing: A policy framework* (WHO, 2002) which was the WHO Ageing and Life Course Programme's contribution to the Second United Nations World Assembly on Ageing.

The Canadian Perspective

The final speaker, Dr. Robert McMurtry, began his comments by pointing out that Canada has much to celebrate with respect to population aging. For example, life expectancy at 65 stands at an all time high: 16 years for men and 20 years for women. The latest National Population Health Survey shows a decrease in activity limitations among 65-74 year olds, there has been a decline in the proportion of people aged 75 and over who live in long term care institutions and almost 80% of Canadian seniors rate the health as good, very good or excellent.

Following a video clip of celebrated Canadian jazz pianist Oscar Peterson, recorded on his 75th birthday, Dr. McMurtry addressed the question of "What is Healthy Aging?" defining it as a "lifelong process of maximizing opportunities for physical, social and mental well-being". He then underscored the importance of taking a "determinants of health" approach to achieving healthy aging. This approach [1] recognizes that while access to quality health care is important, 11 other factors including gender, culture and one's biological and genetic endowment can have a profound effect on how we age. Among these, lifestyle has been the target of a number of health promotion programs and tools supported by Health Canada. *Canada's physical activity guide to healthy active living for older adults* is a tool that Dr. McMurtry drew specific attention to. [2]

He also reviewed a number of key Canadian documents that underpin the ideas and the policy framework outlined in the WHO publication, which Dr. Kalache had referred to. These included:
A new perspective on the health of Canadians (Lalonde, 1974)
Achieving health for all (Epp, 1986)
The Ottawa Charter for Health Promotion (WHO, 1986)
Strategies for Population Health (Health Canada, 1994)

[1] A listing of the 12 key determinants of health recognized by Health Canada can be found on the Health Canada website at http://www.hc-sc.gc.ca/hppb/phdd/docs/common/appendix_c.html

[2] The Guide and companion Handbook can be obtained by calling toll free to 1-888-334-9769 of by visiting Canada's Physical Activity Guide web site at www.paguide.com. The seniors' guide was developed by the Canadian Society for Exercise Physiology and Health Canada, in partnership with the Active Living Coalition for Older Adults, a community-based group representing 26 organizations from across Canada with an interest in healthy aging.

He noted “The Canadian approach to aging policy has reflected this history”, and that our *National Framework on Aging* (Minister of Public Works and Government of Canada, 1998) is based on the principles of independence, participation, fairness, dignity, and security – “Canada’s adaptation of the United Nations Principles on the human rights of older people.

The role and functions of the National Advisory Council on Aging was then described. Dr. McMurtry said that he was especially pleased that the Institute of Healthy Aging was named as one of the 13 founding institutes in the Canadian Institute of Health Research. He said that as Deputy Minister of Health he will ensure that research knowledge that emerges from its programs “is translated into sound policies and effective programs and practices that support healthy aging for Canadians”. He also recognized an obligation for Canada and other developed nations to assist developing countries in meeting the challenges of population aging through provision of money, technical assistance, knowledge transfer, support of international voluntary sector initiatives and the sharing of ideas.

He concluded his remarks, and the session, with a video and commentary about Canada Geese flying in formation, symbolic of the value added by collaboration across and between provincial, national and international boundaries and borders as we attempt to achieve healthy aging worldwide.

Acknowledgement
The strong and prolonged applause of the audience testified to their appreciation of this outstanding session. The 2001 World Congress of Gerontology Society, the corporate entity charged by the International Association of Gerontology with responsibility for organizing the Congress, and the Canadian Association of Gerontology as the host society, express their thanks to the speakers for sharing their experience and wisdom and to the Health Canada Population Health Fund for providing financial support for the session.

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