Environmental scan to describe the current care received by frail seniors in Canada

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CHU de Québec

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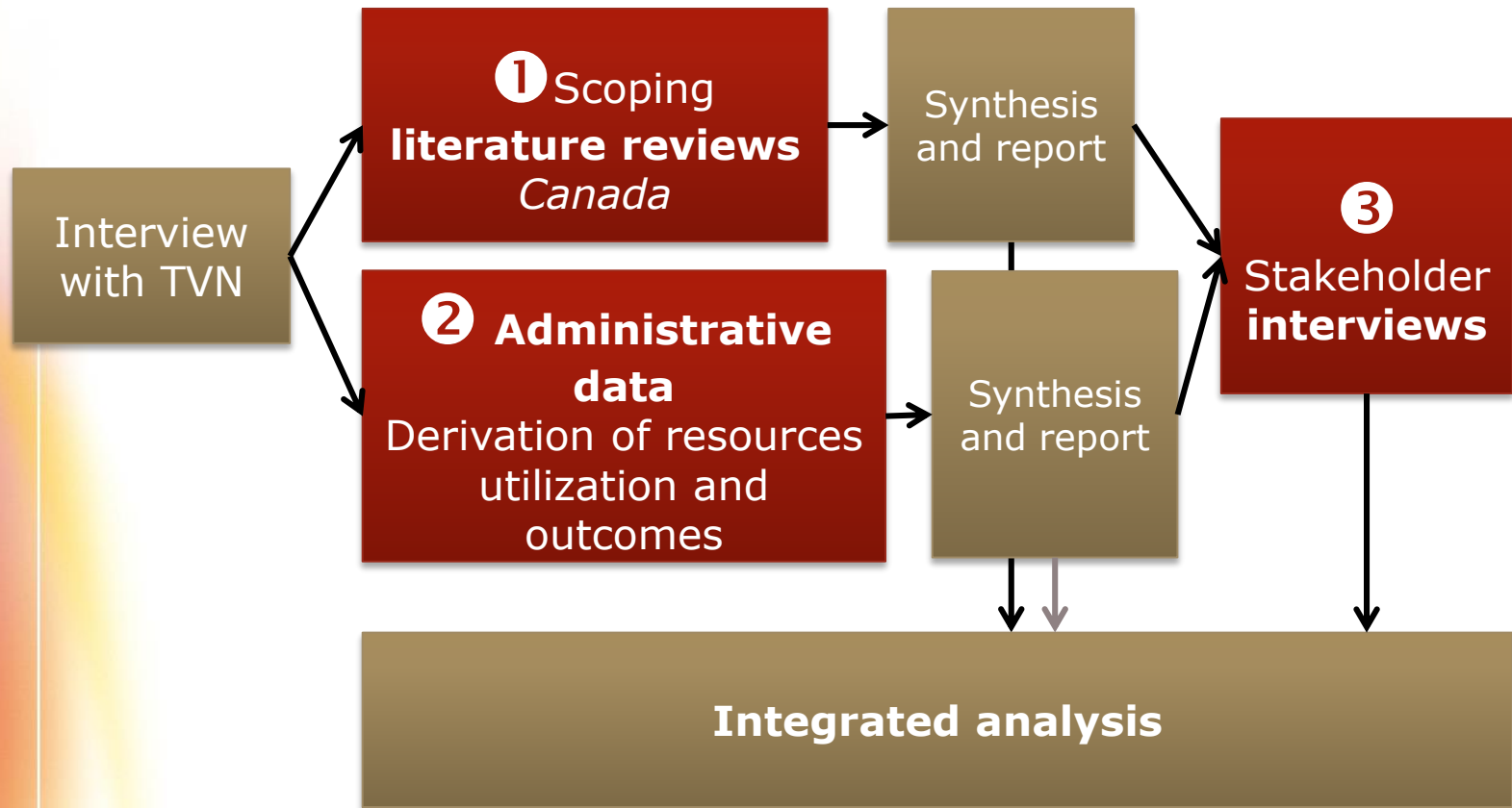
Environmental scan

To systematically examine the care of frail seniors across a spectrum of care settings in five Canadian provinces.
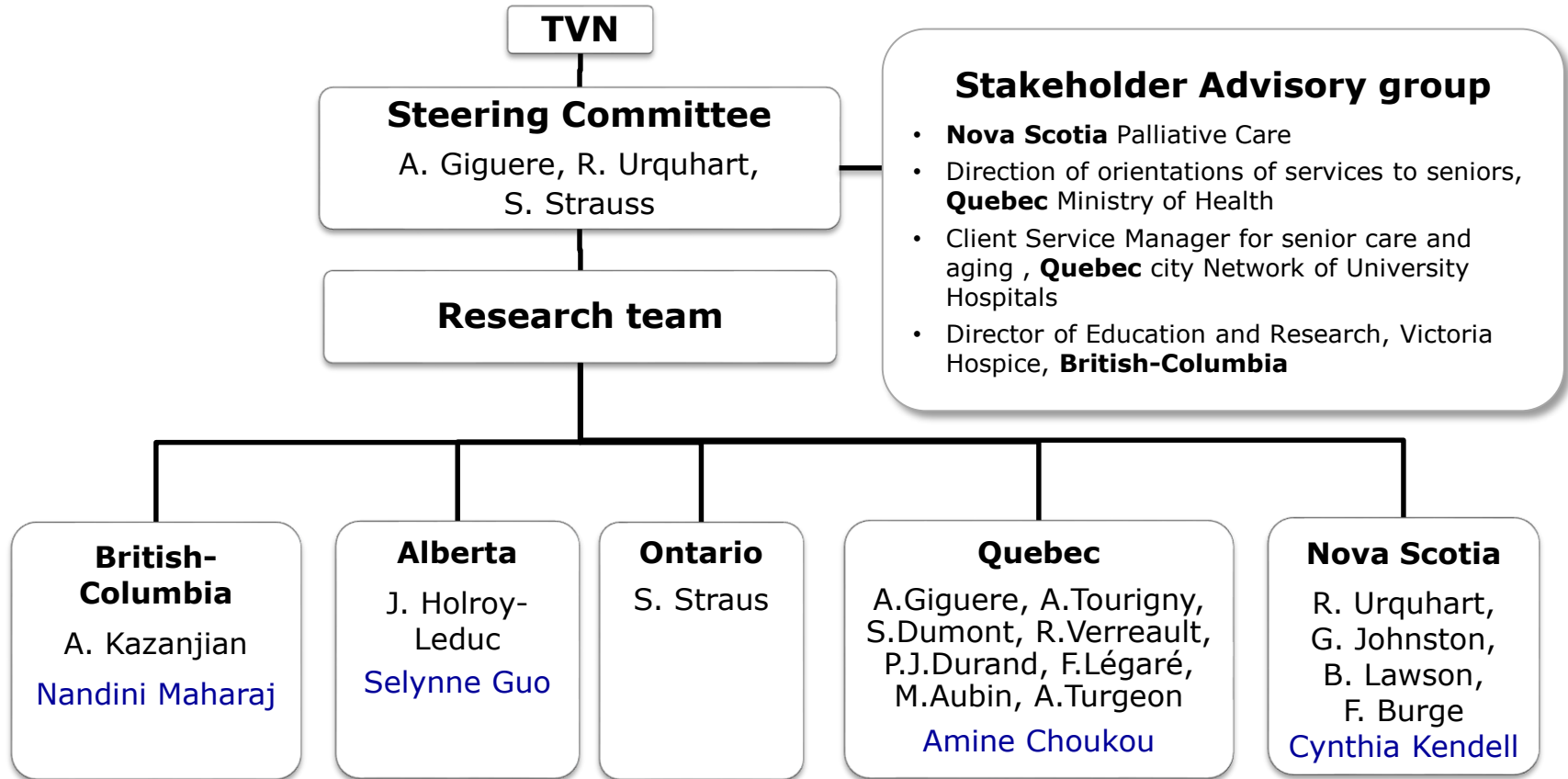
Research questions

1. What are the **healthcare services** and **models of care** currently offered in Canada for frail seniors?

2. How are **healthcare resources** used?

3. What are the **major outcomes of care**?

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Environmental scan
Integration of 3 data sources

Research team

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Steering Committee
A. Giguere, R. Urquhart,
S. Strauss

Stakeholder Advisory group

- **Nova Scotia** Palliative Care
- Direction of orientations of services to seniors, **Quebec** Ministry of Health
- Client Service Manager for senior care and aging , **Quebec** city Network of University Hospitals
- Director of Education and Research, Victoria Hospice, **British-Columbia**

Research team

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Cynthia Kendell

Presentation outline

1. **Challenges to identify frail seniors**

    1. Scoping review

    2. Administrative databases

    3. Interviews

2. **Clinical quality indicators of frail senior care**

    1. Interviews

    2. Scoping review

    3. Administrative data

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CHALLENGES TO IDENTIFY FRAIL SENIORS

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Scoping literature review

- **Search**
  - Academic & grey literature
  - Highly specific search strategy

- **Inclusion criteria**
  - About frail seniors, their caregivers and healthcare providers
  - Report clinical quality indicators
  - Study performed in Canada
  - French and English
  - 2009+

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Reports were included if participants...

- were described as being 'frail'

- could be classified as frail (using the description in the report)

  → CHSA Clinical Frailty Scale (Dr Rockwood)
  → Edmonton Frail Scale (≥ 2 domains)

- were living in long-term care facilities

- were at the end-of-life

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What criteria were actually used ?

	Proportion* (n=75)
Clinical indices: CHSA clinical frailty scale or Edmonton Frail scale (> 2 domains)	83%
Described as being 'frail'	35%
Living in long term care facilities	25%
At the end-of-life, terminally ill, in palliative care	8%

answers are not mutually exclusive

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Provincial administrative data

- Health-related data collected and stored in administrative and clinical databases

- Cost-effective source (vs. primary data)

- Indirect evidence: collected originally for billing purposes (not to answer our research question)

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New identification rules
- *based on claims data alone*

Initially based on...

- o Clinical indices to identify frail seniors
- o Expert opinions (geriatricians and researchers)
- o Literature where some form of claim-based data was used
- o Markers from population-based work that may be translated to service utilization by frail seniors

Consultation with team members to ensure...

- o **Specificity** of each rule to identify our target population
- o Sensitivity - who are we are likely to miss?

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Identification rules
- *Administrative data extraction*

- Rule #1: Long-term care residents

- Rule #2: Terminally ill

- Rule #3: At least 2 (inspired from clinical indices)

  - Cognitive impairment

  - General health status

  - Incontinence

  - Falls

  - Nutritional status

  - Targeted services utilization (geriatrician billings, provider home visits, provider visit to hospice)

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Description of the FS cohort identified in NS

Identification 'rule'	% cohort Initial cohort = 9885
#1 Long-term care resident	5%
#2 Terminally ill	38%
#3 Edmonton Frail Scale or service utilization (2 domains or more)	35%
• Cognitive impairment	14%

• General health status indicators. At least one of …
    • ≤ 2 inpatient hospital admission in past year
    • ≤ 2 emergency department visits in past year
    • diagnosis of malaise and fatigue/debility
    • diagnosis of cachexia
	68%

• Incontinence (urinary or fecal)	0.3%
• Falls (with hospitalization)	2.3%
• Nutrition issues	3%
• Functional performance	0.2%

• Targeted health service utilization, at least one of …
    • ≤ 1 geriatrician billing claim
    • ≤ 1 geriatrician patient service claim
    • ≤ 1 provider home visit
	37%

TOTAL UNIQUE FRAIL SENIORS IDENTIFED	**6445** (65%)

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Interviews of key stakeholders

Participants

- o 20 patients/caregivers, 20 healthcare professionals, 20 decision makers
- o From the 5 targeted provinces
- o From various settings of care

General objectives

- o Explore views of healthcare services, resource utilization and outcomes for frail seniors

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The interviews –
Frail seniors/caregivers recruitment

- Alberta and BC: posters in geriatric clinics
  - No recruitment in Alberta
  - A few patients recruited in BC

- Quebec: through their healthcare providers
  - A few patients so far

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Potential solution

- Recruit in targeted settings (LTC)
- Avoid the use of the word "Frail" on posters
- Example of our poster in Ontario:

Tell us about care for seniors

St. Michael's researchers want to know about the care experienced by seniors who experience a loss of energy, physical ability, cognition, or health.

Seniors who fit this description can participate in this research study to
... tors to patients regarding their care
... services they've received
... patient

CLINICAL QUALITY INDICATORS OF FRAIL SENIOR CARE

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Pre-interview quantitative survey with participants

- To prioritize clinical quality indicators
- 36 clinical quality indicators listed from review and administrative data studies

	This is a good measure of clinical care quality				
	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
				☐	☐
Reduction of caregiver's burden	☐	☐	☐	☐	☐
Increase in patient autonomy	☐	☐	☐	☐	☐
Increase in cognitive performance	☐	☐	☐	☐	☐
Reduction of depression	☐	☐	☐	☐	☐
Reduction of mortality	☐	☐	☐	☐	☐

The best indicators according to key stakeholders

Is this a good measure of clinical quality of care ?	scale from 1 (disagree) to 5 (agree)
1- Increase in **quality of life** of the patient	4.7 (0.5)
2- Reduction of symptoms	4.5 (0.5)
2- Increase in provider competency or skills	4.5 (0.7)
3- Reduction of caregiver's burden	4.4 (0.7)
3- Increase in family physician continuity of care, last year of life	4.4 (0.7)
3- Increase in patient satisfaction with care	4.4 (0.7)
3- Reduction of the rate of emergency department visits	4.4 (0.9)

preliminary results (25 participants from AB, BC, QC)

Amine Choukou, postdoctoral fellow

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Studies on the impact of an intervention (n=22)

Indicator	Interventions (Study ID)	Impact
Quality of life	• 12-week small-group physical exercise program #ID 343	☺
	• Multifactorial, interdisciplinary team approach to falls prevention #ID 395	☺
	• Mobility intervention in long-term care facilities #ID 595	☺
	• #ID 501	😐
Symptoms	• #ID 395	😐
	• #ID 1079	😐
Provider competency or skills	• VIDOS study - Interdisciplinary, multifaceted knowledge translation intervention within long-term care (ON) ID #312	☺

Contin'd

Studies on the impact of an intervention (n=22)

Indicator	Interventions (Study ID)	Impact
Caregiver's burden	• ID #259	☹
GP continuity of care, last year of life	*NA*	
Patient satisfaction with care	• PRISMA study - Coordination-type integrated service delivery model (QC) ID #259	☺
	• Alternate housing models ID #2014	☺
Rate of emergency department visits	• Emergency mobile nursing service ID #38	☺
	• ID #259	☹
	• ID #395	😐
	• ID #553	😐

Scoping review

Studies comparing quality of care across different cohorts

Indicator	Covariate	Impact	Ref ID
Quality of life			NA
Symptoms			NA
Provider competency or skills			NA
Caregiver's burden			NA
Patient satisfaction with care			NA
GP continuity of care, last year of life			NA
Rate of emergency department visits			5 studies

Nothing…

Scoping review
Studies comparing quality of care across different cohorts

Indicator	Covariate	Impact	Ref ID
Reduction of the rate of emergency department visits	Sex (man)	☹	
	Age, Frailty, comorbidities, Marital status, Education	😐	34
	Age, Sex, frailty, comorbidities, cancer, advanced disease, extensive treatment received	😐	516
	Cognitive impairment suspicion	☹	
	Continuity (comprehensiveness)	😐	317
	Continuity (informational)	☺	
	Hospital use, Long-term care use	☹	1148
	Age	☺	1402
	Neighborhood income	😐	

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Clinical quality indicators
Identification and prioritization

Indicators studied in NS and reported in review	• **45**
Potential indicators of frail senior care	• **13**
Selected	• **6**

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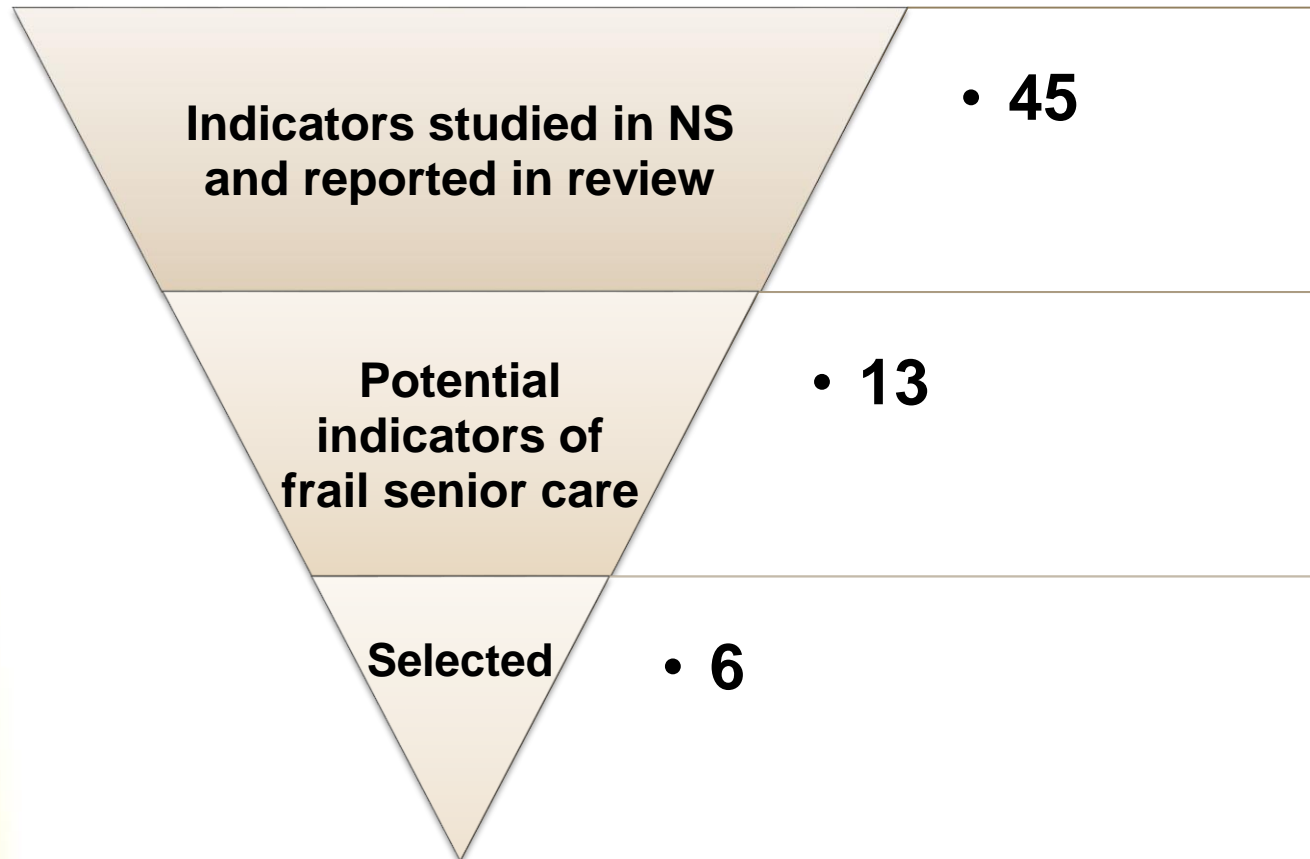
Clinical quality indicator selected and rank in the Delphi survey

Clinical quality indicator selected	RANK
• Number of hospital days in the last year of life	1
• Rate of emergency department visits in the last year of life	2
• Proportion of frail seniors who have undergone non-beneficial medical interventions in the last year of life	3
• Number of intensive care unit admissions in the last year of life	3
• Family physician continuity of care in the last year of life	3
• Rate of hospital readmission in the last year of life	3

Results from Nova Scotia (n=6445)

	Emergency department visits	Number of hospital days
	Median (Range)	
Last year of life	2 (0-21)	19 (0-355)
Last 30 days of life	0 (0-8)	7 (0-30)

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Association between FS characteristics and indicator (n=6445)

Characteristics		Emergency department visit	Number of hospital days
		Rate ratio, 95% confidence interval [CI]	
Sex (vs male)	Female	**0.89** (0.85-0.93)	**1.13** (1.06-1.20)
Age (years)(vs 85+)	66-74	**1.32** (1.25-1.39)	**1.18** (1.08-1.28)
	75-84	**1.22** (1.16-1.29)	**1.16** (1.08-1.26)
Community size (vs <10,000)	>1.5milllions	NA	NA
	0.5-1.49 millions	NA	NA
	0.1-0.49 millions	**1.14** (1.09-1.19)	**0.86** (0.81-0.92)
	10,000-99,999	**1.25** (1.17-1.34)	**0.76** (0.69-0.84)
Income quintile (vs Upper)	Lower	1.04 (0.97-1.11)	**1.12** (1.01-1.23)
	Lower middle	1.01 (0.94-1.08)	1.07 (0.96-1.18)
	Middle	1.02 (0.95-1.09)	1.00 (0.90-1.10)
	Upper middle	1.08 (1.00-1.15)	1.09 (0.98-1.21)

Source of funding

™ Trademark of TVN (Technology Evaluation in the Elderly Network). Used with permission.

Delphi survey
Prioritization of clinical quality indicators

- **Criteria:**
  - Importance and relevance to assess performances in the provision of care to frail seniors
  - coverage of diverse patient cohorts

- **23 Participants invited**
  - Team members (clinicians, researchers, geriatricians, decision makers)

- **Delphi survey (to seek consensus)**
  - Ranking by each participants (unique rank)
  - Feedback of results and re-ranking
  - Stop when ranks are stable

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Availability of administrative data across provinces
Non- end of life patient cohort

Clinical quality indicator	NS	QC	AB	BC	ON	
Hospital inpatient days	X	√	√	√	√	NS is using a data file that includes only those who had died.
Emergency department (ED) visits	X	√	√	√	√	
Family physician continuity over last year of life	X	√	√	√	√	
Rate of hospital readmission 1 week to 1 month after first new hospitalization	X	X	√	√	√	QK does not have the readmission variable in their existing files

Availability of administrative data across provinces
End-of-life patient cohort (focus on the last years of life)

Clinical quality indicator	NS	QC	AB	BC	ON	
Hospital inpatient days near the end of life	√	√	X	√	√	
Emergency department visits over last year of life	√	√	X	√	√	
Family physician continuity over last year of life	X	√	X	√	√	NS does not have provider ID in their existing file
ICU admission during last 30 days of life	√	√	X	√	√	
Rate of hospital readmission (readmission 1 week to 1 month after first new hospitalization)	X	X	X	√	√	NS and QK do not have the readmission variable in their existing files
Proportion who have undergone non-beneficial medical interventions during their last year of life. Specifically: a) Ventilation	√	√	X	√	√	

Identification of FS in administrative data

Two strategies

- Using cause of death/diagnosis codes (Fassbender)
- John Hopkins AGC system → 12 'frailty clusters'

Problems

- most provinces do not yet capture the necessary information in accessible provincial administrative data sets

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