Overview

- Why CLSA?
- Priority areas of research and policy
- CLSA as a scientific tool
- Potential Contributions of the CLSA
- Design of the CLSA
- What have we accomplished?
- What are we doing now?
- Next steps
Why CLSA?

• People living longer now than ever before

• By 2030, 20% of the Canadian & US population will be 65 and older

• Changing demographics identified as number one priority by the government of Canada and many of the provincial governments
## Population Totals in Canada by Age Group and Year

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**1991 Totals**: 13938100, 28117600, 14179500
Why CLSA?

• Baby boomers begin turning 65 in 2011
  – Different needs, expectations
  – Implications, challenges for health care system, social programs - ethical, financial, etc.

• Healthy Aging is an issue of greatest interest and importance to the Canadian public and to Canadian policy makers.

• Canada differs from other countries in such areas as health and social policy, health care delivery systems, climate, environment, geography, and retirement policy and pension programs.
Why CLSA?

- Our review identified around 70 longitudinal studies worldwide
  - Majority of these studies were studying people over the age of 65
  - Many of these 70 studies on aging collect lot of information on social factors or retirement but lack detailed information on health, especially clinical and biological measures or vice versa
Why CLSA?

• Very few studies have looked at the aging process from a mid-life to old age perspective

• Very few population-based studies that capture the changing individual within a changing context and incorporate multiple levels of inquiry, the cell, the individual and society

• Very few studies have focused on how individuals cope or adapt to changing circumstances and how it impacts their well-being
The Canadian Longitudinal Study on Aging (CLSA)

- One component of the Canadian Lifelong Health Initiative, a strategic initiative of CIHR
  - The Canadian National Birth Cohort
  - The Canadian Longitudinal Study on Aging (CLSA)
Aging Longitudinal study

Environmental influences
(e.g., rural, socio-economic, exercise, nutrition)

e.g., telomeres / oxidative stress
psychological & cognitive abilities
immune functions

Chronic diseases
diabetes, cancer, dementia
arthritis, cardio

Aging

Genetics

infections

Health Services Utilization

time

CLSA ELCV

Canadian Longitudinal Study on Aging
Étude Longitudinale Canadienne sur le Vieillissement
Life Course as a Framework

- Multiple contexts
- Health development as an adaptive process
- Track patterns over time
- Examine relationships between earlier factors and later outcomes
- Examine pathways, trajectories
- Quantitative traits
- Identify critical, sensitive periods in adult development
- Determine the relative contributions of multiple factors to the pathways, patterns and outcomes
Priority Areas for CLSA

• Cardiovascular
• Brain
• Musculoskeletal
• Respiratory
• Metabolic

• Psychosocial and behavioral environment
• Health and social care environment
• Economic environment
# Focus of Measurement

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<td>- Activities of daily living/disability/injuries</td>
<td>- Lifestyle/behaviours</td>
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<td>- Frailty/co-morbidities</td>
<td>- Social networks and social support</td>
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<td>- Chronic diseases</td>
<td>- Values and meaning</td>
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<td>- Cognitive function</td>
<td>- Everyday competence, adaptive functioning, coping</td>
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<td>- Mental Health</td>
<td>- Personality, emotion, psychopathology</td>
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<td>- Oral health</td>
<td>- Work to retirement transitions</td>
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<td>- Vision, hearing</td>
<td>- Structural inequalities</td>
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<td>- Medications</td>
<td>- Built environments/physical environment</td>
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<td>- Health Care Use</td>
<td>- Economics</td>
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<td>- Institutional care</td>
<td>- Healthy aging and well being</td>
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<td>- Genetics/Biomarkers</td>
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<tr>
<td>- Nutrition</td>
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CLSA As a Vehicle to Address Scientific Questions
Risk Factors

Macro
  e.g. built environment

Biological/Genetic
  e.g. inflammation, genes

Micro
  e.g. nutrition, disease

Adaptation

Health Care Use

Consequences

Disease
  e.g., CVD, Diabetes, cancer or Cognitive Impairment

Social
  e.g., social support, income inequality

Psychological
  e.g. distress, Personality, emotion

Successful Aging
  Being, Belonging, Becoming
CLSA As a Vehicle to Address Policy Questions
Examples

• What is the impact of health on work, retirement and post-retirement transition?

• What is the impact of public and private pensions on retirement/post retirement transitions?
Study Design

• 50,000 individuals
• 20 year follow-up
• Women and men aged 40 and over at baseline
  – Born between 1946 (59y) and 1964 (41y)
  – Inclusion of “pre” and “post” boomers
• Community dwelling at baseline
• Repeated assessment every 3 years
• Linkage to existing databases
The Data

• Questionnaires administered over the phone or in person to all 50,000

• Subgroup of 30,000 individuals selected to undergo in-depth “comprehensive” assessment over the course of the study
  – within a reachable distance of study sites that can support the data collection
  – able to “reassemble” the 50,000 to provide valid and reliable information on the full sample
Data collection: Basic

• Questionnaire data (50,000)
  – Telephone interviews
  – Common core of questions
    • Basic demographics, social, economic, nutrition, lifestyle

• Linkage to existing data bases (50,000)
  – Administrative: physician services, hospitalizations
  – Homecare, community services, mental health services
  – Mortality
  – Environmental, neighbourhood indicators

• Infrastructure
  – Computer assisted telephone interviews
  – Web based interviews
Data collection: Comprehensive

• Comprehensive assessment (30,000)
  – Additional questionnaire based information via in-person interviews
    • Social, behavioural, economic, nutrition, lifestyle
  – Clinical assessment
    • Medical, neuropsychological, physical measures
  – Blood and urine samples
    • Blood chemistry panel, biomarkers, genetics, genomics

• Infrastructure
  – 6 sites across the country with the capability of high volume throughput
Study Design
Accomplishments to date

• Established network of researchers
  – McMaster, McGill and Dalhousie
  – Support from 26 academic institutions across Canada
  – 180 co-investigators
    • 80 investigators played a major role in the content development
  – International Collaborations

• Statistics Canada, Health Canada, PHAC, HRSD

• Support from CIHR and its Institutes (IA)
Accomplishments to date

- Development of protocol
- Refinement of protocol
  - Mini protocols
  - Reframing of cohort design
- Ethical, Legal and Societal Issues
- Phase 1 feasibility studies
Ethical, Legal and Social Issues (ELSI)

ELSI Committee

- Lawyers
- Ethicists
- Philosophers
- Geneticists
- Epidemiologists
- Social scientists
- Privacy commissioner

Provides “arms length” advice

- Workshops
- Commissioned papers
- Expert panels to advise PIs on practical issues
CLSA Feasibility Studies
Participant Recruitment and Retention Studies

Study 1: Views of Canadians towards participation in a longitudinal, population-based study

Study 2: Test consent to release coordinates of participants in the CCHS

Study 3: Identification of the optimal consent process

Study 4: Identification of possible alternative sample frames

Study 5: Evaluation of tools to assess capacity to consent to observational research

Study 6: Development of optimal process for the baseline interview
Data Collection and Data Flow Studies

Study 7: Feasibility of proposed blood and urine sample collection/shipping/storage and analysis strategies

Study 8: Strategies to enhance data linkage with health care utilization data bases and disease registries

Study 9: Development and evaluation of disease identification algorithms

Study 10: Issues related to the return of clinical information to study participants and/or general practitioners

Study 11: Assessment of logistics of data collection methods data transfer and security
Timeline

November 2001
Planning Workshop and RFP launch

January 2002
Investigator Team Responds to RFP

October 2002 – December 2003
Protocol Development

March 2004
International Peer Review Site Visit

June 2004
Review of Development Phase Activities

July 2004 - March 2006
Revision of Protocol and CLSA Feasibility Studies
What’s next?
Phase 2: Identification and development of measurement tools

• Phase II proposal due March, 2006
  – Content related feasibility studies
  – Validity, reliability testing and translation of selected measures

• Launch Phase II studies in May, 2006
Canadian Foundation for Innovation

• Application to Canadian Foundation for Innovation (National Infrastructure Fund) due Feb. 15\textsuperscript{th}, 2006
  – Infrastructure for study coordination
  – Infrastructure for IT
  – Infrastructure for bio-sample storage
  – Infrastructure for data collection
  – Equipment (clinical, questionnaire, biological)
  – Space and renovations

• McMaster, Dalhousie, and McGill in partnership with 6 institutions across Canada
Future Milestones

• Phase III: March 2007 to March 2008
  – Pilot full protocol

• CLSA Launch: Fall 2008
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Integrated CLHI Platform

Common Infrastructure

Multigenerational Cohort

Aging Cohort

CLSA (n=50,000)

Grandparents (n=?)

Adult Children (n=?)

Children (n=?)

Add on Children’s Cohort (n=?)

Birth Cohort (CNBC)