





Understanding inequalities and inequities in health among older adults in Canada using the Canadian Longitudinal Study on Aging (CLSA)

Susan Kirkland, PhD

Yukiko Asada, PhD

Community Health and Epidemiology

Dalhousie University,

Halifax, Nova Scotia, Canada



Presentation to PAHO

December 6, 2017



Canadian Context: Demographic Trends



- Canadians are living longer and older people are making up a larger share of the population
- In 2000 1 in 8 Canadians (12%) were 65 or older; by 2036 1 in 4 (25%, 10M) will be over 65
- The first baby boomers turned 65 in 2011
- Fastest growing segment is aged 80+
- Total health and social care expenditures exceed \$300 billion
- Healthcare alone is \$211 billion, the largest expenditure item in provincial budgets

Canada's changing population structure

THE GLOBE AND MAIL 



Canada shows its age as seniors outnumber children for first time

ERIC ANDREW-GEE

The Globe and Mail

Published Tuesday, Sep. 29, 2015 9:50PM EDT

Last updated Wednesday, Sep. 30, 2015 8:07AM EDT

The Canadian Longitudinal Study on Aging (CLSA)



- Strategic initiative of CIHR; on Canadian research agenda since 2001
- Team of 3 principal investigators, more than 160 co-investigators from 26 institutions
- Multidisciplinary - biology, genetics, medicine, psychology, sociology, demography, nursing, economics, epidemiology, nutrition, health services
- Largest study of its kind to date in Canada for breadth and depth: following 50,000 Canadians for 20 years

Overall Aims of the CLSA



- To examine aging as a dynamic process
- To investigate the inter-relationship among intrinsic and extrinsic factors from mid life to older age
- To capture the transitions, trajectories and profiles of aging
- To provide infrastructure and build capacity for state-of-the-art, interdisciplinary, population based research and evidenced-based decision making

CLSA Design Overview

50,000 women and men aged 45 – 85 community dwelling at baseline

**Tracking (20,000)
Randomly selected
10 provinces**

**Comprehensive (30,000)
Randomly selected
25-50 km of 11 sites in 7 provinces**

Questionnaire
• By telephone (CATI)

Questionnaire
• In person, in home (CAPI)

**Physical Assessments
Blood, Urine**
• At Data Collection Site

20 year study: Full follow up every 3 years, maintaining contact in between

Data Linkage



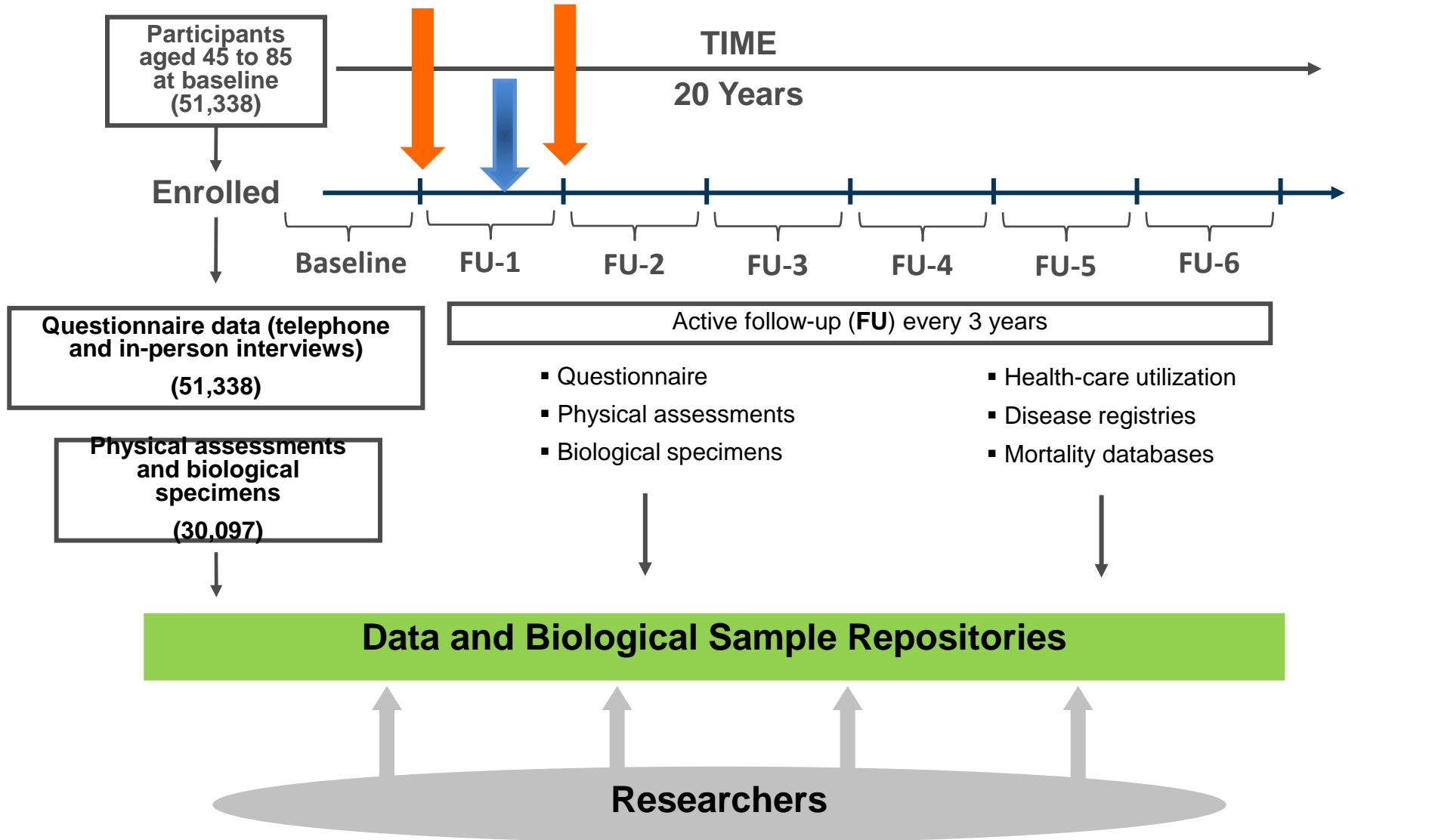
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2010 - 2015

2015

2018

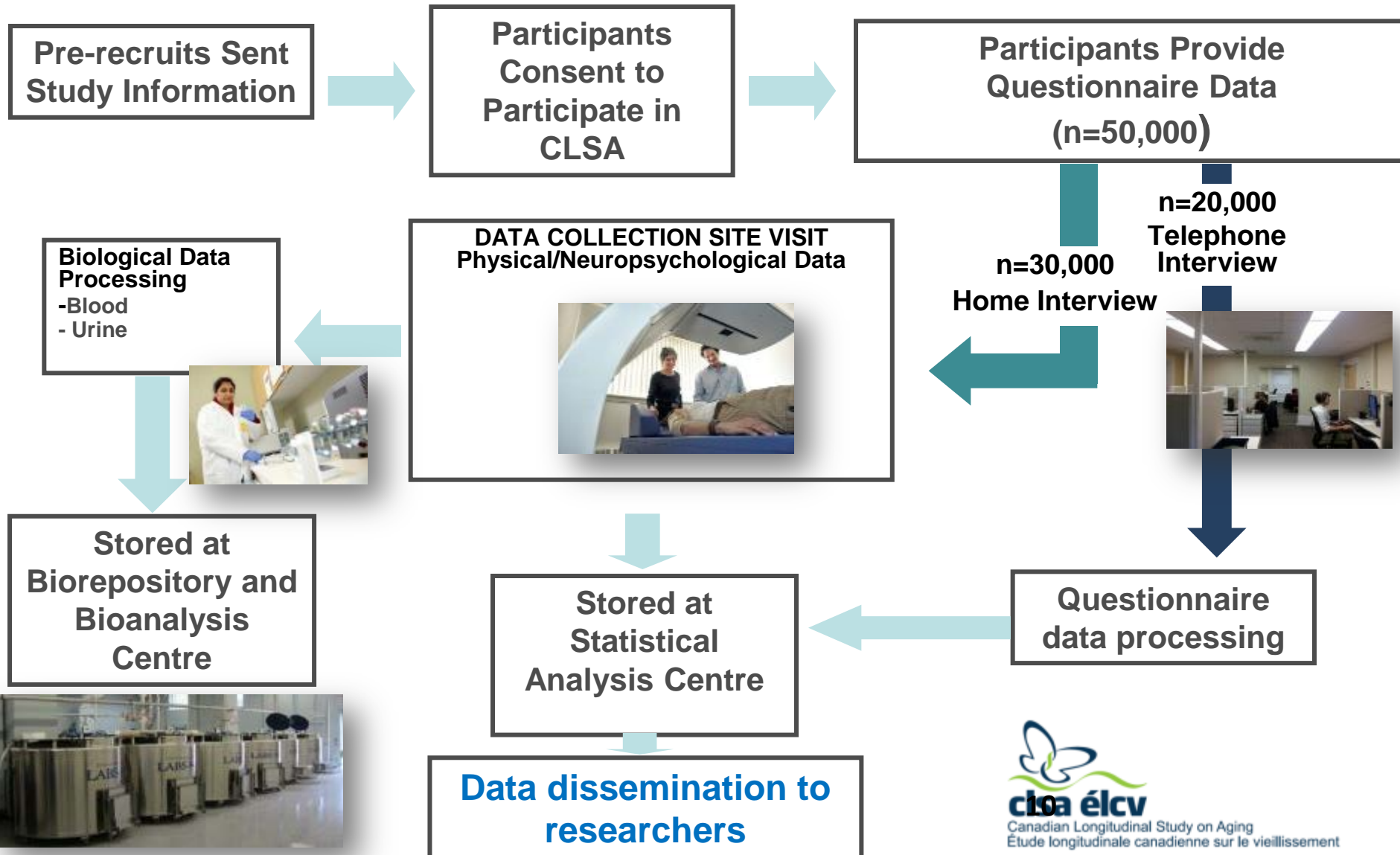
CLSA Overview



National Scope Representative Sampling Frame



Innovative Electronic Data Capture

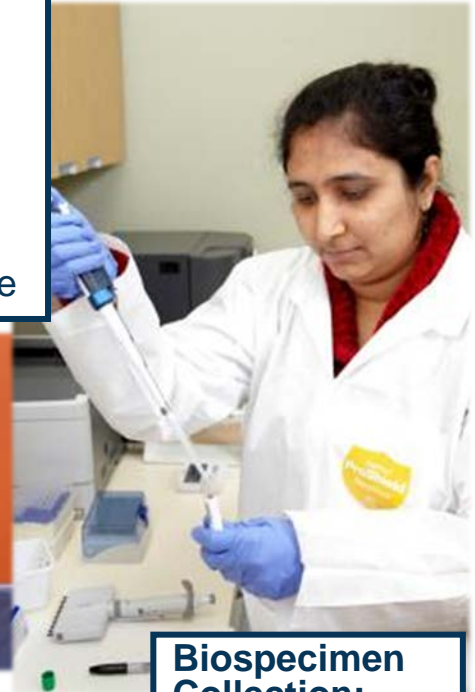
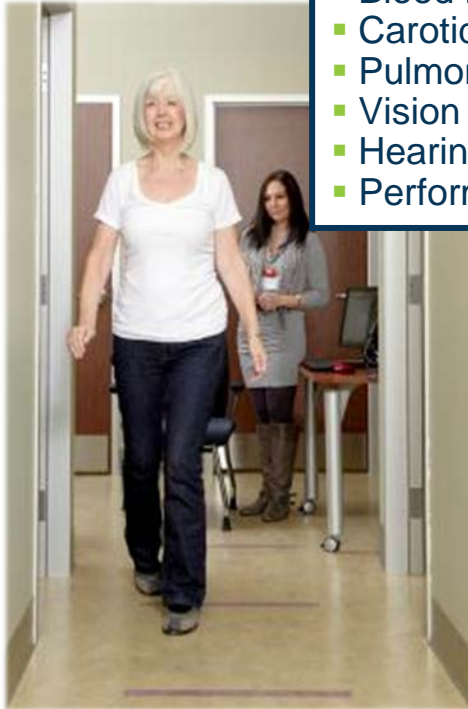


CLSA Data Collection

Data Collection Site

Physical Assessments:

- Height, Weight, BMI
- Bone Density, Body Composition, Aortic Calcification
- Blood Pressure, ECG
- Carotid Intimal-Medial Thickness
- Pulmonary Function
- Vision (acuity, ocular pressure, fundus photograph)
- Hearing
- Performance: Timed up and go, chair rise, 4m walk, balance



Biospecimen Collection:

- Blood
- Urine

Cognitive Assessments:

Neuropsychological Battery

- Memory: ReyAVLT
- Executive function: MAT, PMT, Stroop, FAS, AN
- Psychomotor speed: Choice Reaction time

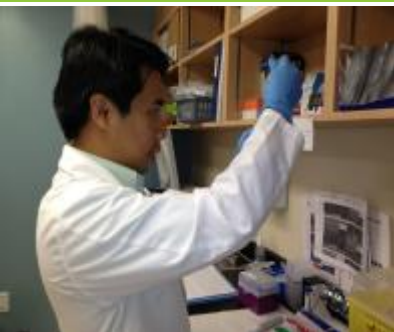


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Depth and Breadth of CLSA Baseline Questionnaire modules



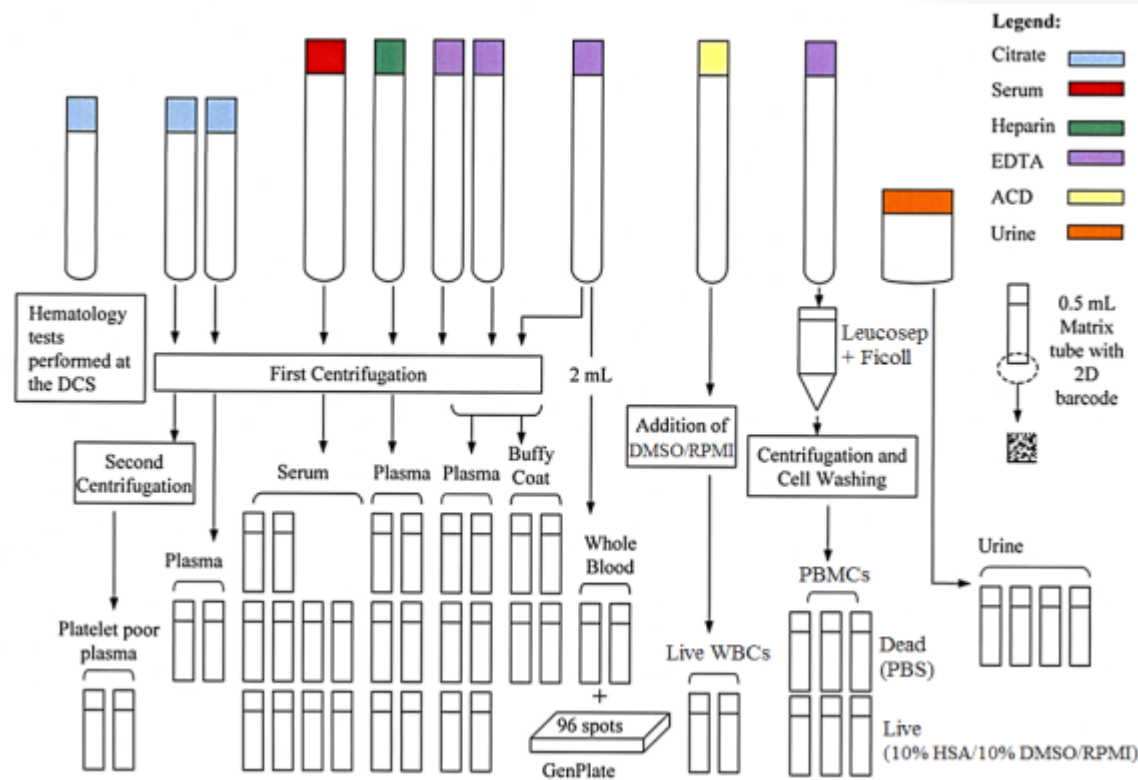
- **DEMOGRAPHIC**
 - Education
 - Marital status
 - Ethnicity
- **HEALTH BEHAVIOURS**
 - Smoking, alcohol
 - Nutritional risk
 - Food frequency
 - Physical activity
 - Health care utilization
 - Medication use
 - Supplement use
- **HEALTH STATUS**
 - General health
 - Women's health
 - Chronic conditions, symptoms
- Oral health
- **PHYSICAL**
 - Injuries, falls
 - Mobility
 - Pain, discomfort
 - Functional status
 - ADL, IADL
- **PSYCHOLOGICAL**
 - Cognition—Executive function, memory, psychomotor speed
 - Depression
 - Mood
 - Psychological distress
 - Veteran identifier
 - Satisfaction with life
 - PTSD
- **SOCIAL**
 - Social networks
 - Social support
 - Social participation
 - Online communication
 - Social inequality
 - Care receiving
 - Care giving
 - Retirement status
 - Labour force participation
 - Retirement planning
 - Transportation
 - Mobility, Migration
 - Built environments
 - Home ownership



Bio specimen processing 42 aliquots per participant

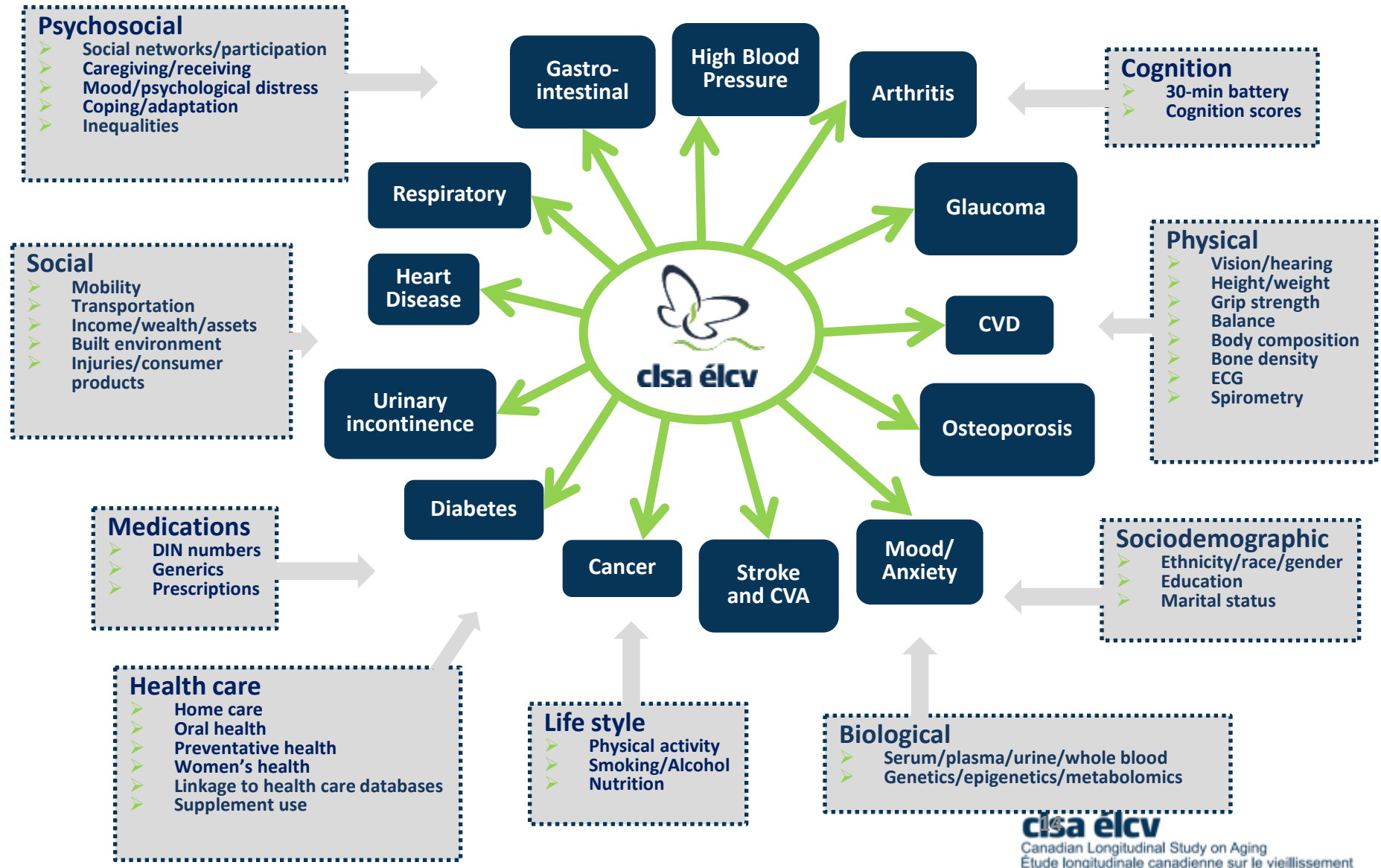


- Basic hematologic tests done on site
- Remainder processed, frozen within 2 hours
- Shipped weekly
- Stored in Nitrogen tanks at BBC McMaster



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Wealth of information available in the CLSA

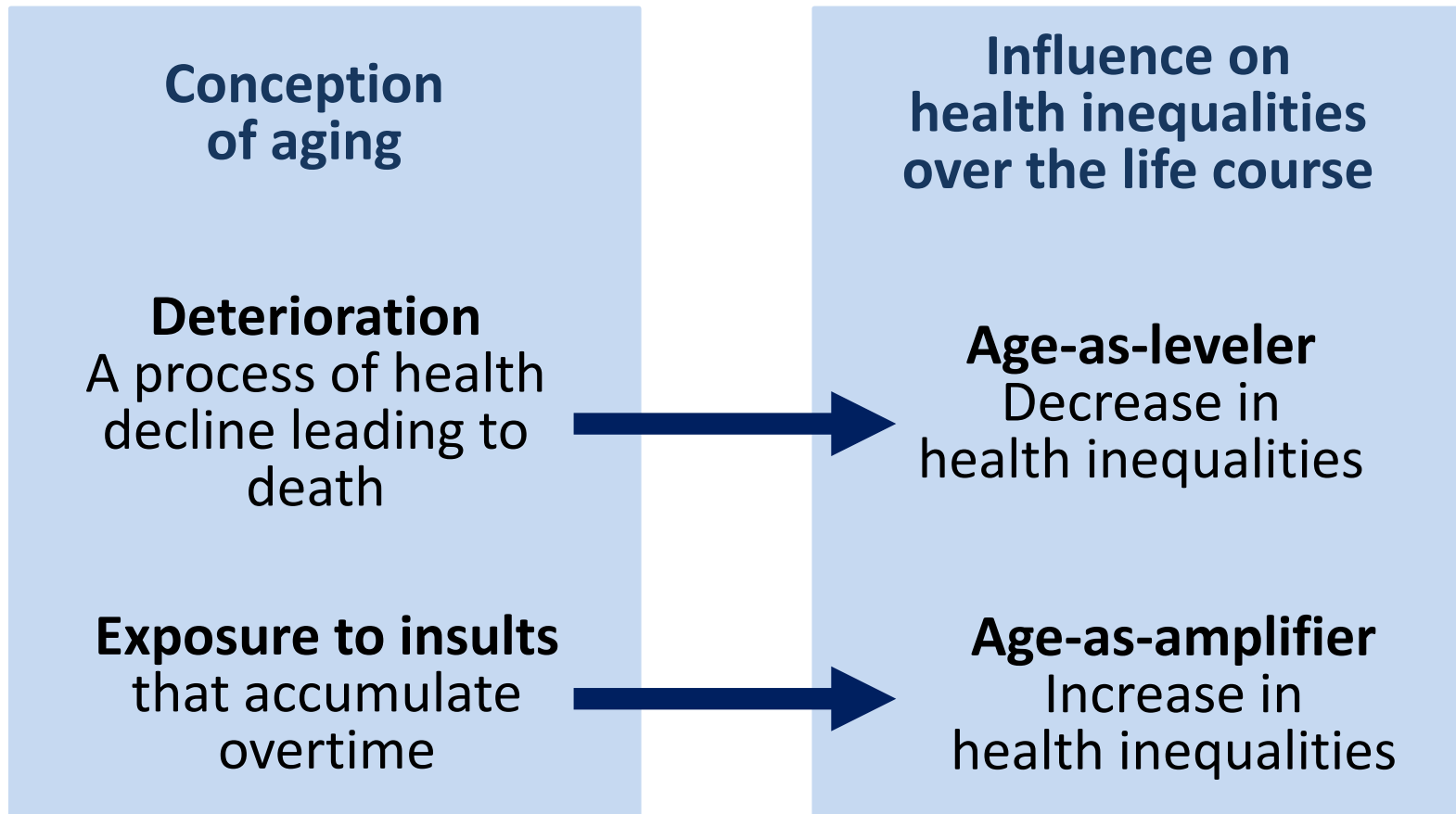


Successful aging and health inequalities and inequities

- Successful aging
 - Health: an essential component
- Successful aging from a population perspective
 - Good overall level of health
 - Fair distribution of health
- A key indicator of successful aging
 - How health inequalities (differences) and inequities (unfair differences) change over the life course

Aging influence on health inequalities

Chronological age \nmid aging



CLSA's potential for health inequality and inequity studies

- Multiple health outcome measures
 - Allow investigation on inequalities and inequities in different aspects of health and wellbeing
 - Magnitudes of inequality and inequity and their age-related dynamics differ across the Health Utilities Index, the frailty index, grip strength, and cognition
- Rich determinant of health measures
 - Enable investigation of multiple inequity domains at once, using a broad equity framework
 - Different definitions of inequity may have limited impact in empirical results, more important question:
Is unexplained inequality fair or unfair?

CLSA's potential for health inequality and inequity studies, cont.

- Comparability to other health and aging studies
 - Allows international comparison
 - Examples: Survey of Health, Ageing and Retirement in Europe (SHARE), Japanese Study of Aging and Retirement (JSTAR)
- Longitudinal nature
 - Potential to tease out different conceptions of aging and their influence on health inequalities and inequities

www.clsa-elcv.ca



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CLSA Research Team

Principal Investigators, Site Investigators,
Working Group Leads, Key Co-investigators

UVic: Debra Sheets, Lynne Young, Holly Tuokko

UBC: Teresa Liu-Ambrose, Michael Kobor

SFU: Andrew Wister, Scott Lear

UCalgary: David Hogan, Marc Poulin, Eric Smith, Alex Chin, Hossein Sadrzadeh

UManitoba: Verena Menec, Phil St. John

McMaster: Parminder Raina, Cynthia Balion, Lauren Griffith, Andrew Costa, Harry Shannon, Christopher Patterson, Michael Veall, Guillaume Paré, Brenda Vrkljan

UOttawa: Vanessa Taler, Larry Chambers

McGill: Christina Wolfson, Ron Postuma, Brent Richards, Mark Lathrop

USherbrooke: Hélène Payette, Benoît Cossette

Dalhousie: Susan Kirkland, Yukiko Asada

Memorial: Gerry Mugford

UToronto: Andrew Paterson

UWaterloo: Mark Oremus, Mary Thompson, Changbao Wu

Eindhoven University of Technology: Edwin van den Heuvel

+ Scientific working group members and co-investigators

CLSA Funders and Partners



Veterans Affairs
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Health PEI



The CLSA is funded by the Government of Canada through CIHR and CFI, and provincial governments and universities



Susan.Kirkland@dal.ca

Yukiko.Asada@dal.ca

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