The Future of Aging: Interdisciplinary Research, Practice and Policy Partnerships

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Asked to talk about:

*Basis of presentation:*

- Tremendous diversity and variability in the aged population
- Not always reflected in the current language of research, policy and practice.

*Approach:*

1) Situate aging of Canada’s population within an international context to highlight complexity of research on aging

- Note implications of heterogeneity of aging populations for health services and systems
Approach...

2) Consider possibilities and challenges of interdisciplinary evidence-based research partnerships and collaborations:

- Multidisciplinary paradigms for thinking about aging
- Need for interdisciplinary research platforms, and practice and policy partnerships
- Benefits of creating linkages across existing projects and data systems
Understanding Aging & Old Age

• Canada’s population within an international context: Diversity and Variability:
  ▫ Aging in Global Context

• “Eye of the beholder”:
  ▫ Contrasting Images
  ▫ Competing Narratives

• Canada’s unique place
• By 2050, people over the age of 60 will comprise **22% of the world’s population**

• Over the next 30 years, the number of people over the age of 60 in Canada will **double**: 4.7 M → 10.9 M

# Worldwide Pace of Population Aging

(Number of years required/expected for ‘aged 65 and over’ to rise from 7 percent to 14 percent of population)

<table>
<thead>
<tr>
<th>Developed countries</th>
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<tbody>
<tr>
<td>Sweden (1890-1975)</td>
<td>Chile (1998-2025)</td>
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<tr>
<td>Australia (1938-2011)</td>
<td>China (2000-2026)</td>
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<td>United States (1944-2013)</td>
<td>Sri Lanka (2002-2026)</td>
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<tr>
<td>Canada (1944-2009)</td>
<td>Tunisia (2008-2032)</td>
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<td>United Kingdom (1930-1975)</td>
<td>Colombia (2017-2036)</td>
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<th>Year Range</th>
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<td>France</td>
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<tr>
<td>Sweden</td>
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<td>Singapore</td>
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<tr>
<td>South Korea</td>
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Source: Kinsella and Gist, 1995; and U.S. Census Bureau, International Data
Problematic notion of “60 or 65+”

• Homogenizes populations spanning 40+ years in age

• “The elderly” – at least two generations
  • 10% of those 65+ have a child 65+ (Canada; ↑ ?)

• Historically unprecedented: when 1960 cohort turned 50 in 2010, 60% had at least one parent alive

  • Young old, older old, ‘deep’ old age: differ in characteristics, expectations, health behaviours, beliefs
  • However, language of journals: “older adults”
Aging in Perspective: Percent Change in the World’s Population - 2005 to 2040

Source: United Nations Department of Economic and Social Affairs, 2007b
Population aged 80 years and over: World, 1950-2050 (Millions)

- 1950: 14.5
- 1975: 31.8
- 2009: 101.9
- 2025: 160.8
- 2050: 394.7
“The Elderly”: A Tale of Two Photos
Multiple realities of old age
Understanding ‘Deep Old Age’

• Few studies worldwide of aged 80+ and over

• Among ‘oldest’ or very old (BMC Geriatrics: Newcastle team)*
  • Diversity of capability at age 85+
  • Increasing longevity ≠ very high disability or dependency – “survivors” (but evidence that this is changing)

• Lessons learned from centenarians (Nir Barzilai, NYC)
  • Genetic and biomedical clues to longevity: Very high levels of HDL cholesterol

• Supercentenarians (age 110+); 34 verified in Canada

  • Europe’s FuturAGE Roadmap: oldest old: priority research topic

*http://www.biomedcentral.com/1471-2318/11/21
Helen Faith Reichert, 99, has three siblings over 90.

Walter Breuning at age 113

http://www.businessandleadership.com/marketing/item/29552-worlds-oldest-man-dies
Competing images of aging as apocalypse or achievement

• How do we focus on / plan for / think about a world characterized by these images?
So much for freedom 55 ...
Retirement now likely to occur at age 67 for Canadians

The future of aged care?

Guest Editorial from the Ottawa Citizen
Home care, not health care

Nurses give aged-care ultimatum
Understanding Aging: Contrasting Images

- Homogeneity (65+) vs. Heterogeneity (2+ generations)
- Disease by disease vs. Processes of aging
- High tech (equipment) vs. low tech (people/ time)
- Life expectancy vs. healthy life expectancy
- ‘One acute problem’ vs. multiple chronic conditions
- Older people as source of problem vs. source of solution
- Fantasy of ageless society vs. preparation for old age
- Population aging as apocalypse vs. societal achievement
Diverse Research Approaches:

- Life expectancy **vs.** healthy life expectancy
  - Health (disability-free life) expectancy as a population health indicator.
  - “Women get sick but men die”: female health expectancies shorter than male
  - Réseau Espérance de Vie en Santé (REVES): comparisons of 30 countries worldwide.

- Years from birth **vs.** years from death: what may be learned
Chronologic Age vs Biologic Age

“You have the healthy body of someone twice your age.”
Approaches to Aging: High vs. Low Technology

• The technology epidemic:
  • 2009: MRI scanners: 70% increase since 2004*
    • CT scanners: 36% increase since 2004.*

• Alberta Health:
  • 1994: 2,500 bone density tests*
  • 1996: 13,000 tests
  • 2000: 90,000 tests
  • 2600% increase over six years for procedure not proven to prevent osteoporotic fractures

• André Picard: “Not a silver tsunami, but a tsunami of more..” *Globe and Mail, Nov 11, 2010

*Moynihan, Cassels, Selling Sickness, 2005
The time and ‘tech’ of geriatric care...

- Geriatrician: “you must always examine the feet”... Feet can reveal the truth …’
- The danger... losing what she had...
- Single most serious threat was not the lung nodule or the back pain... It was falling...
- Death will come: pace of decline a key issue
  - Decline: early and precipitously, old age of enfeeblement and dependence
  - Gradual, preserving, for as long as possible, ability to control one’s life

Understanding Aging: Private Troubles vs. Public Issues

- *Private troubles*: reflect individual character and areas of social life of a person
- *Public Issues*: matters that transcend local environments of individual and limited range of one’s life
  - Values cherished by publics threatened
  - Cannot be defined only in terms of everyday environments of ordinary people
  - Often involve a crisis in institutional arrangements
  - Governments often present such public issues as private troubles: it is the fault of individuals, rather than an outcome of structural or political arrangements.

- C. Wright Mills, *The Sociological Imagination* 1959
Exhibit ‘A’: Mobility in Aging

- World Health Organization: “*mobility... is the best guarantee of retaining independence and being able to cope in old age.*”
- Mobility Impairment (Canada):
  - 13% over age 60; 30% over age 80
- Mobility link to morbidity & mortality (Canada):
  - 23,000 hip fractures annually
  - ~20% hip fracture patients die within one year
  - Less than 40% recover pre-fracture level mobility
- Huge advances: assistive devices, technologies
- Few advances: Age-supportive built environments
H. McKay, “Walk the Talk: Linking Research and Community on the Built Environment for Healthy Aging”, UBC.  www.hiphealth.ca
Exhibit ‘B’: Health Services Delivery

- Health Care System designed for single conditions:
  - “One problem at a time”
  - Not for complex mix of conditions
  - Focus on acute flare-ups, NOT monitoring and prevention

- Challenge: combination of interventions:
  - Co-morbidity: 68% of elderly: two+ chronic conditions
  - 67% direct health care costs on chronic conditions

- Promise of primary health care/ integrated systems
- ‘Scopes of practice’ of health care professionals
More Heterogeneity: Competing Narratives

• Wrath of the Boomers vs. Unprecedented societal opportunity

• No /limited pension plans vs. Unprecedented wealth in equity (“Boomers” control 55% of discretionary spending in Canada)

• Epidemic of dementia vs. Healthier than ever (“70 is the new 60”/50?)

• Rise in obesity-related illness and reduced life expectancy vs. Promise of technology, personalized medicine, biogerontology, epigenetics
Add to this ‘mix’ - for Canada:

- Ethno-cultural diversity of population:
  - Canada: 3 in 10 elders (29.8%) born elsewhere
  - Limited research – little knowledge of:
    - Accessibility of services
    - Appropriateness of services
    - Health practices, beliefs, behaviours
    - Implications of ‘aging in a foreign land’
- But, for Canada, protective effect of immigration (vs. Japan, Italy, etc)
The bridge between discovery and impact: Linking research, policy and practice

Central feature: collaboration & cooperation between and among researchers and stakeholders
Multi-, Inter-disciplinarity and Partnerships

- Why do it? Research and service imperatives
- Opportunities and Challenges
- Making it Happen: Enabling Understanding
- Engaging Partners and Stakeholders
Teamwork Imperatives

- Emphasis on teamwork involving multiple disciplines.
- Assumption: two+ disciplines more beneficial than one

- Multiple disciplinary approach emphasized in health research, health care services, health education, and health policy.

- Funding agencies often call for research that involves multiple disciplines: “...recognition that effective health research needs collective effort of many people and organizations committed to making Canadians healthier and building an effective health-care system”. (CIHR website)
The Good that Teams Do

• An interdisciplinary team is a **consistent** grouping of people from relevant disciplines; interactions guided by specific team functions and processes to achieve team-defined favourable outcomes.*

• **Provide different perspectives on a problem**
  
  Create comprehensive prospective theory-based hypothesis for research

• **Develop consensus clinical definitions and guidelines**
  
  for complex diseases and conditions

• **Provide comprehensive services such as health care and health education**

*Wiecha & Pollard, *J Med Internet Res* 2004 (emphasis mine)
Recommended Reading

• “Multidisciplinarity, interdisciplinarity and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness”.


• Choi: Senior Research Scientist, Centre for Chronic Disease Prevention and Control, Public Health Agency of Canada (PHAC)

• Pak: Associate Professor, Department of Public Health Sciences, University of Toronto, Toronto, Ontario
It’s all in a name...

- Multi-disciplinary, inter-disciplinary, and trans-disciplinary denote efforts that involve several disciplines
- Ambiguously defined and often used interchangeably
- Do they mean the same or different things?
- Is there more than one method to bring together people from different disciplines?
Terminological Quagmire*

• Discipline: a branch of knowledge, instruction, or learning

• Following meanings for the prefixes:
  ▫ \textit{Multi} - many; more than one.
  ▫ \textit{Inter} - among; between; mutual, mutually.
  ▫ \textit{Trans} - across; over; beyond; on the far side of; through

• Conclusion:
  ▫ All 3 terms rather poorly differentiated
  ▫ Definitions virtually interchangeable

*Leathard, 1994, in Choi & Pak, 2006
Proposed New Definitions

- *Multidisciplinarity* draws on knowledge from different disciplines but stays within the boundaries of those fields (NSERC, 2004).
- *Interdisciplinarity* analyzes, synthesizes and harmonizes links between disciplines into a coordinated and coherent whole (CIHR, 2005).
- *Transdisciplinarity* integrates the natural, social and health sciences in a humanities context, and in so doing transcends each of their traditional boundaries (Soskolne, 2000).
- When exact nature of multiple disciplinary effort unknown, general term “*multiple disciplinary*” used. Choi & Pak, 2006
Table 3. Views of Choi & Pak (2006) of multidisciplinary, interdisciplinary and transdisciplinary

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<th>Multidisciplinary</th>
<th>Interdisciplinary</th>
<th>Transdisciplinary</th>
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<td><strong>Keyword</strong></td>
<td>Additive</td>
<td>Interactive</td>
<td>Holistic</td>
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<tr>
<td><strong>Mathematical example</strong></td>
<td>2+2=4</td>
<td>2+2=5</td>
<td>2+2=yellow</td>
</tr>
<tr>
<td><strong>Food Example</strong></td>
<td>a salad bowl</td>
<td>a melting pot</td>
<td>a cake</td>
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Unanswered Questions: Later

• Are efforts to involve several disciplines really useful?

• Must we involve multiple disciplines in every project?

• What are the difficulties in carrying out these efforts?

• How can this approach be enhanced?

• Limited attempt to comprehensively resolve confusion of terminology
Lenses on Aging: Completely New Paradigms

• Aging *vs./and* disease: the research link?
  ▫ What do cancer, cardiovascular disease, diabetes, dementia – all have in common?

• Calls for “a new focus on research to promote healthy ageing, rather than simply treating the diseases of old age”...

• Instead of research dominated by ...conditions such as Alzheimer’s disease

• Recognition of “need to investigate the genetic and environmental (including health and lifestyle) factors that allow people to remain healthy and active into their eighties, nineties, and beyond”.

New science of aging...

• Royal Society (UK) task force: “new science of ageing”: broad-spectrum, preventive medicine for age-related disease. (Partridge et al., 2011)

• New fields of enquiry: epigenetics, biomarkers, role of inflammation in aging

• Emergence of geroscience:
  ▫ Aging - most important risk factor for human disease in developed countries

• Model:
  ▫ Buck Institute (California) - interdisciplinary interface of research on normal aging and aging diseases (NIH, ‘07)
Making it Happen: Enabling Understanding

• SPA: Summer Program in Aging (CIHR, IA)
  ▫ Exposure, introduction, awareness

• Collaborative work environments:
  ▫ NSCA: coming together around topics that foster multiple perspectives and inquiry
  ▫ *consistent* grouping of people from relevant disciplines

• Funding sources (eg., PHSI): Given time to develop partnerships and relationships
SPA: Across the Disciplines in Aging

- Pilot Grants
- Trainee Awards
- Trainee Events
- SPA (315 grads)

- Simon Fraser U (BC) 2012
- RQRV (Québec) 2011
- Alberta Centre on Aging 2010
- Nova Scotia Centre on Aging 2009
- U of T Centre on Aging (Ontario) 2008
- BC Network on Aging Research 2007
- FORMSAV (Québec) 2006
• Research – Policy Interface:
• *Evidence on Tap* (Process of linking to policy)
• *Partnerships for Health System Improvement*
  • Examples related to aging:
    • Integration of nurse practitioners in long term care
    • Access to end-of-life care for patients with life-threatening illness
    • Older adults' access to community support services: Service awareness and information sources
    • Care and Construction: Assessing Differences in Nursing Home Models of Care on Resident Quality of Life
Partnerships: Engaging Older People in Research

GREY MATTERS
A GUIDE TO COLLABORATIVE RESEARCH WITH SENIORS

Nancy Marlett and Claudia Emes
Older People as Researcher Collaborators

• Funded by CIHR Institute of Aging Pilot grant: tested methods of engaging older people as research collaborators.

• Nancy Marlett and Claudia Emes, U of Calgary (in collaboration with the Kerby Centre)
• Open access on U Calgary Press website
• Tool has two purposes:
  • for older people wanting to conduct research
  • for those aiming to involve older people in research collaborations
“Being involved after the research has been designed is like being invited to comment on the menu after the meal has been prepared”. (Grey Matters, 2010, p. 4)

Engaging older people in research design & conduct:
• Influence research agendas
• Manage research more effectively
• Change the role of seniors in policy development and service provision (Grey Matters, 2010, p.12)
The Gap between Research and Policy and Practice

• Consistent evidence of failure to translate research findings into clinical practice
  - 30-40% patients do not get treatments of proven effectiveness
  - 20–25% patients get care not needed or potentially harmful (Schuster, McGlynn, Brook, 1998; Grol R, 2001; Graham et al, 2006)

• Costs to health of Canadians:
  • Unnecessary research done
  • Important research not done
  • Duplication of effort
  • Inability to generalize to real world
Partnerships in Research and also in Policy and Practice

• Moving beyond *advocacy for* older people
to *partnerships with* older people
Advocacy to Partnership: Sweden Example

• Ryhov Hospital in Jönköping, Sweden:
  • Traditional hemodialysis and peritoneal dialysis center
  • In 2005: a patient, Christian, asked about doing it himself
  • Christian taught a 73-yr-old woman how to do it...
  • Together, they taught others how to do it.
  • Oldest person now on self-dialysis: 83 years old
  • Aim: 75% of patients on self-dialysis (currently have 60% of patients)

Source: Maureen Bisognano, Institute for Healthcare Improvement USA (Vancouver: CHSPR conference 2012)
Challenges and Opportunities:

• Ingrid (nurse): “I got the courage to change (after 40 years) because I saw the patients ‘lift up.’ I moved from being a technical expert to a coach.”

• Britt Mari (nurse): “The patients are our partners in designing the unit, buying equipment, teaching, and planning.”

• Elderly ‘patients’:
  • “I have a new definition of health.”
  • “I want to live a full life. I have more energy and am complete.”
  • “I learned and I taught the person next to me, and next to her. Of course the care is safer in my hands.”
"In Canada, and worldwide, the future is aging! The integrated focus of geroscience is rapidly advancing our understanding of the biological processes of aging. The Canadian Longitudinal Study on Aging will enhance knowledge of how biomedical factors (including genetics and epigenetics), along with clinical and behavioural factors, intersect with social, cultural and economic contexts to impact aging and advanced age. Optimizing health and health services for very elderly people will become national priorities”.

AMM, 2010
You *can* change the culture...

But the imperatives of aging sometimes lead to the unexpected....
“Easier Rider: extra wheel means ageing Angels can go the distance”. The London Times, 12.09.18
“Putin rides Harley Davidson “tricked out” trike at Ukrainian bike show”...

http://en.rian.ru/russia/20100724/159935326.html
The Future is Aging!
Thank You! Questions????

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Home Care project website:
http://nexushomecare.arts.ubc.ca/