Canadian Longitudinal Study on Aging: An Update

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CLSA Web Seminar

January, 2012

CLSA CORE TEAM

Lead PI	Parminder Raina **(McMaster)**
CO-PI	Christina Wolfson **(McGill)** and Susan Kirkland **(Dalhousie)**
Key Senior Co-Invest	Gerry Mugford **(Memorial)**, Helene Payette **(Sherbrooke)**, Ron Postuma and Isabel Fortier **(McGill)**, Larry Chambers and Venessa Taller **(Ottawa)**, Harry Shannon, Cynthia Balion, Christopher Patterson, Lauren Griffith and Mark Oremus **(McMaster)**, Marry Thompson and Chang Bo **(Waterloo)**,Margaret Penning, Holly Tuokko, **(Victoria)**, Verena Menec and Bill Lesley **(Manitoba)**, David Hogan **(Calgary)** , Max Cynader, Michael Hayden and Michael Kobor **(UBC)** and Andrew Wister **(SFU),**
Scientific Working Group	**See Our Website**

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The Canadian Longitudinal Study on Aging (CLSA)

- A key strategic initiative of CIHR
  - The Canadian Longitudinal Study on Aging

- More than 160 researchers - 26 institutions

- Multidisciplinary - biology, genetics, medicine, psychology, sociology, demography, economics, epidemiology, nursing, nutrition, health services, biostatistics, population health

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CLSA- The Concept

The Vision

A research platform - - infrastructure to enable state-of-the-art interdisciplinary population based *research* and *evidenced-based* decision making.
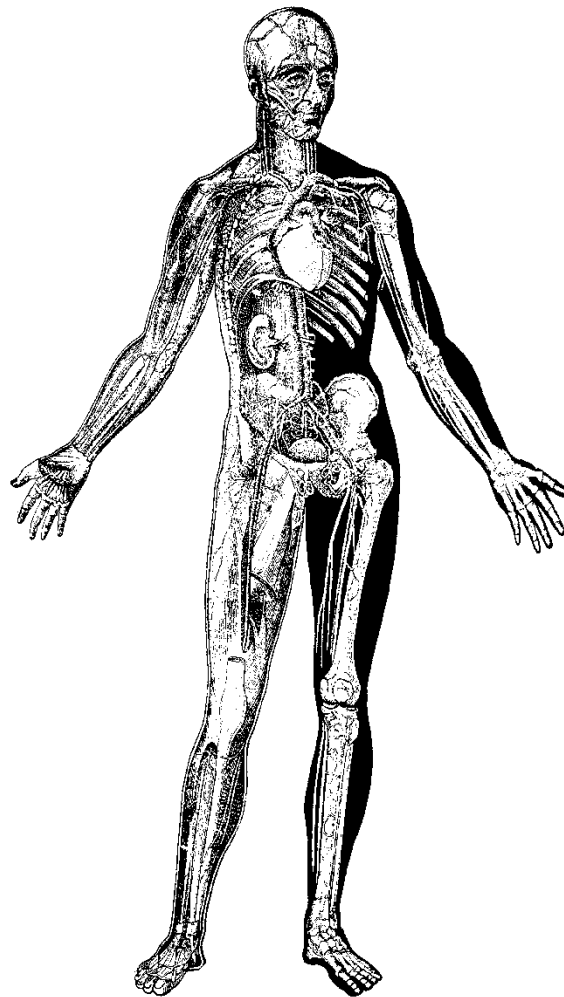
The Aim

To study aging as a dynamic process and the inter-relationship among intrinsic and extrinsic factors from mid life to older age.

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Innovation - Cell to Society

- Mid life to old age
- Quantitative traits
  - Physical
  - Social
  - Psychological
- Gene-environment interactions
- Disease, disability, psychosocial consequences
- Adaptation

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Overall Aims of the CLSA

- The progression of **health** from middle-age to early old age to older old age

- The determinants of **well-being and quality of life**

- Risk Factors (including genetics) of **Chronic diseases**

- **Cognitive functioning** and **mental health**

- **Disability** and the compression of morbidity

- The examination of socioeconomic and health **inequalities** in an aging population

- **Social participation, social relationships and care giving** in an aging population

- **Retirement** and **post retirement** labor market activity

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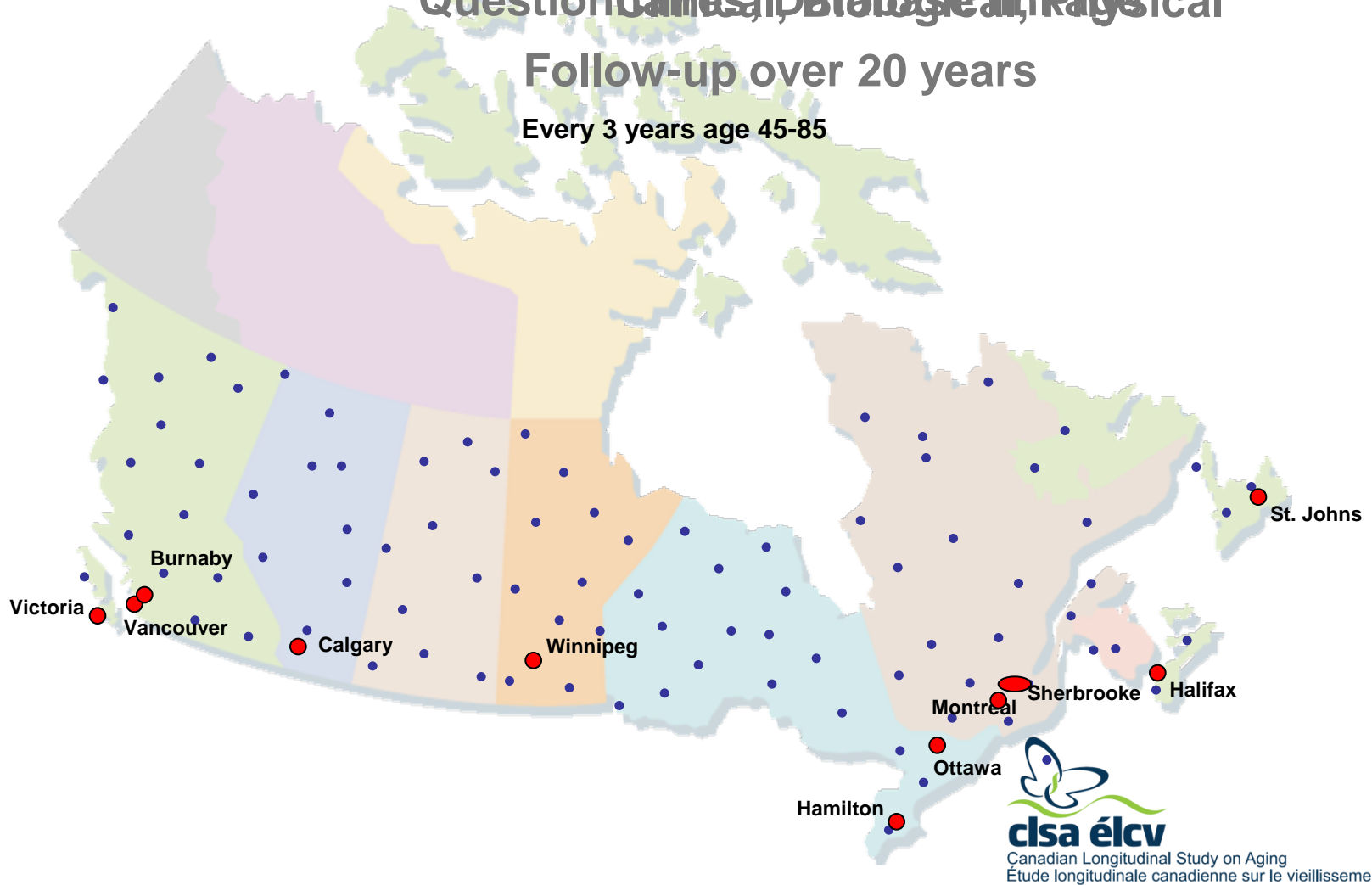Canadian Longitudinal Study on Aging
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CLSA Architecture

Inception Cohort n=50,000 (at 11 sites)

Questionnaire, Clinical, Biological, Physical

Follow-up over 20 years

Every 3 years age 45-85

Victoria
Vancouver
Burnaby
Calgary
Winnipeg
Hamilton
Ottawa
Montreal
Sherbrooke
Halifax
St. Johns

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Depth and Breadth of CLSA

PHYSICAL & COGNITIVE MEASUREMENTS

- Height, Weight
- Waist and hip measurements
- Bioimpedence
- Arterial pressure
- Mean heart rate
- Grip strength, timed up-and-go, chair raise, 4-m walk
- Standing balance
- Vision
- Hearing
- Spirometry
- Bone density
- Aortic calcification
- ECG
- Carotid intima-media thickness
- Cognitive Assessment

HEALTH INFORMATION

- Chronic disease symptoms (11 chronic conditions)
- Medication intake & Compliance
- Women's health
- Self reported Health service use
- Oral health
- Preventative Health
- Administrative data Linkage Health Services & Drugs
- Other Administrative Data bases

PSYCHOSOCIAL

- Social participation
- Social networks and support
- Care giving and Care receiving
- Mood, Psychological distress
- Coping, Adaptation
- Work to retirement transitions
- Job-Demand/Effort Reward
- Retirement Planning
- Social Inequalities
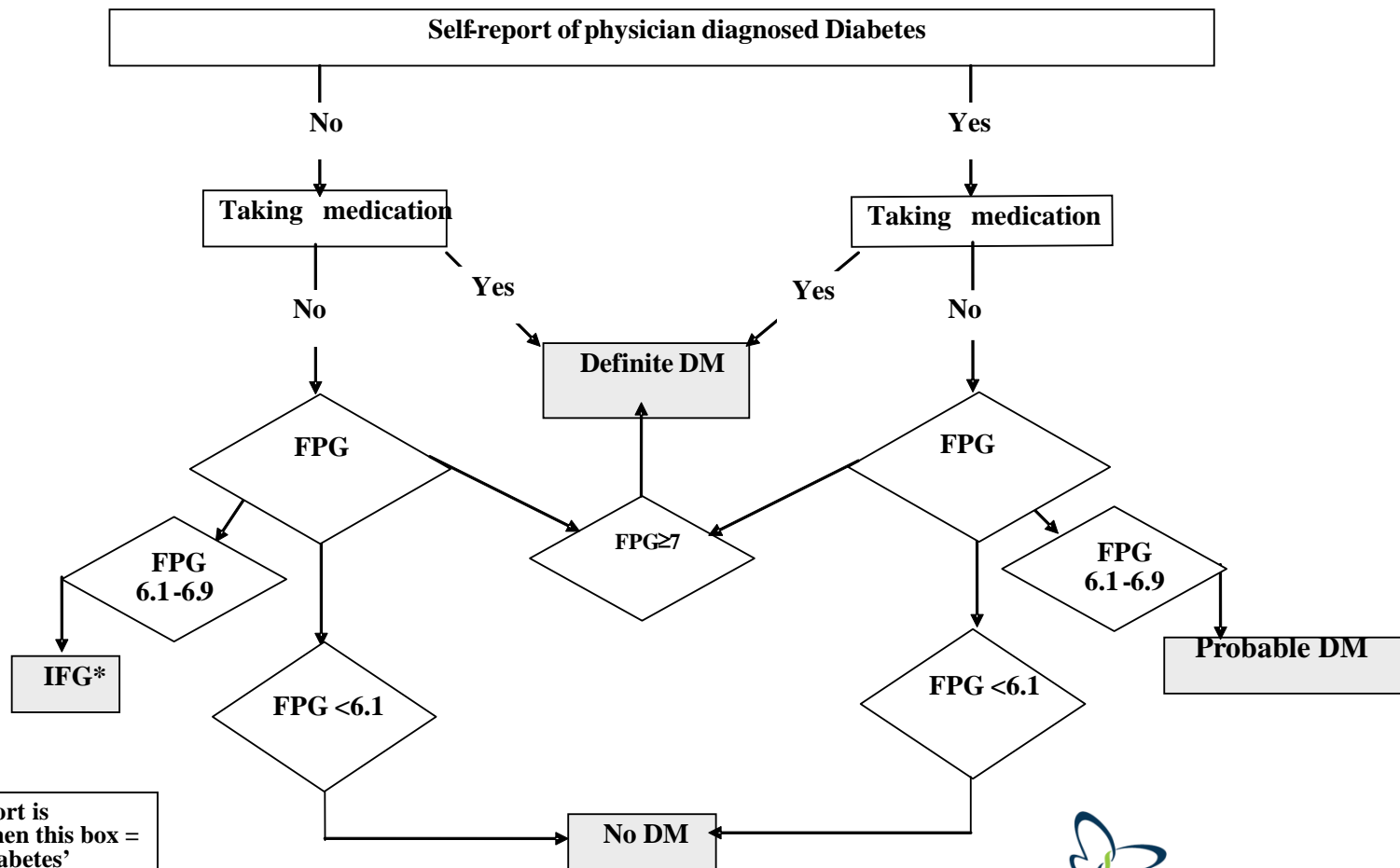- Mobility-Lifespace
- Built Environments
- Wealth

LIFESTYLE & SOCIODEMOGRAPHIC

- Smoking
- Alcohol consumption
- Physical activity
- Nutrition
- Birth location
- Ethnicity/Race/Gender
- Marital status
- Education
- Income

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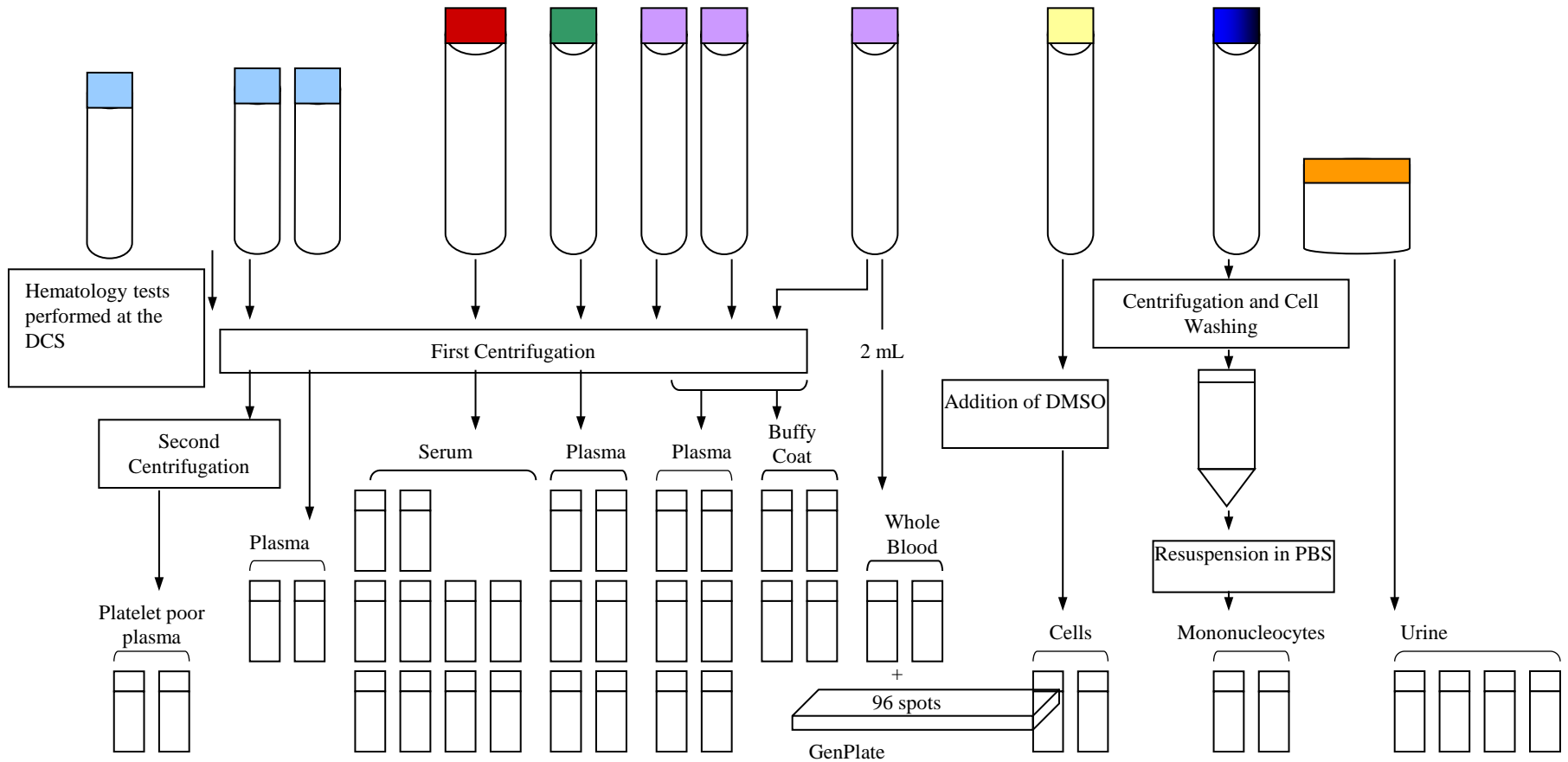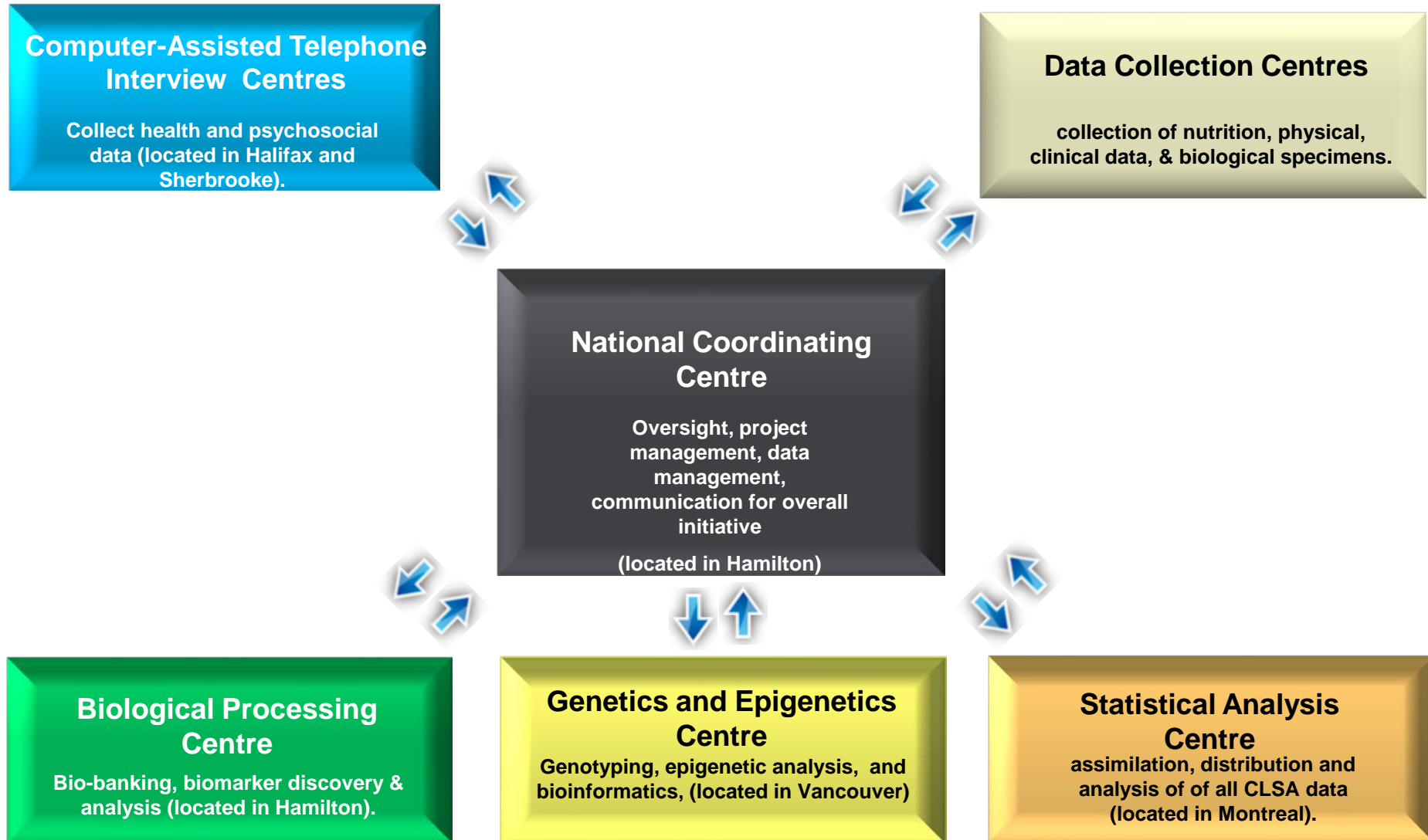Étude longitudinale canadienne sur le vieillissement

Diabetes Algorithm

Biological Samples

(50 ml Blood; Urine)

Equipment and Infrastructure Supporting Research on Aging

Computer-Assisted Telephone Interview Centres

Collect health and psychosocial data (located in Halifax and Sherbrooke).

Data Collection Centres

collection of nutrition, physical, clinical data, & biological specimens.

National Coordinating Centre

Oversight, project management, data management, communication for overall initiative

(located in Hamilton)

Biological Processing Centre

Bio-banking, biomarker discovery & analysis (located in Hamilton).

Genetics and Epigenetics Centre

Genotyping, epigenetic analysis, and bioinformatics, (located in Vancouver)

Statistical Analysis Centre

assimilation, distribution and analysis of of all CLSA data (located in Montreal).

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CFI Infrastructure

- All DCS sites are ready except for Manitoba (spring, 2012) and UBC end of 2013)

- CATI sites are ready

- NCC and Bio-repository are ready

- Biomarker laboratory (March 2012)

- Almost all of the equipment is either purchased or orders have been placed.

Data Collection Overview

Potential Participants Sent Study Information

Participants Consent to Participate in CLSA

Participants Provide Questionnaire Data (n=50,000)

Physical/Psychological Data
- **Neuropsychological Battery**
- **Performance Testing**
- **Anthropometric Measures**
- **Full body Bone Density**
- **Aortic Calcification**
- **ECG**
- **Carotid Intimal-Medial Thickness**
- **Pulmonary Function**
- **Vision and Hearing**

Biological Data
- **Blood**
- **Urine**

n=30,000

Home Interview

n=20,000

Telephone interview

Stored in Biobank (BBC) and Biomarker analysis

Stored in (NCC/SAC)

Questionnaire Data Processed

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Study Implementation Update

- Tracking Cohort
- And
- Comprehensive Cohort

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CLSA Pilot

- Conducted a pilot of our full 60 minute telephone interview (Tracking)

- Conducted a pilot of our maintaining contact telephone interview (all)

- Pilot of home interview (comprehensive)
  - Hamilton and Montreal (completed)

- Pilot of DCS visit
  - Hamilton completed (January 2012)
  - Montreal is in progress
  - Almost all SOPs/training modules are ready
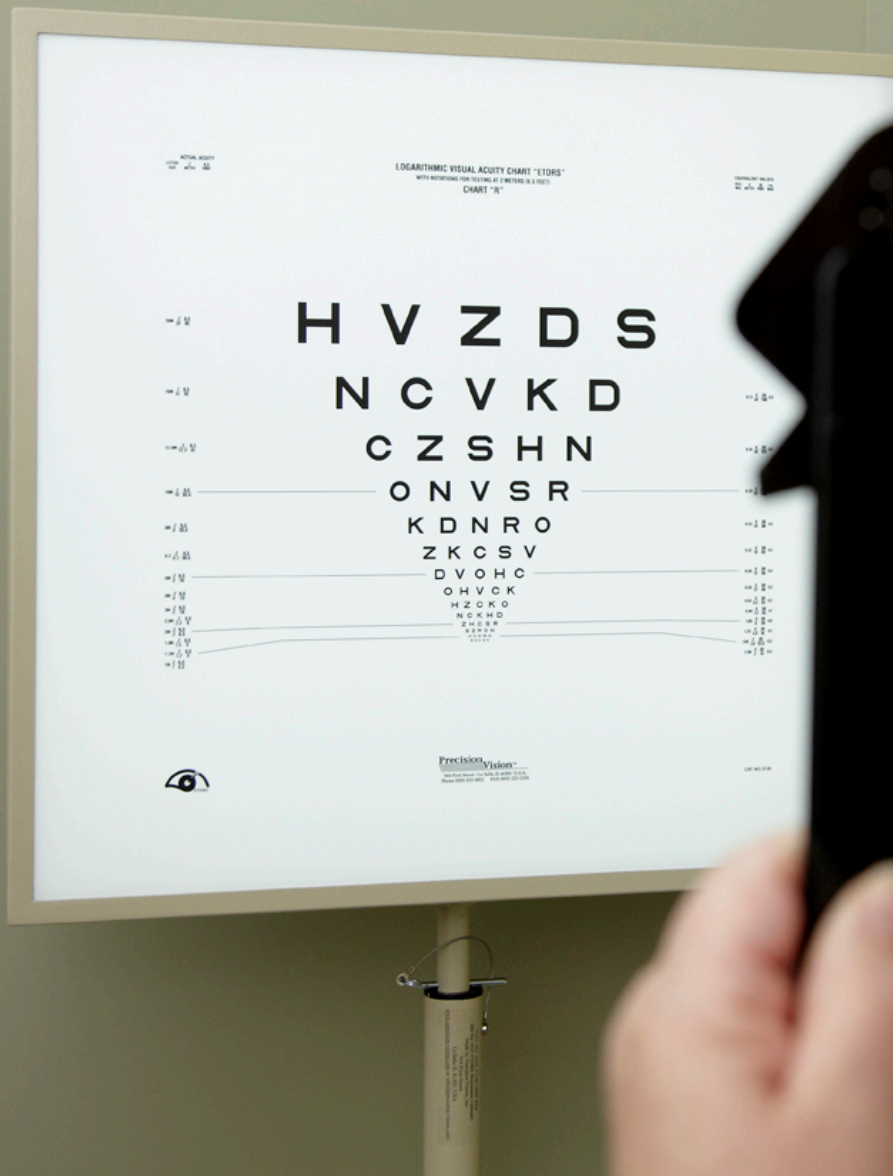
Implementation Plans for Tracking Cohort of the CLSA (n=20,000)

Launch of the CLSA

- First selection of 20,000 started in late 2008 in collaboration with Statistics Canada CCHS Healthy Aging module (Tracking Cohort)
  - Approximately 10,000 agreed to release their names to CLSA
  - Approximately 22,000 agreed to release their data
- Remaining sample for Tracking Cohort are being recruited currently
  - Provincial Health Registration Databases and RDD
- Recruitment of 30,000 began in January 2012 (Comprehensive Cohort)
  - Provincial Health Registration Databases and RDD

Participant Recruitment Phase I

- **Tracking Cohort**
  - From CCHS 4.2 participants
  - 5, 024 Interviews completed to date

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Re-Launch of CATI Sites: Phase II

- Contacting CLSA 4,991 participants to complete 60 minute questionnaire
  - Started in August, 2011

- New recruitment for Tracking and Comprehensive
  - New Brunswick, PEI, Manitoba, Ontario, NS, Saskatchewan, Newfoundland
  - Quebec and BC (pending approval)
  - Alberta (RDD)

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Implementation Plans for Comprehensive Cohort of the CLSA (n=30,000)

Implementation Plan for the Comprehensive Cohort (n=30,000)

❖ Cohort of 30,000 persons to be recruited within 25 km radius of 11 data collection sites (DCS)

- Victoria (3000), Vancouver (1500), Burnaby (1500),Calgary (3000), Winnipeg (3000), Hamilton (3000), Ottawa (3000), Montreal (3000), Sherbrooke (3000), Halifax (3000), St. John's (3000)

Comprehensive Cohort Rolling Recruitment

❖ First batch of 1000 people to be recruited/site (Feb-2012 to Feb-2013)

    ❖Maintaining contact by phone (end of 2013- end 2014)

❖ Second batch of 1000 people to be recruited/site (Feb-2013 to Feb-2014)

    ❖Maintaining contact: (End of 2014-end of 2015)

❖ Third batch of 1000 people to be recruited/site (Feb-2014 to Feb-2015)

    ❖Maintaining contact: (end of 2015-end of 2016)

Wave 2 (first follow-up) of the CLSA

- Renewal application will be submitted by June 2013
- Funding will be approved by March 2014
- Contracts resigned between April, 2014 to May, 2014
- Development and implementation of the follow up questionnaire and other measures will be done between Mid-2014 and Early 2015
- Pilot for the follow up will be done in the spring of 2015
- Second wave will begin in mid-2015

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Consumer Product Related Senior Falls and Injury Module

PHAC/CLSA Collaboration

Objectives

▶ **Burden of Injuries from consumer products**

▶ **Examine relationship between consumer products and falls related injuries**

▶ **Inform public health policy to improve the design of the consumer products to prevent fall related injuries**

Administration of the Falls and Injury Module

Comprehensive Cohort (n=30,000)
- Baseline In-home questionnaire (face to face)
- Maintaining contact questionnaire (telephone admin)

Tracking Cohort (n=20,000)
- Baseline questionnaire (telephone admin)
- Maintaining contact questionnaire (telephone admin)

Neurological Diseases and CLSA

PHAC/CLSA Collaboration

Objective

- Estimate prevalence and incidence of the target conditions

- Examine putative risk factors for the conditions

- Impact of these conditions on the individual, family, caregivers, and healthcare system

Veterans Health Initiative in CLSA

Veterans Affairs Canada and CLSA Collaboration

Current Analysis of CCHS/CLSA data

- Current collaboration with PHAC on the analysis of the falls data

- Comparison of HUI-cognitive measure with short neuropsychological battery in CCHS

- Role of key co-morbid conditions on the functional health status of the aging population
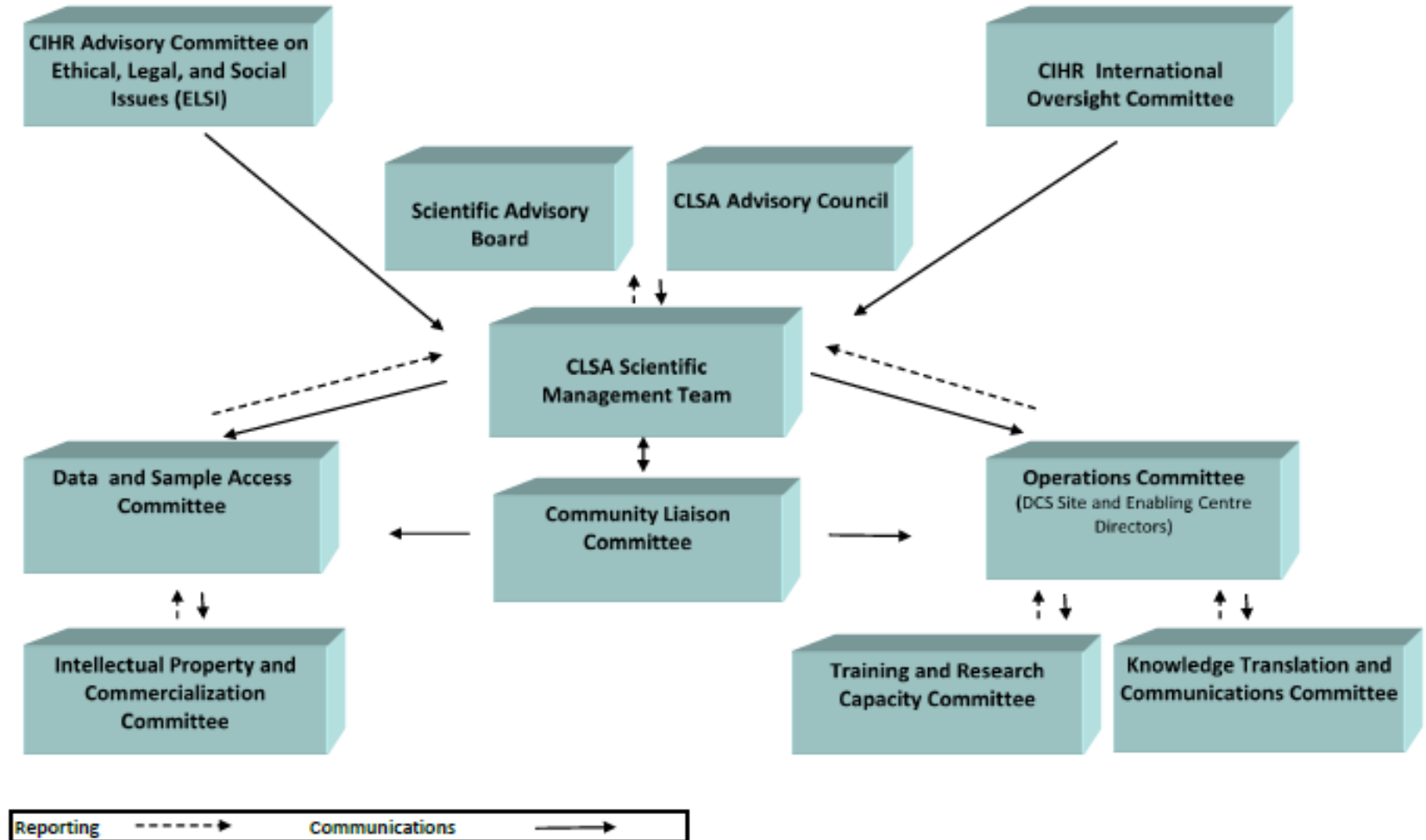
Other Key Milestones Achieved

- National coordinated REB approval process-first in Canada

- provincial data stewards and privacy officers beginning to implement a coordinated data linkage plan for large longitudinal platforms

- Developed open source software for data capture-minimal manual data entry and available for free to use

  - Sabertooth, Mastedon, ONYX, OPEL, and few more in the pipeline including LIMS

- Developed a comprehensive Privacy and Confidentiality Policy

- Data and Sample Access Principles and Policies

- Intellectual Property Policy

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Data and Sample Access

- Principles and Policies created
  - Applications forms drafted
  - Data sharing agreements drafted
  - Reviewed by ELSI and CIHR

- Ancillary Studies (Studies that require additional data collection)
  - No ancillary studies possible until recruitment and baseline wave is completed
  - Applications accepted in mid 2012

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CLSA Governance and Management

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Canadian Investment

$50M+ Canadian investment in national platform

- $27.25M CIHR for 5 Years (operational)
  - PHAC, Veterans Affairs and OMHLTC

- $10M CFI for 5 Years

- $10M Provinces for 5 Years

- $6.5 M Universities and other partners**

- Substantial in-kind contribution from Statistics Canada and Provinces towards recruitment

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