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# Sampling and Recruitment in the CLSA

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# Relevance

- Sampling underlies our ability to provide reliable estimates using the CLSA data
- We will need to use weights to estimate parameters (means, proportions, etc) for the target population
- Weights involve:
  - Calculating probability of selecting sampling unit (in CLSA, unit = person)
  - Accounting for different sampling frames
  - Allowing for non-response

# Aims of sampling in CLSA

- Choose representative sample of eligible Canadians
  - 20K Tracking cohort; 30K Comprehensive cohort
  - Specified numbers in age-sex groups by province

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# Potential Sampling Frames

- Canadian Community Health Survey Participants

- Provincial Health Registration Databases

- Random Digit Dialling

## ALL OF THE ABOVE

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| Sampling Frame: CCHS, provincial health registration databases, and RDD | Sampling Frame: provincial health registration databases, and RDD |
|---|---|

↓ | ↓

| CLSA Tracking (n=20,000) | CLSA Comprehensive (n=30,000) |
|---|---|

| 45-54 | 55-64 | 65-74 | 75-85 | | 45-54 | 55-64 | 65-74 | 75-85 |
|---|---|---|---|---|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ | | ↓ | ↓ | ↓ | ↓ |
| 6,000 | 6,000 | 4,000 | 4,000 | | 9,000 | 9,000 | 6,000 | 6,000 |

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# CLSA Sampling Frames

- CCHS provided first part of sample
- Options for methods of selection of remaining participants:
  - Using provincial health registries - *preferred*
  - Random digit dialing
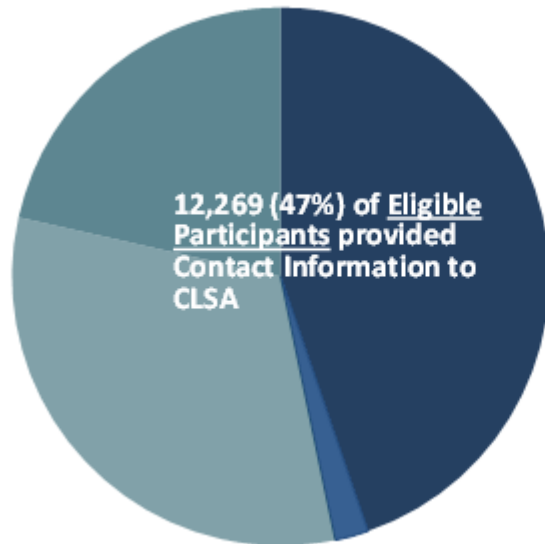- In several provinces, we cannot use registries, so need to do RDD

# Recruitment from the CCHS

- CLSA collaborated with Statistics Canada to develop the CCHS Healthy Aging Questionnaire

- Target population: People aged 45 and over living in private occupied dwellings in the ten provinces

- Excluded:
  - Residents of the three territories
  - Persons living on Indian reserves or Crown lands
  - Persons living in institutions
  - Full-time members of the Canadian Forces
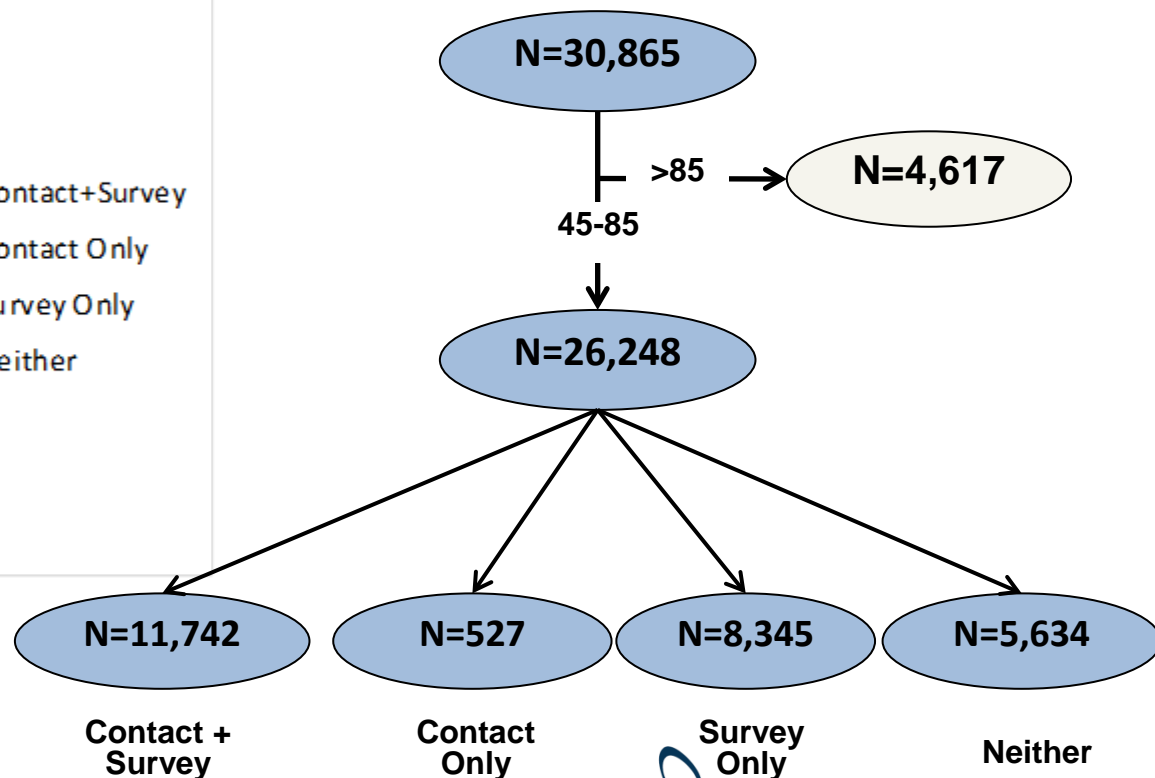  - Residents of some remote regions

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# Recruitment from the CCHS, *ctd.*

## Participants were asked to share:

- Their contact information with the CLSA (for recruitment)
- Their survey responses with the CLSA (for analysis)



12,269 (47%) of <u>Eligible Participants</u> provided Contact Information to CLSA

- Contact+Survey
- Contact Only
- Survey Only
- Neither

N=30,865

>85 → N=4,617

45-85

N=26,248

| N=11,742 | N=527 | N=8,345 | N=5,634 |
| Contact + Survey | Contact Only | Survey Only | Neither |

# Recruitment from the CCHS, *ctd.*

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| Sampling Frame: CCHS, provincial health registration databases, and RDD | Sampling Frame: provincial health registration databases, and RDD |
|---|---|
| ↓ | ↓ |
| **CLSA Tracking (n=20,000)** | **CLSA Comprehensive (n=30,000)** |

|  | 45-54 | 55-64 | 65-74 | 75-85 |  | 45-54 | 55-64 | 65-74 | 75-85 |
|---|---|---|---|---|---|---|---|---|---|
|  | ↓ | ↓ | ↓ | ↓ |  | ↓ | ↓ | ↓ | ↓ |
| **CCHS** | 617 | 1,704 | 1,350 | 791 |  | 9,000 | 9,000 | 6,000 | 6,000 |
|  | ↓ | ↓ | ↓ | ↓ |  |  |  |  |  |
| **Remainder** | 5,383 | 4,296 | 2,650 | 3,209 |  |  |  |  |  |

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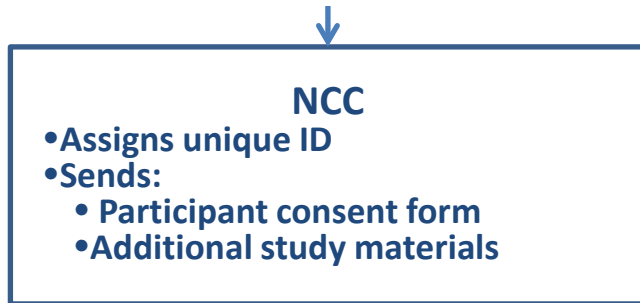Étude longitudinale canadienne sur le vieillissement

# Recruitment from Provincial health registration databases

- 2005
  - Feasibility study to explore practical, methodological and ethical aspects of accessing Health Care Utilization data from Provincial databases (published 2009)

- 2009-2011
  - Several meetings with Provincial Data Stewards and Privacy Commissioners to negotiate access to health registration databases for sampling
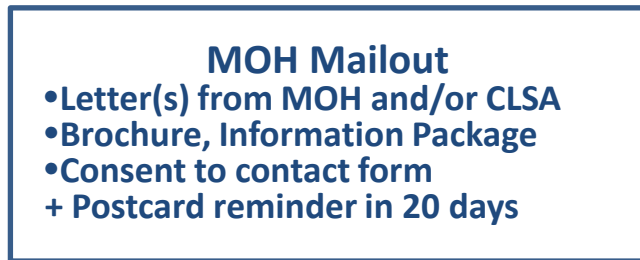
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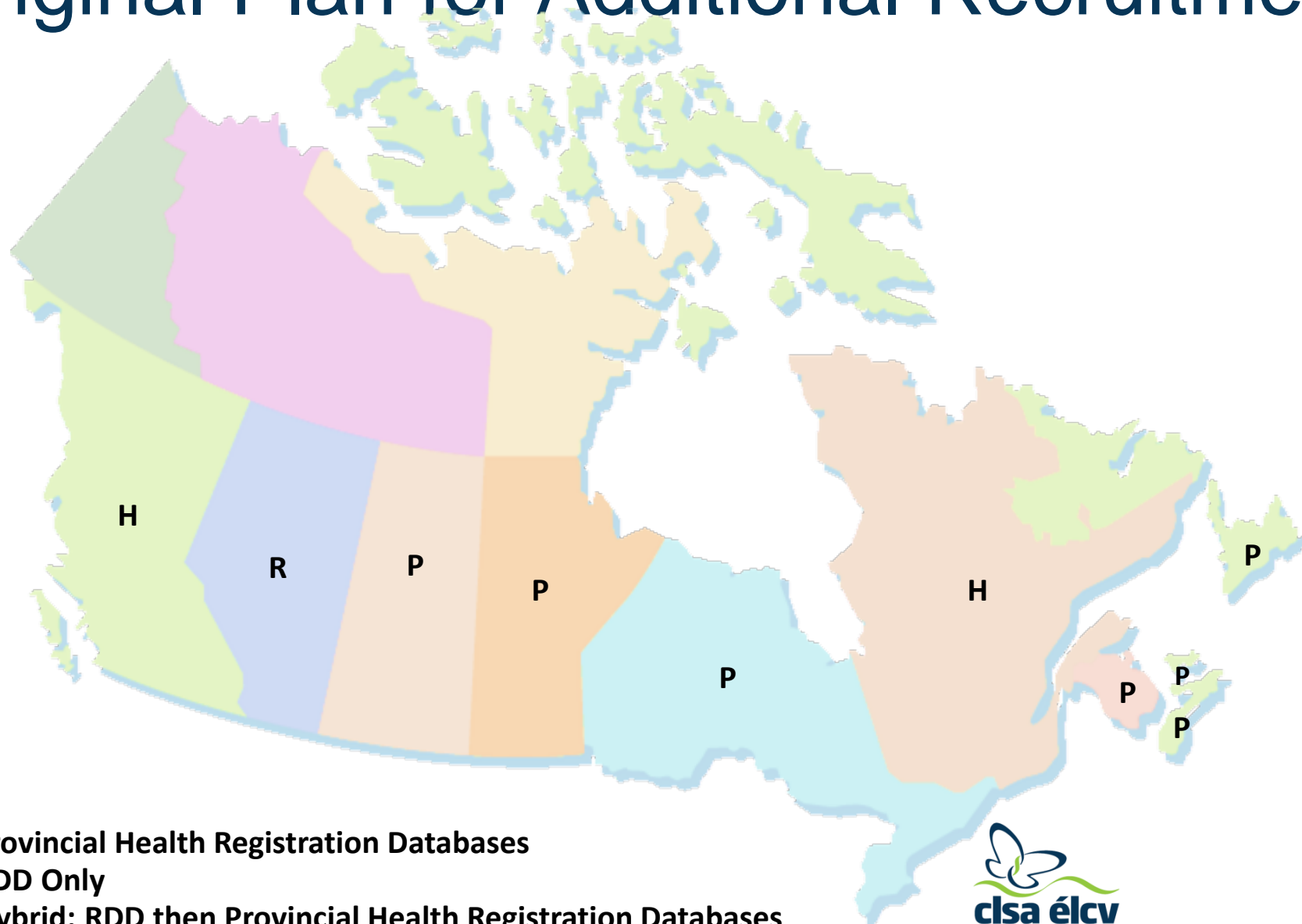Canadian Longitudinal Study on Aging
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# RDD approach

- In principle, idea is simple
- Randomly sample numbers as far as possible in specified area codes and with next 3 digits in relevant area
- Identify eligible people at each number
- Randomly choose one person
- Recruit willing participants until 'quota' filled

# Original Plan for Additional Recruitment
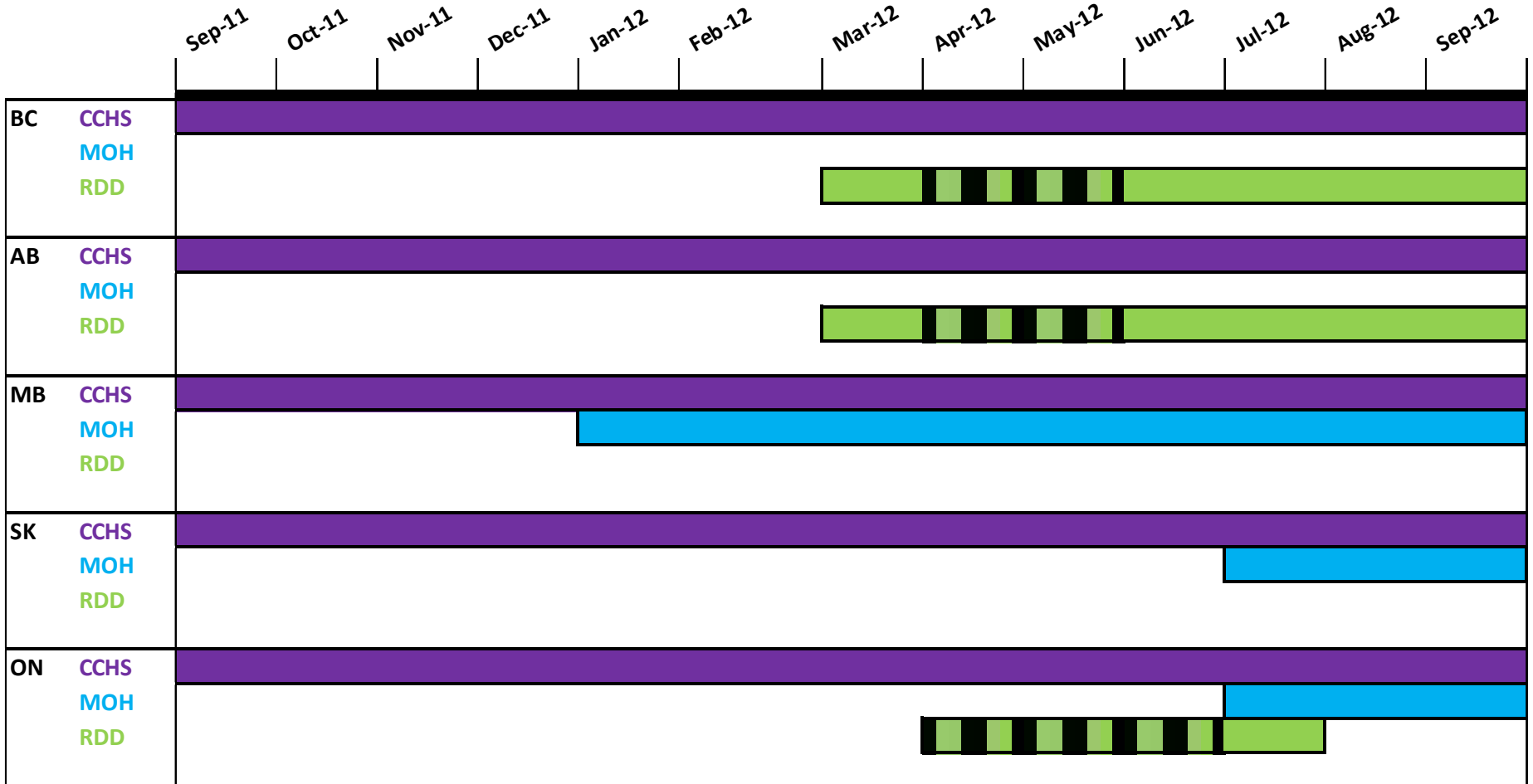


**P=Provincial Health Registration Databases**
**R=RDD Only**
**H=Hybrid: RDD then Provincial Health Registration Databases**

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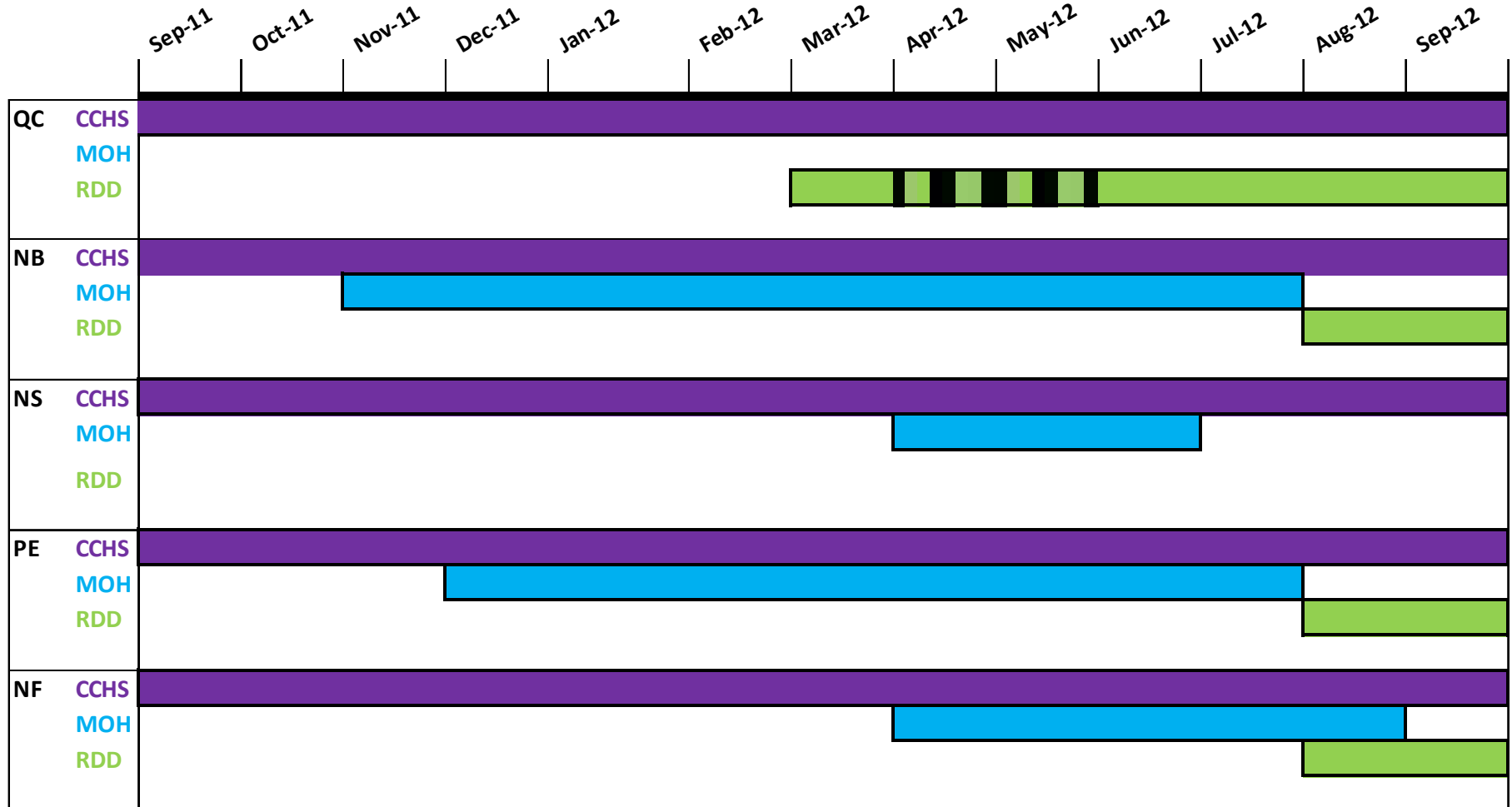Étude longitudinale canadienne sur le vieillissement

# Tracking Cohort

# Tracking Cohort

# Recruitment Rates to Date

| Cohort | Recruit-ment Method | Initial Response Rate Range | Mailout | Recruitment Rate | Mailout |
|---|---|---|---|---|---|
| Tracking | MOH | LOW   1.7% | ON July 2012 | LOW   45.5% | NL Apr 2012 |
| NB, PE, MB, NS, NL, SK, ON | | HIGH   21.2% | NS Apr 2012 | HIGH   73.0% | MB Jan 2012 |
| Comprehensive | MOH | LOW   4.4% | MB May, Aug 2012 | LOW   29.3% | NL Apr, July 2012 |
| NS, NL, MB, ON | | HIGH   19.7% | NS Apr, July 2012 | HIGH   78.6% | ON July, Aug 2012 |
| Tracking | RDD | | | LOW   33.6% | ON Apr 2012 |
| AB, BC, QC, ON | | | | HIGH   54.7% | QC Mar 2012 |
| Comprehensive | RDD | | | LOW   35.4% | AB Mar 2012 |
| AB, BC, QC, ON | | | | HIGH   57.1% | ON Apr 2012 |

# Combining samples from different sources

- Want overall P(Participation)
- Use addition rule of probability
- E.g., for someone chosen via RDD, need P(Selected by RDD) AND P(Selected in CCHS)
- Latter is an average probability, not an individual one
- Similarly for selection through HR

# Issues

- When P(Participation) is based on the product of probabilities, have to assume independence of probabilities

- Confidentiality conditions may mean, e.g., we call people in RDD who were in the CCHS and did not want to participate in the CLSA

- In RDD, have to allow for multiple phones in the household

- As in many population-based studies, recruitment in lower SES categories is difficult

# Summary

- Various sources of participants for CLSA

- Each has its own strengths and limitations

- Need to estimate sampling probabilities for each source

- Aiming for representativeness – but …

- Various assumptions must be made

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