Alberta Continuing Care
What the RAI data can tell us

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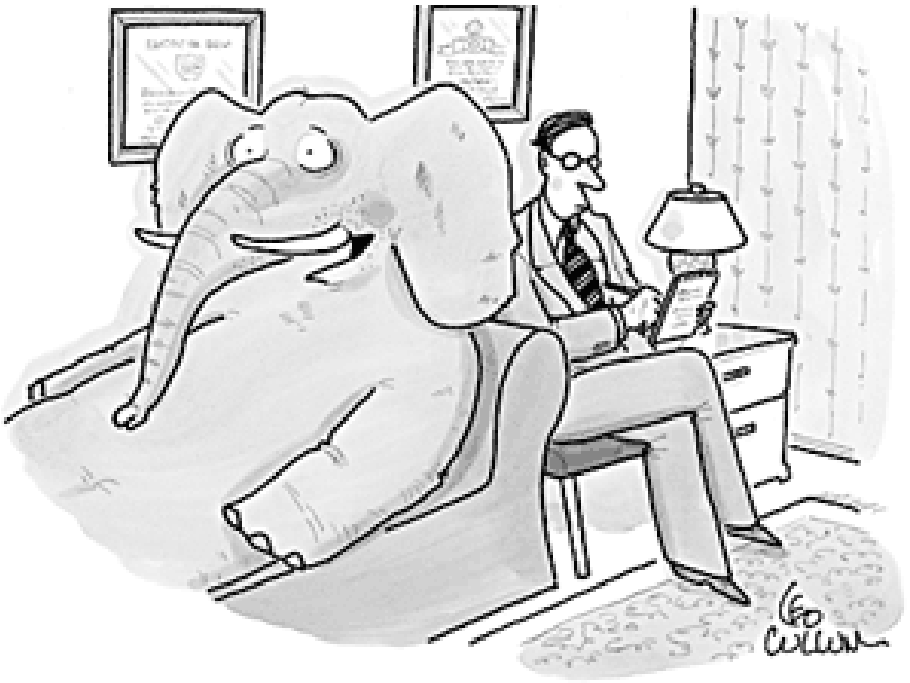
Outline

Perhaps, *some* of the things the data can tell us:

1. Alberta Continuing Care
   - Descriptive, drawn from RAI
2. Quality Indicators
   - Home care and residential care indicators
3. Hospitalization rates
   - RAI measures to adjust for risk

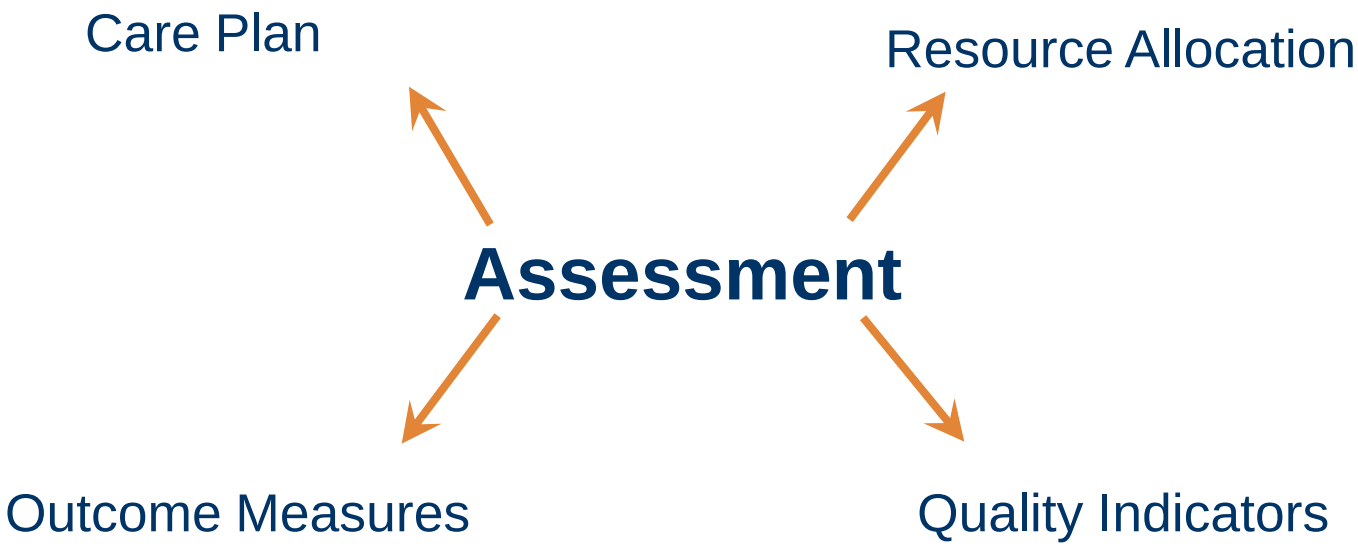
Acknowledgements

- Alberta Health Services, for making the data available, and for supporting my work with them



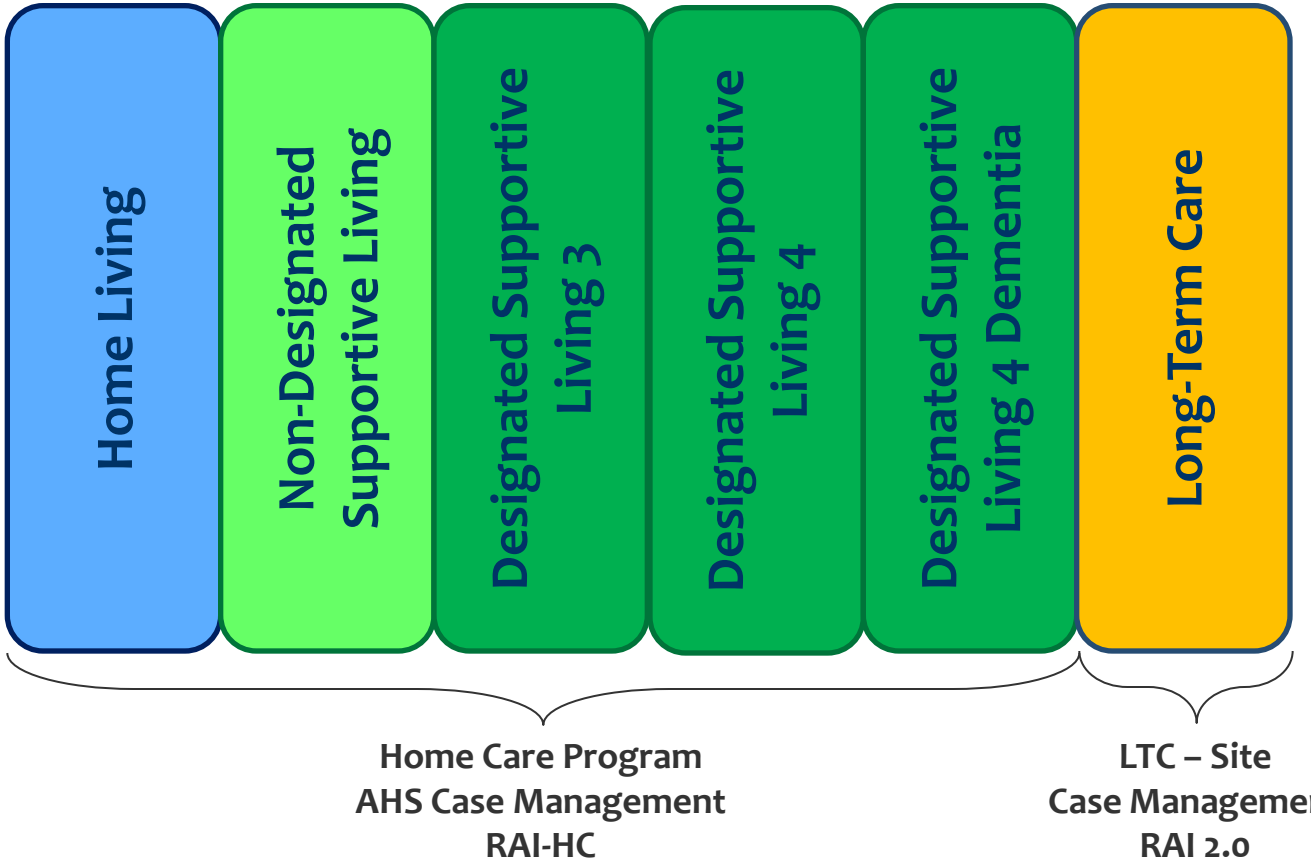
"I'm right there in the room, and no one even acknowledges me."

Applications of inter*RAI* Instruments



1) Alberta Continuing Care

Who are the clients being served in Continuing Care?



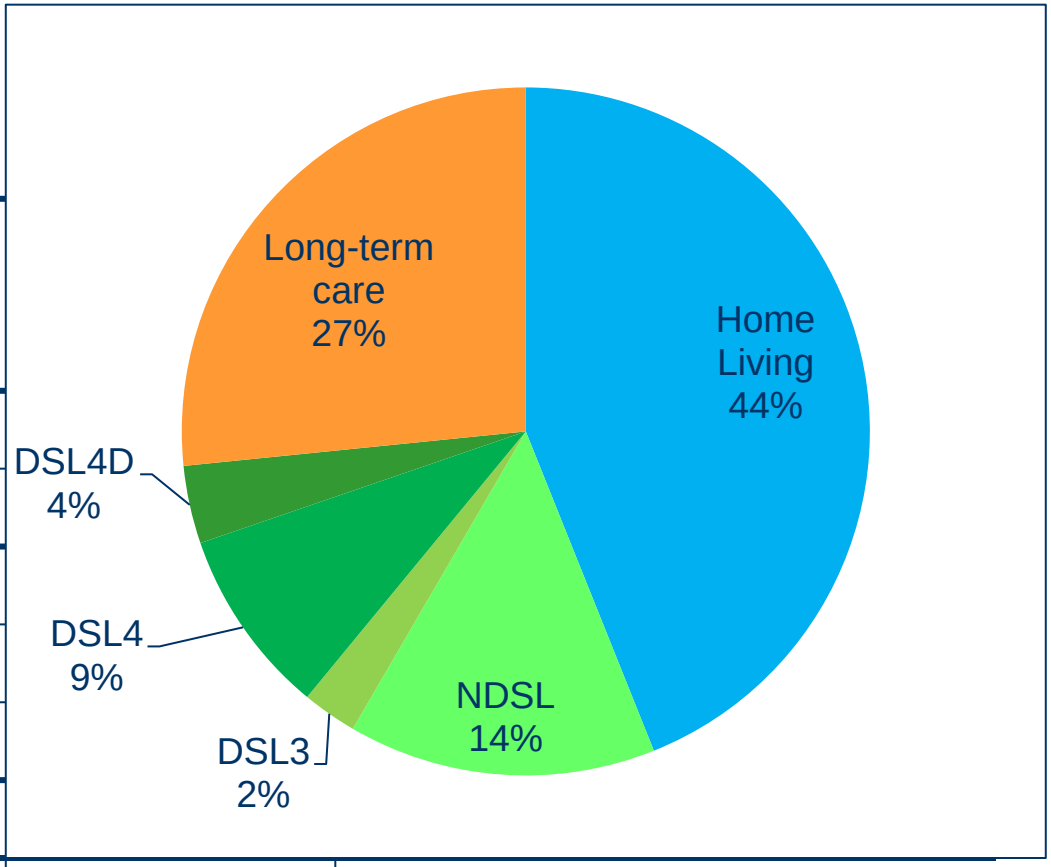
- Barb Proudfoot, AHS

How many and where? And with a recent RAI?

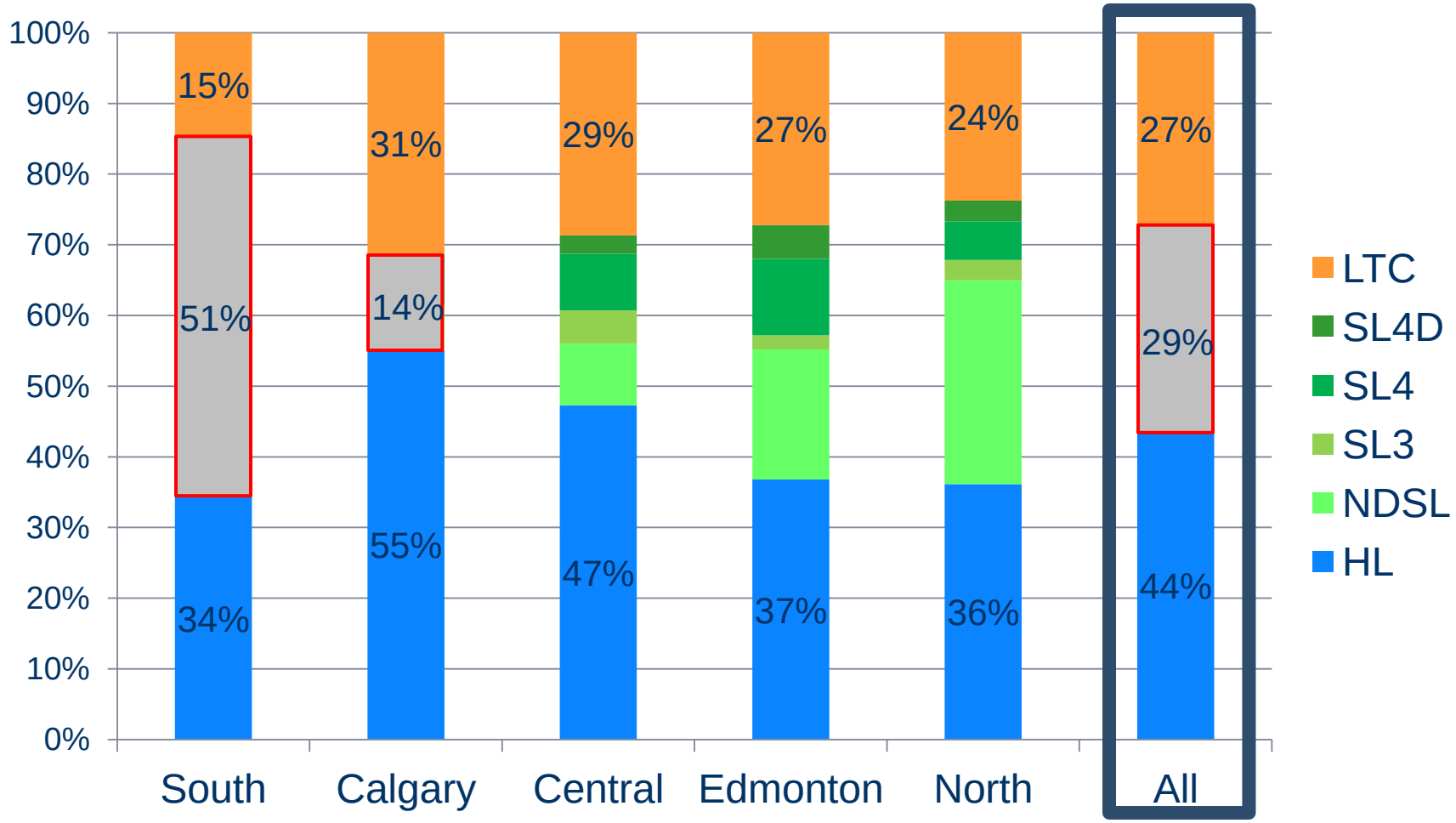
Cross-section of active/served individuals

- Index date: April 1, 2014

	AHS annual report (beds)
Home Living	
Non-Designated SL	
Designated SL3	1,565
Designated SL4	4,889
Designated SL4D	2,043
Long-term care	14,370
	52,095

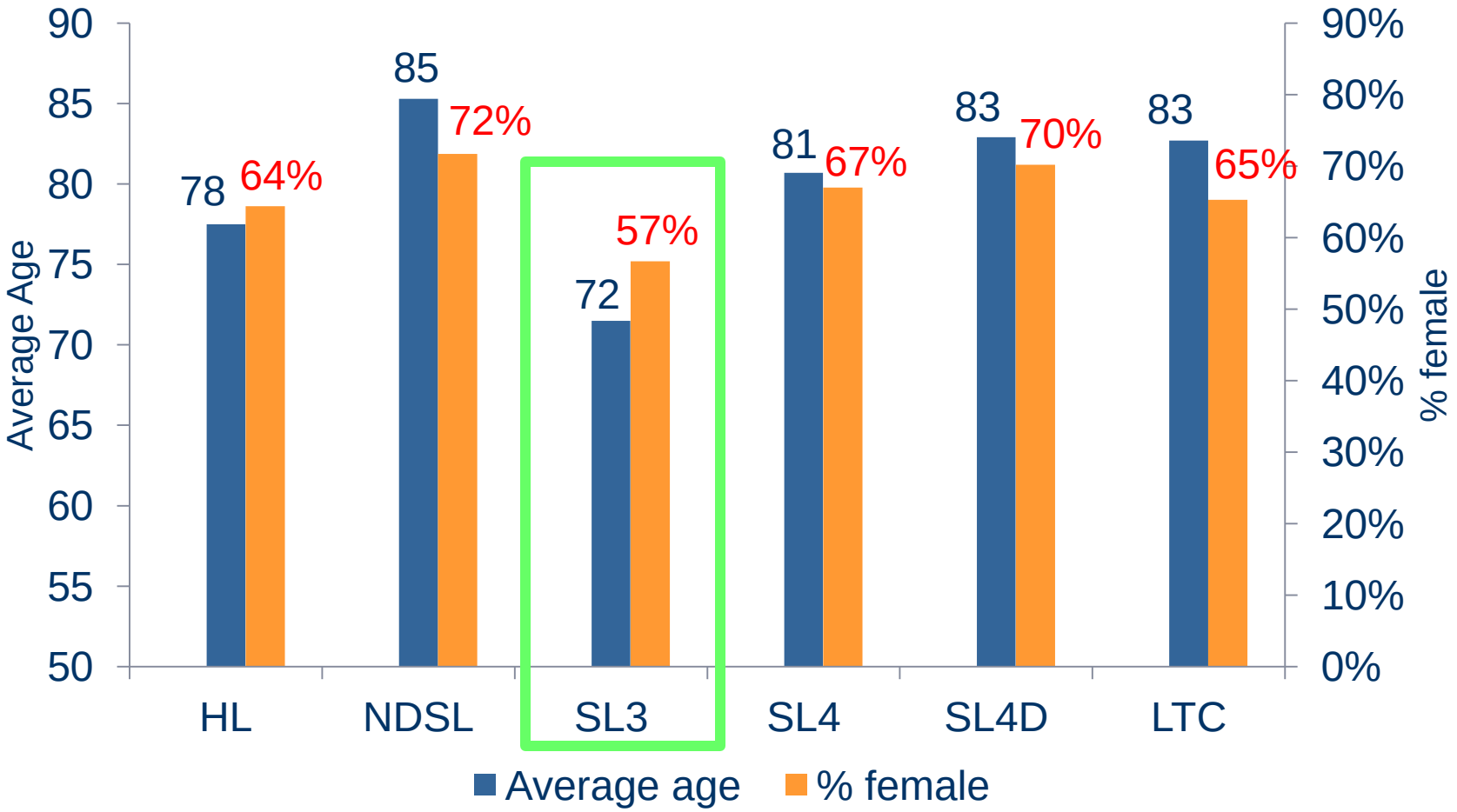


Served/Active Individuals, by setting, by zone: April 1, 2014

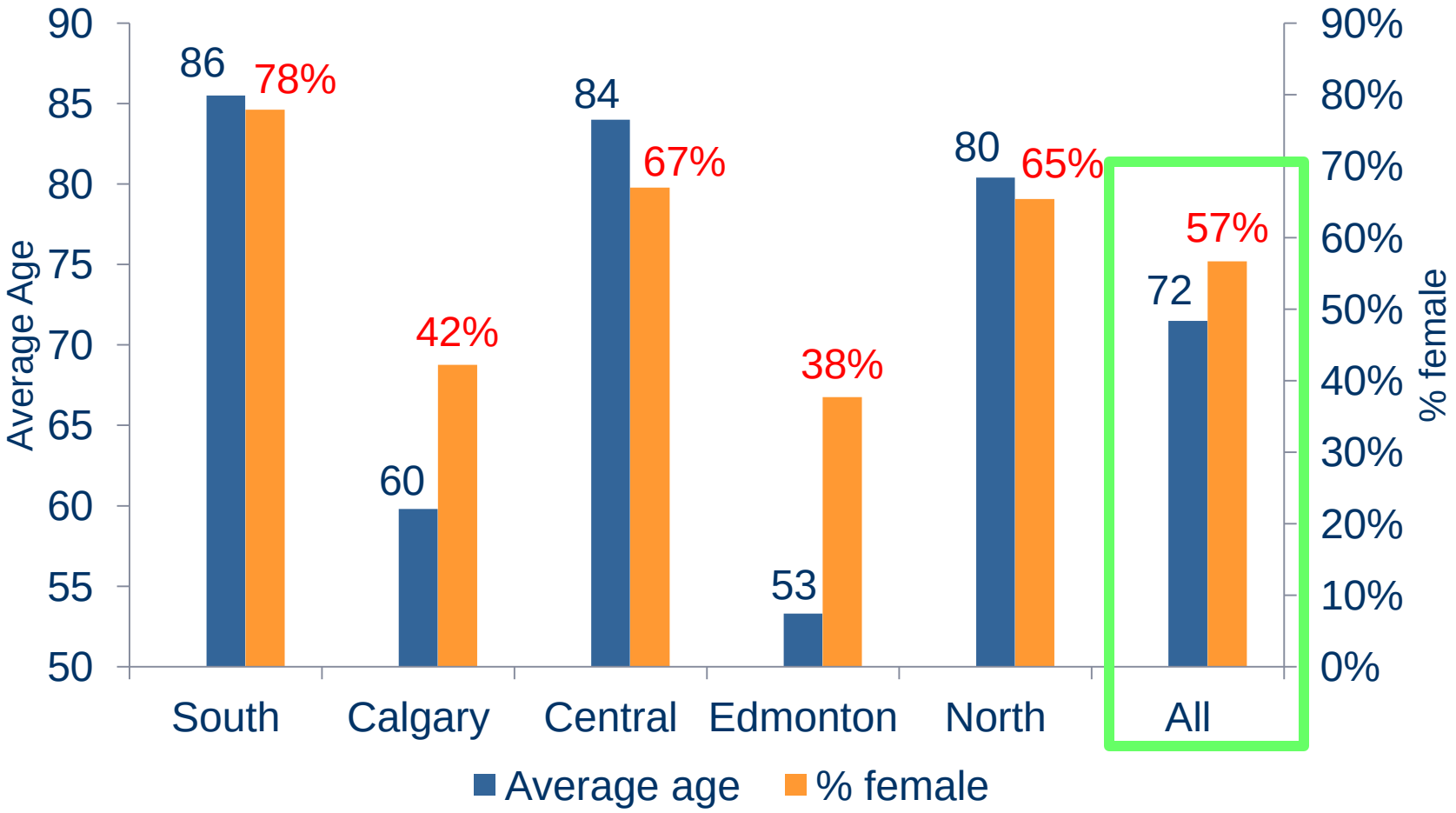


	South	Calgary	Central	Edmonton	North	All
per 1000 75+	***240***	***167***	***193***	***205***	***230***	***196***

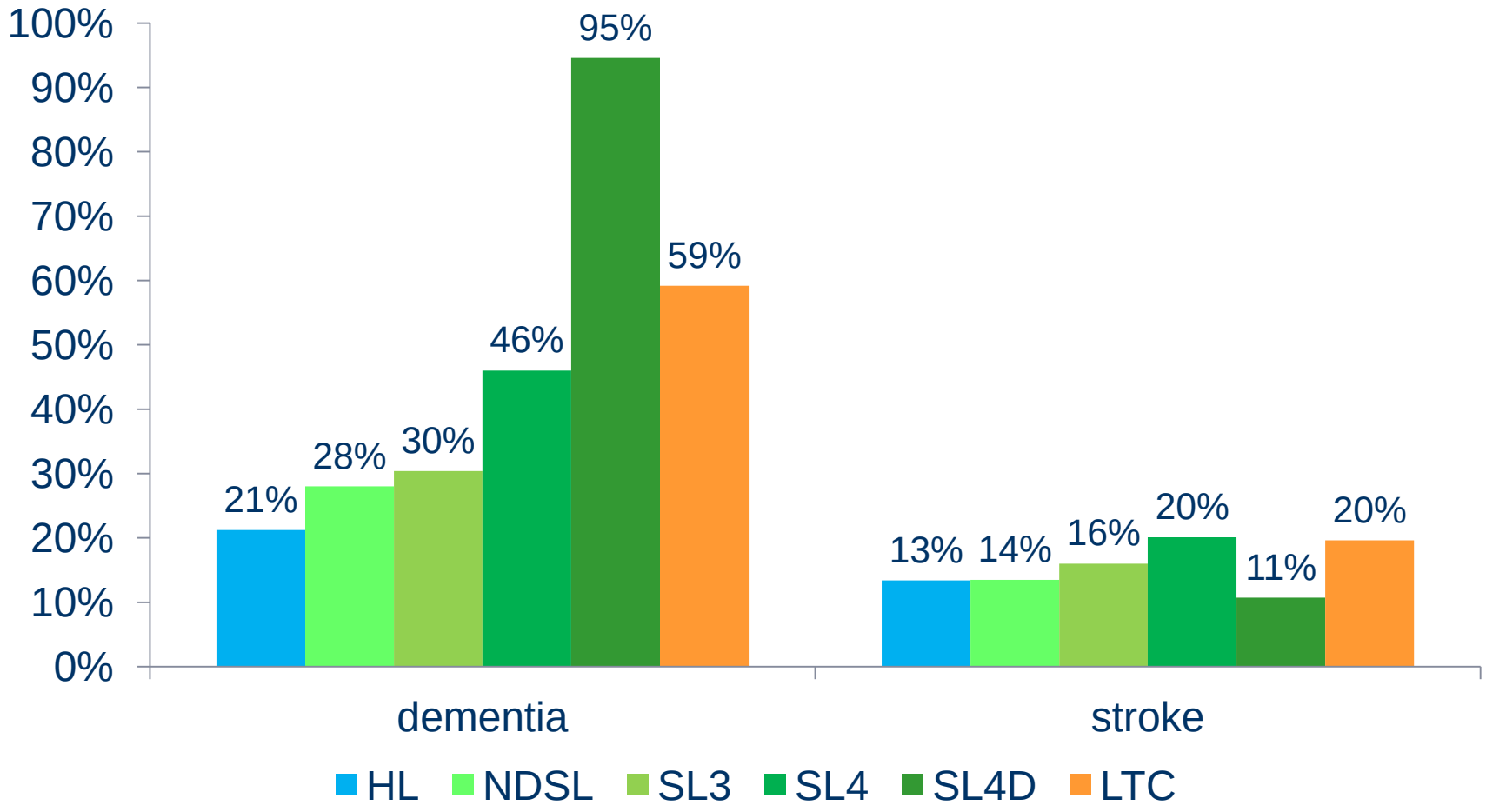
Age & Sex


90
85
80
75
70
65
60
55
50
Average Age
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% female
78
64%
85
72%
72
57%
81
67%
83
70%
83
65%
HL
NDSL
SL3
SL4
SL4D
LTC
Average age
% female

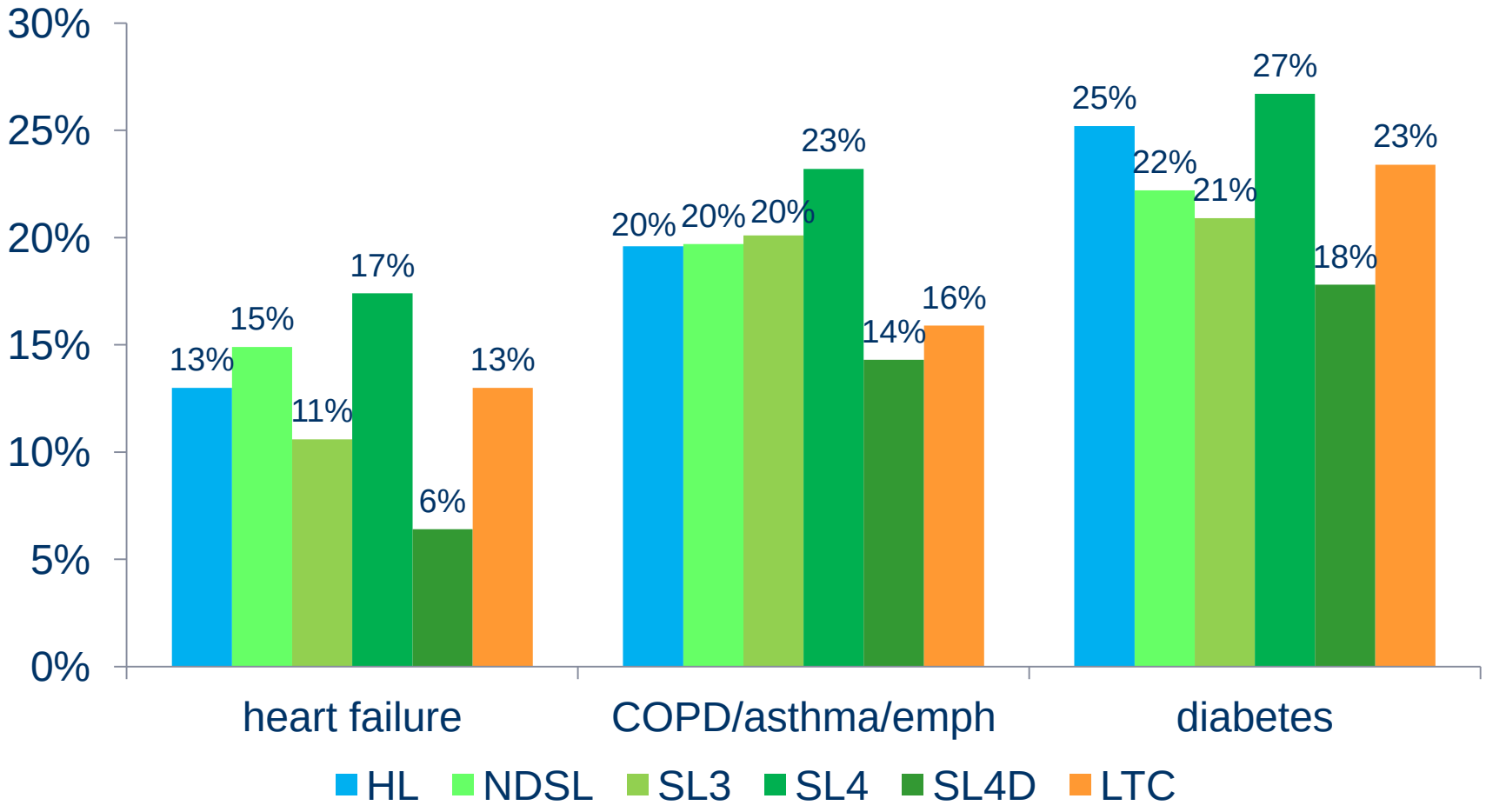
Age & Sex: DSL3 only, by zone



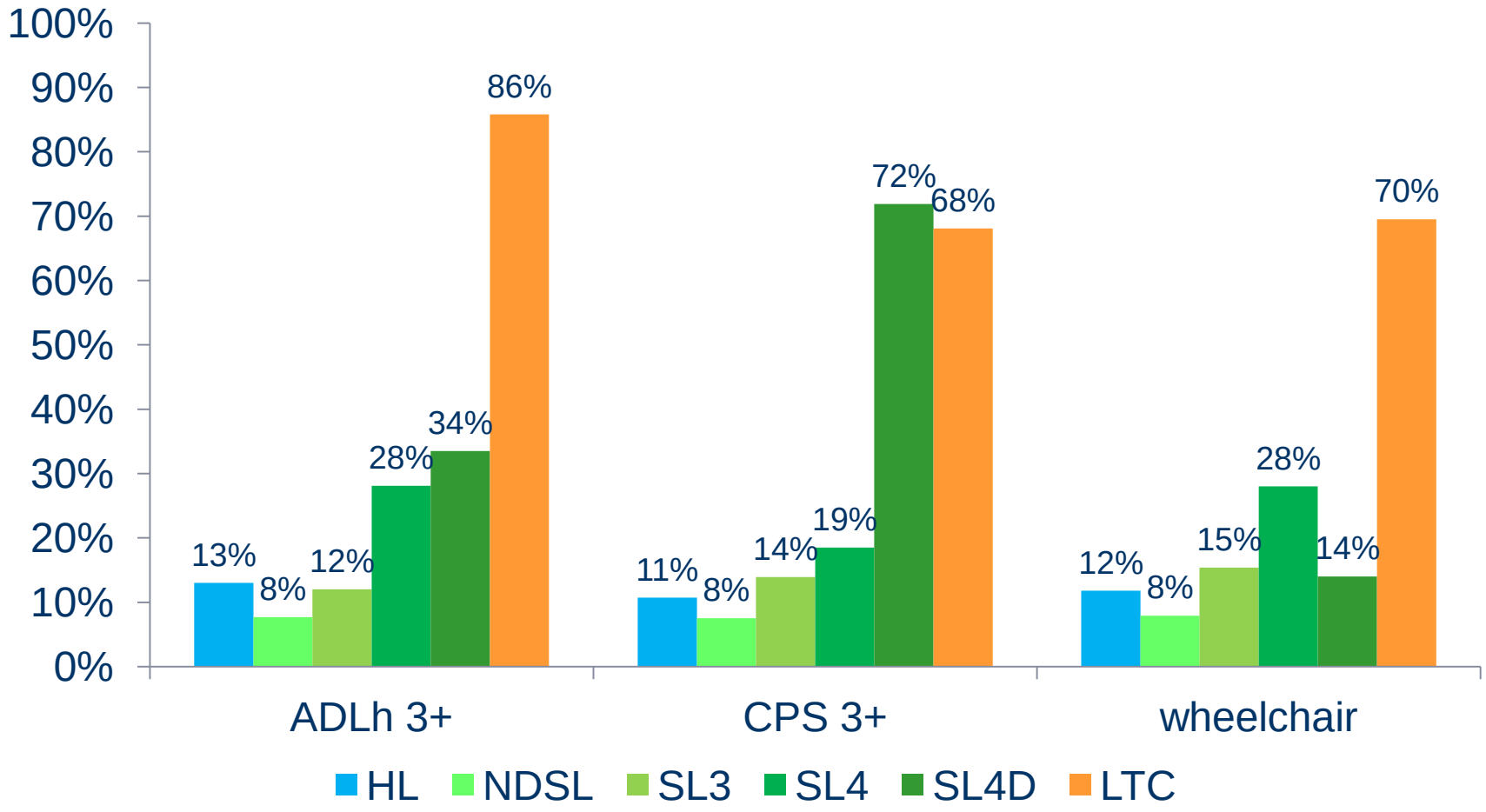
Some diagnoses



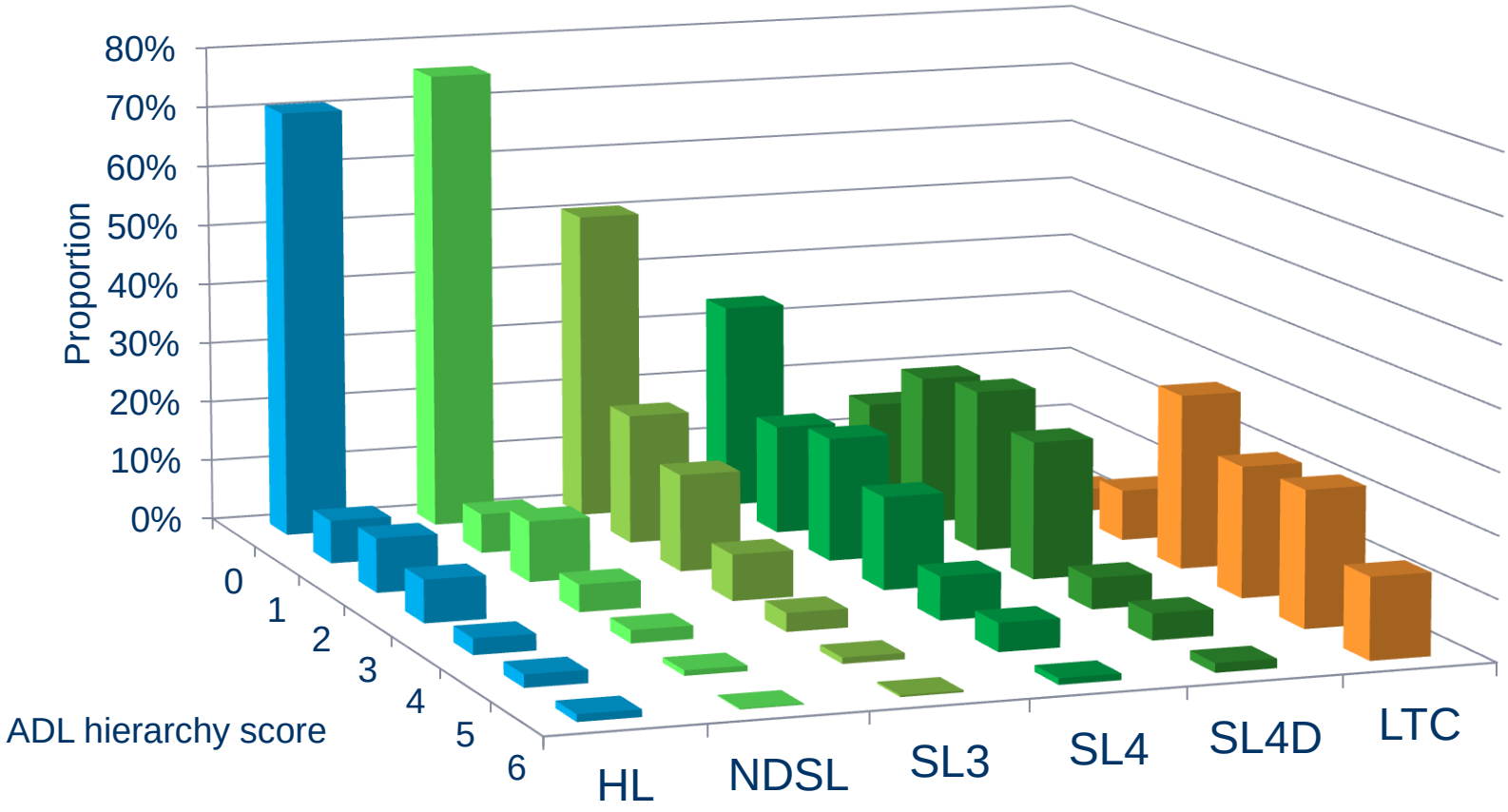
Some diagnoses



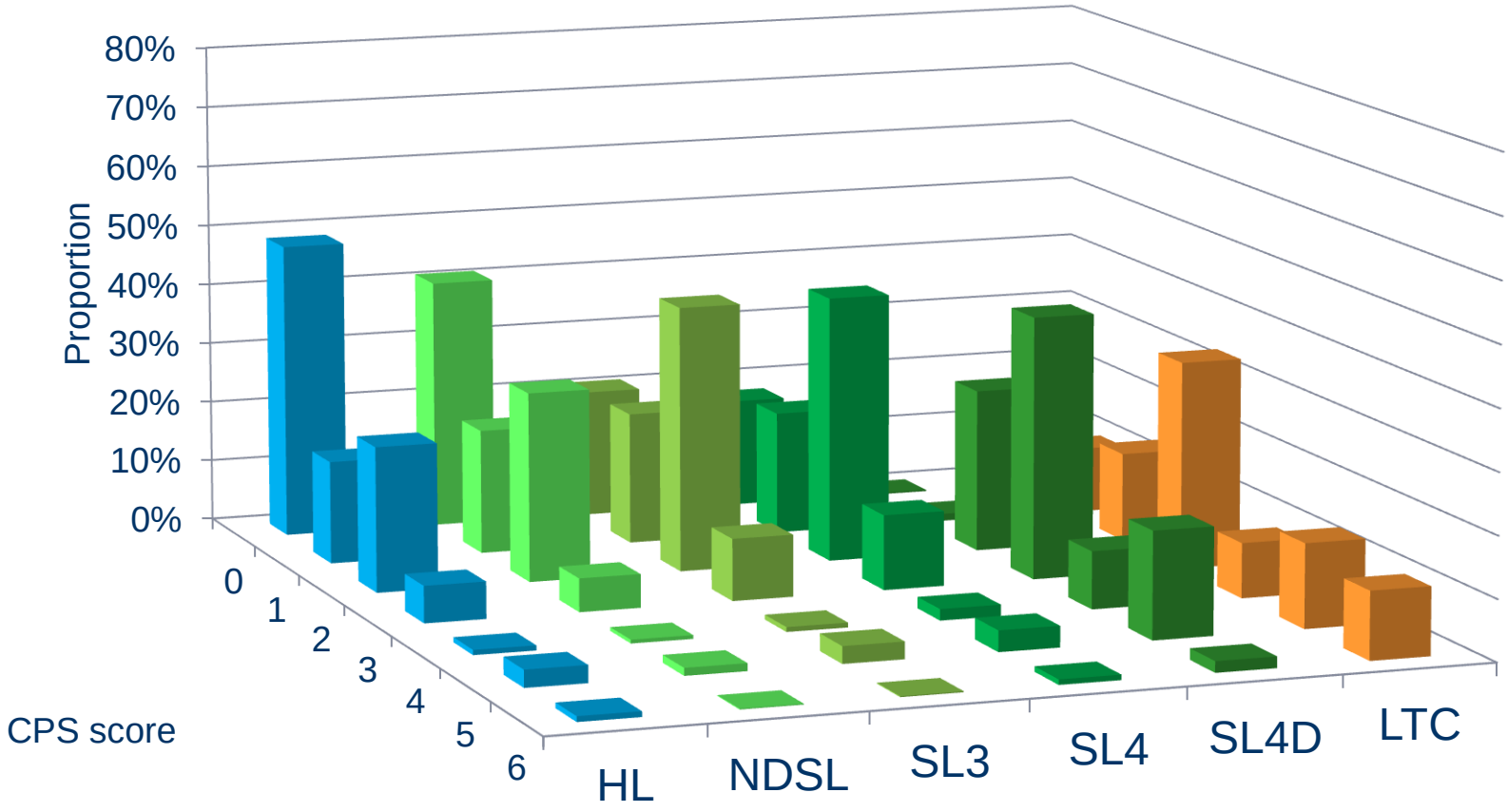
Physical, cognitive impairment



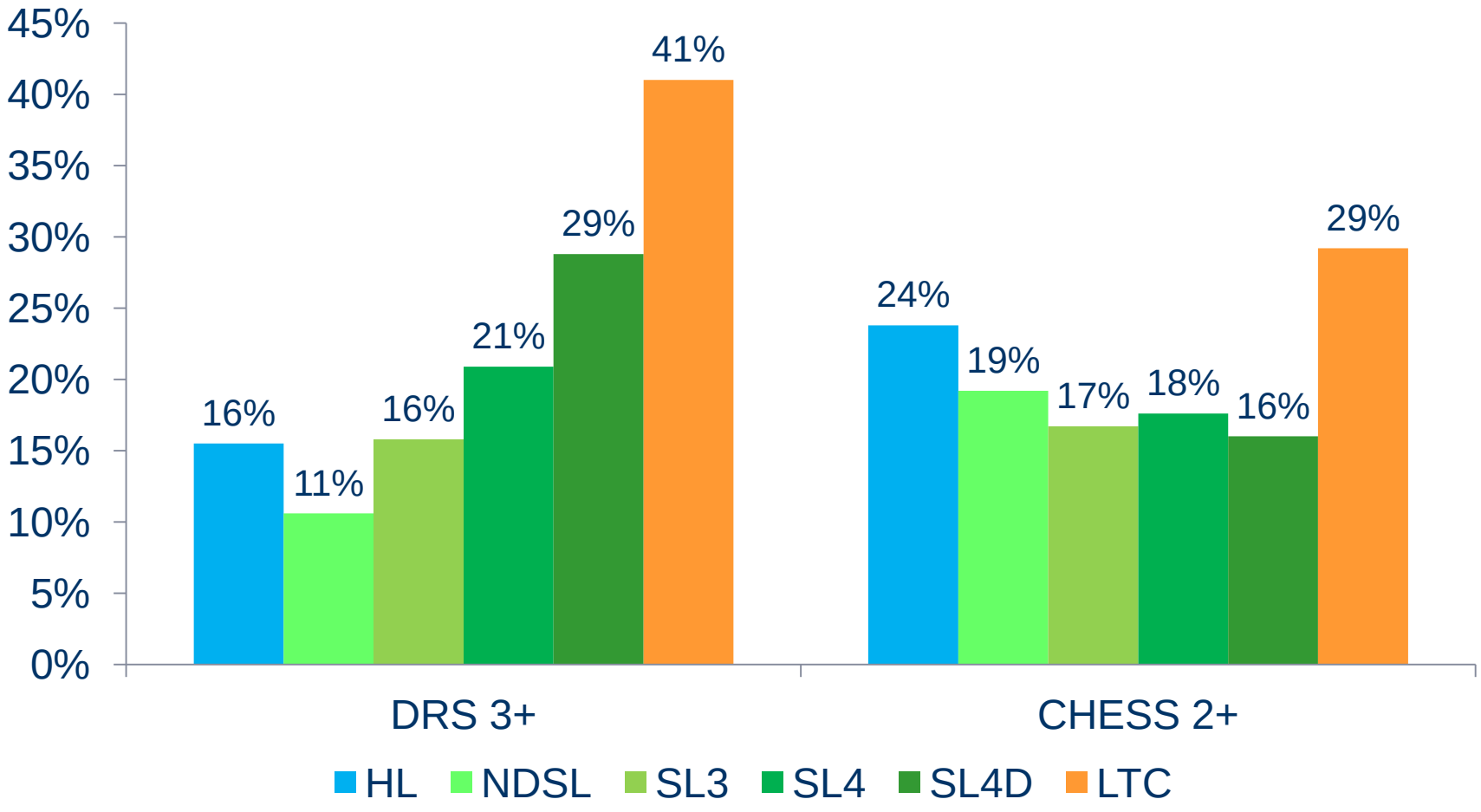
ADL hierarchy scale, distribution among settings



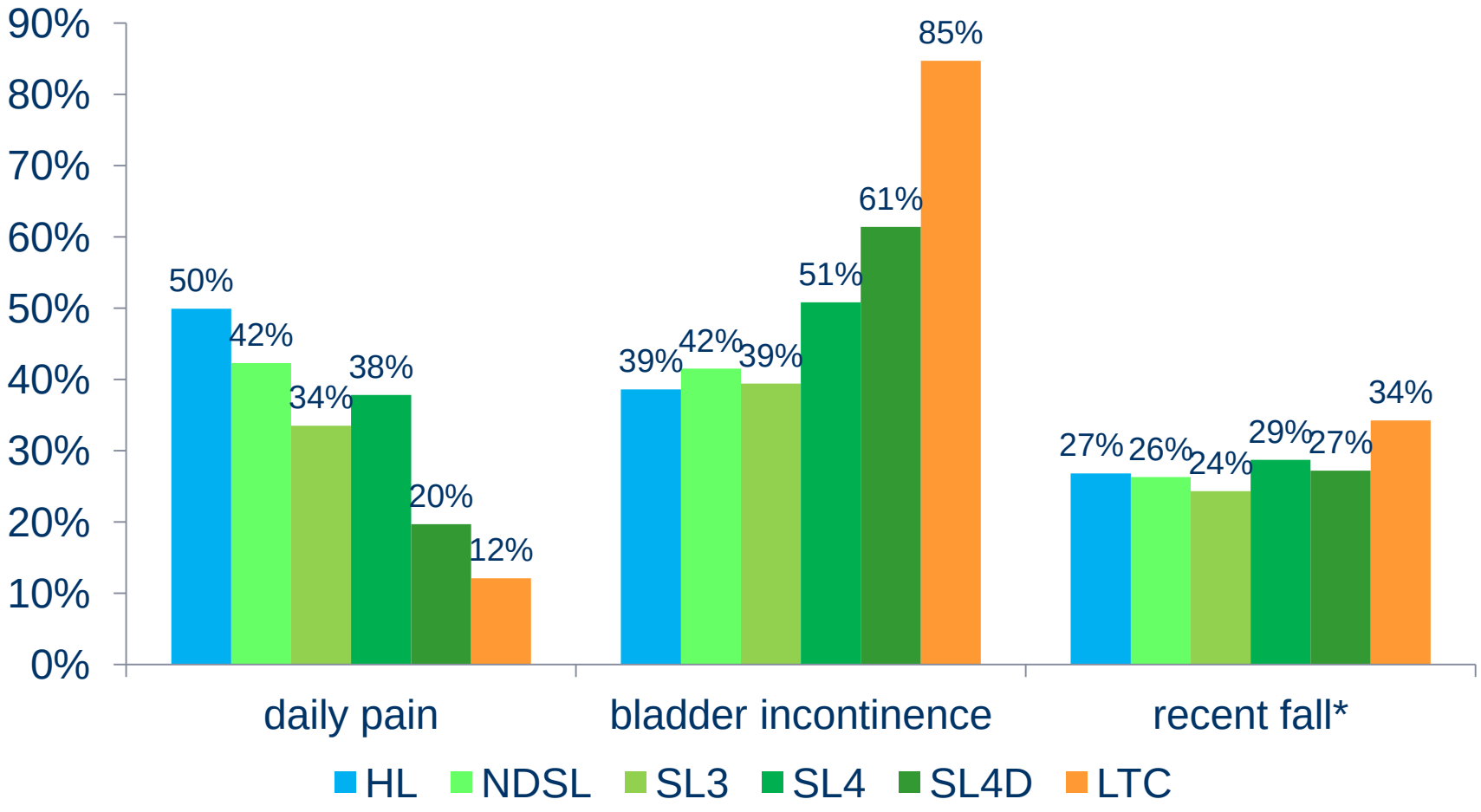
CPS scale, distribution among settings



Some scale measures

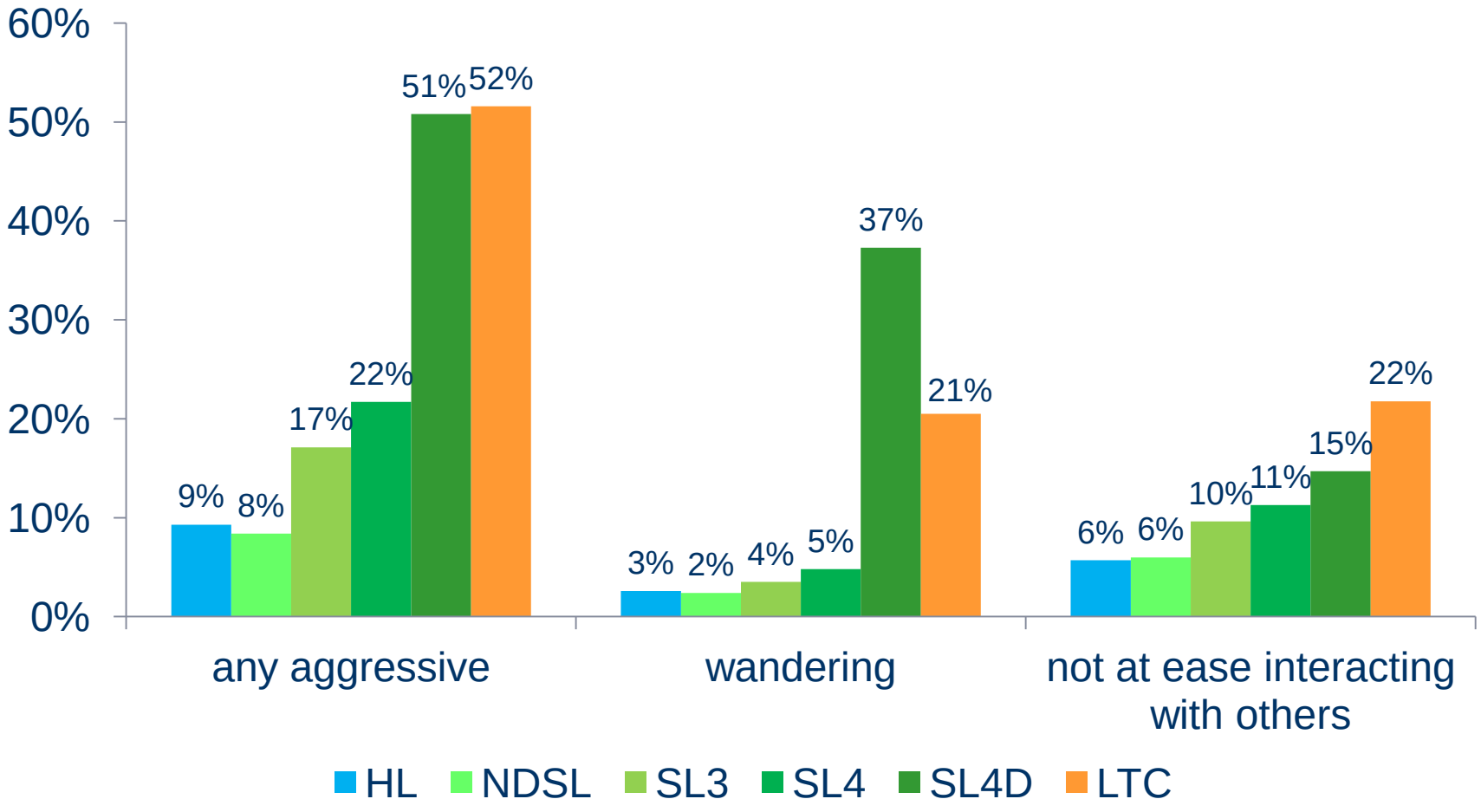


Other

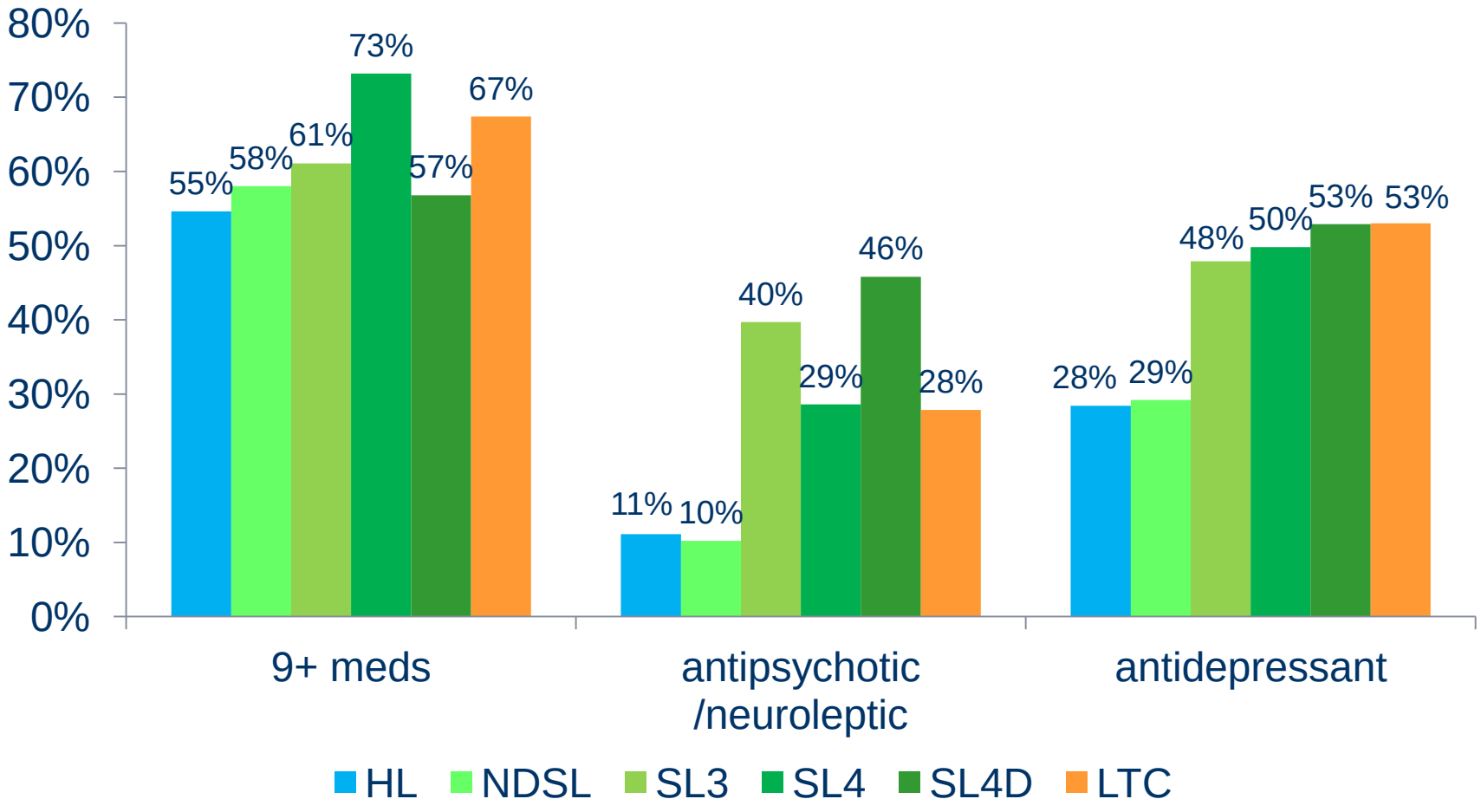


*HC: last 90 days
MDS 2.0: last 180 days

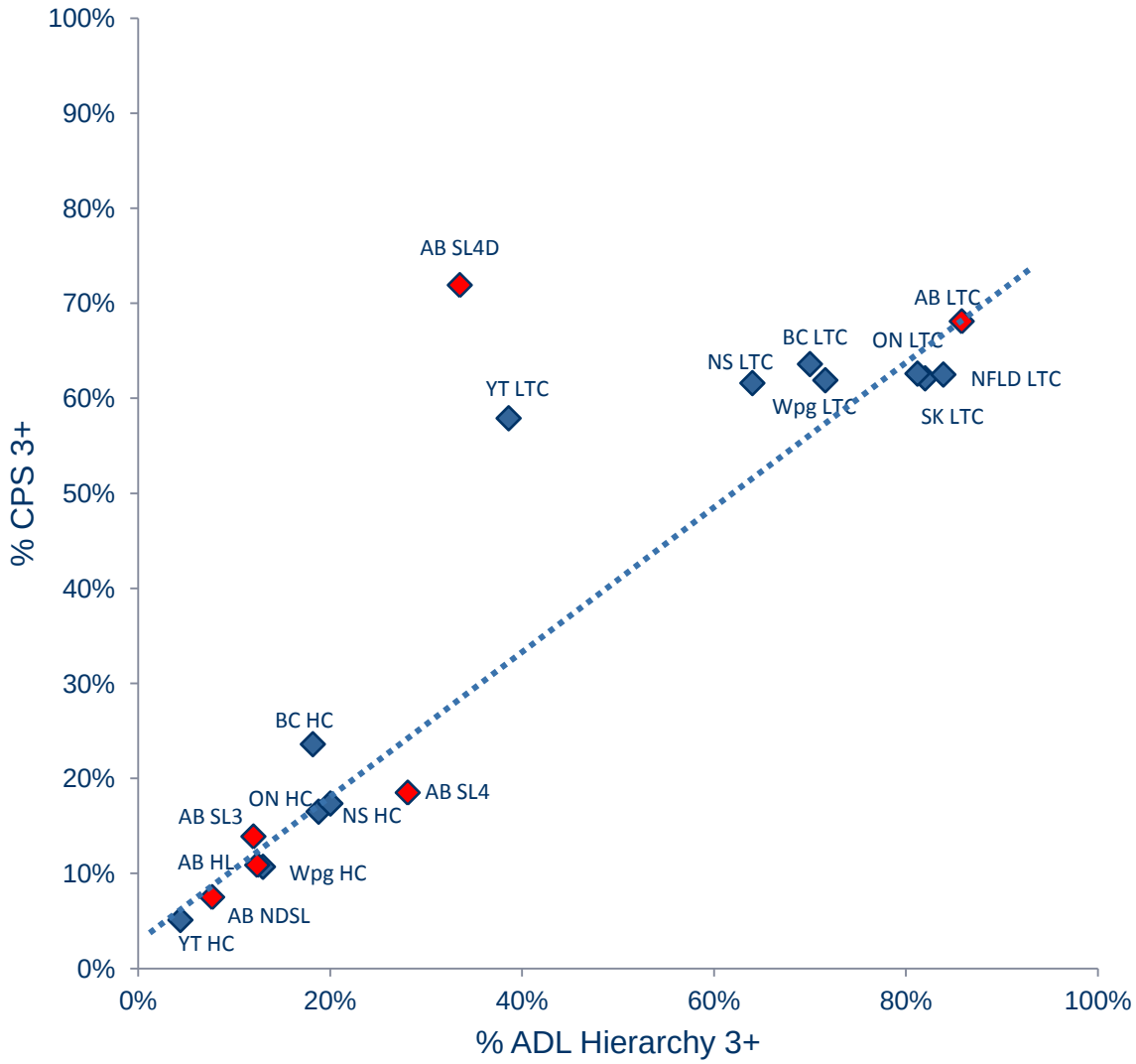
Behaviours, social



Medications



The National Picture



2) Quality Indicators

Quality Indicators

- Wish to understand quality of care in health services delivery
  - Very difficult to assess it directly
- Look for events or measures that we believe are related to quality of care
  - Desired (good outcomes), or undesired (bad)

At the heart of a Quality Indicator

- A QI is expressed as a ratio or percentage
- Example:
  - Among 120 assessed individuals, 32 fell in the last 90 days

  QI rate: $\frac{32}{120} = 26.7\%$

  - Are some of the 120 more likely to fall than others?
    - Is this risk the same as it was a year ago?
    - Is this risk the same for a comparison group?

Why risk adjust?

- Underlying factors associated with higher rates of the QI outcome
  - beyond the control of the care providers
  - unevenly distributed

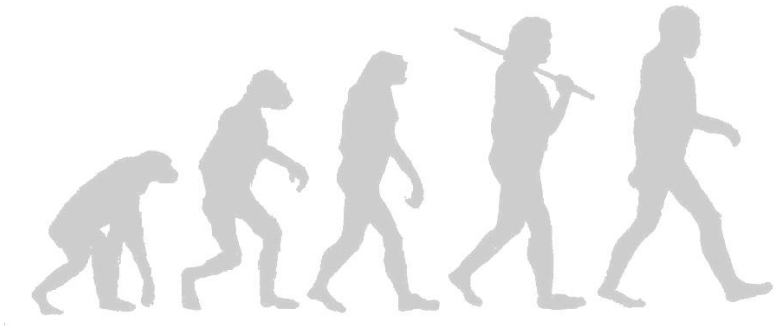
- Wish to put all on the same ‘scale’ so comparisons can be made more fairly
  - With others, or over time

Uses of Quality Indicators

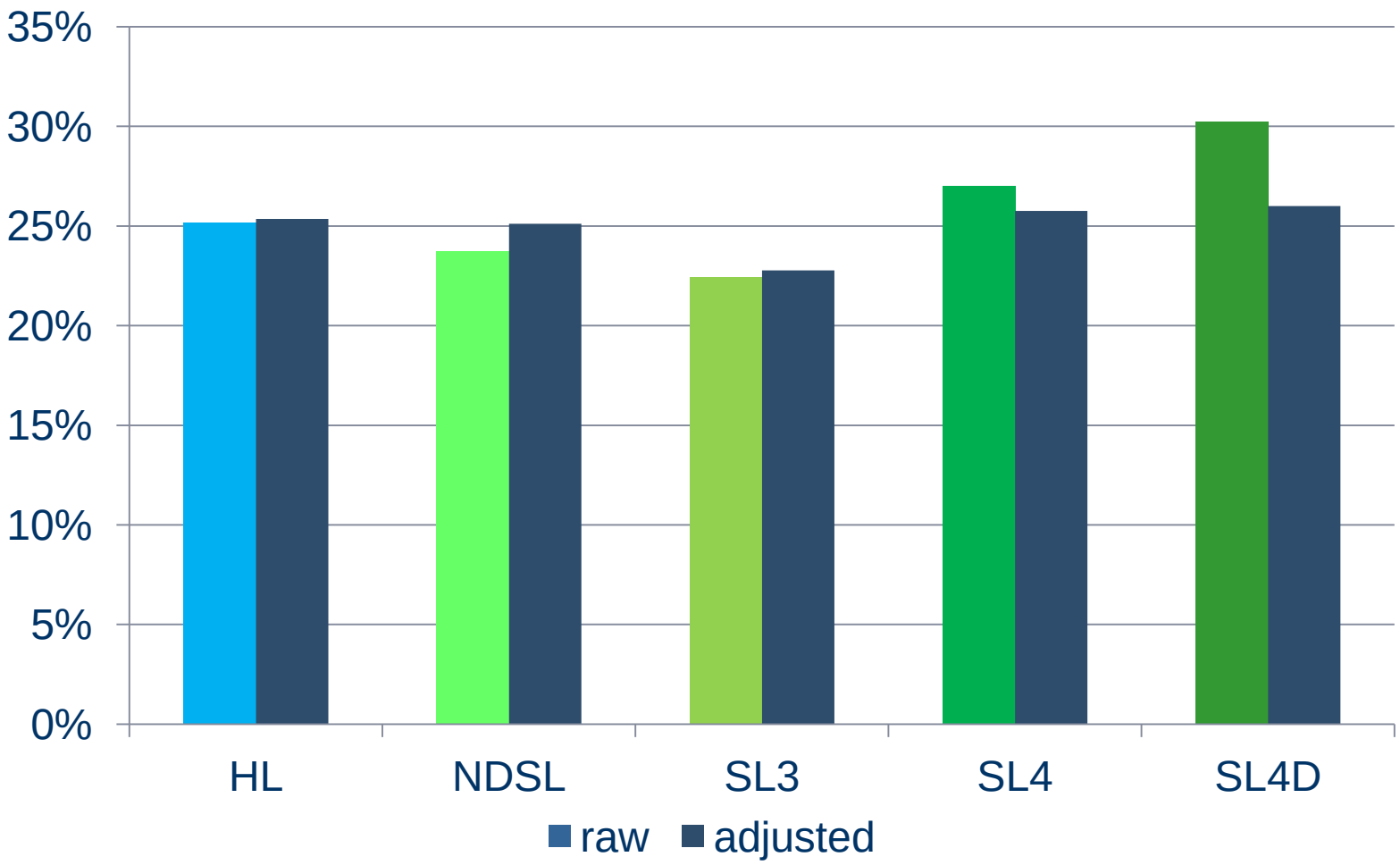
- System monitoring/review
- Quality improvement initiative monitoring
  - Requires timely data
- Public Reporting
  - US: CMS nursing homes
  - Health Quality Ontario: home care & LTC
  - CIHI Health System Performance initiative
    - 10 MDS 2.0 indicators, facility level, May 2015(?)

Quality Indicators: RAI-HC and MDS 2.0 and risk adjustment

RAI-HC	MDS 2.0
	1st generation • stratification/exclusion
Original interRAI HCQIs (2004) • covariate adjustment	2nd generation • covariate adjustment
New interRAI HCQIs (2014) • direct adjustment: stratified, weighted with covariate adjustment	3rd generation • direct adjustment: stratified, weighted with covariate adjustment

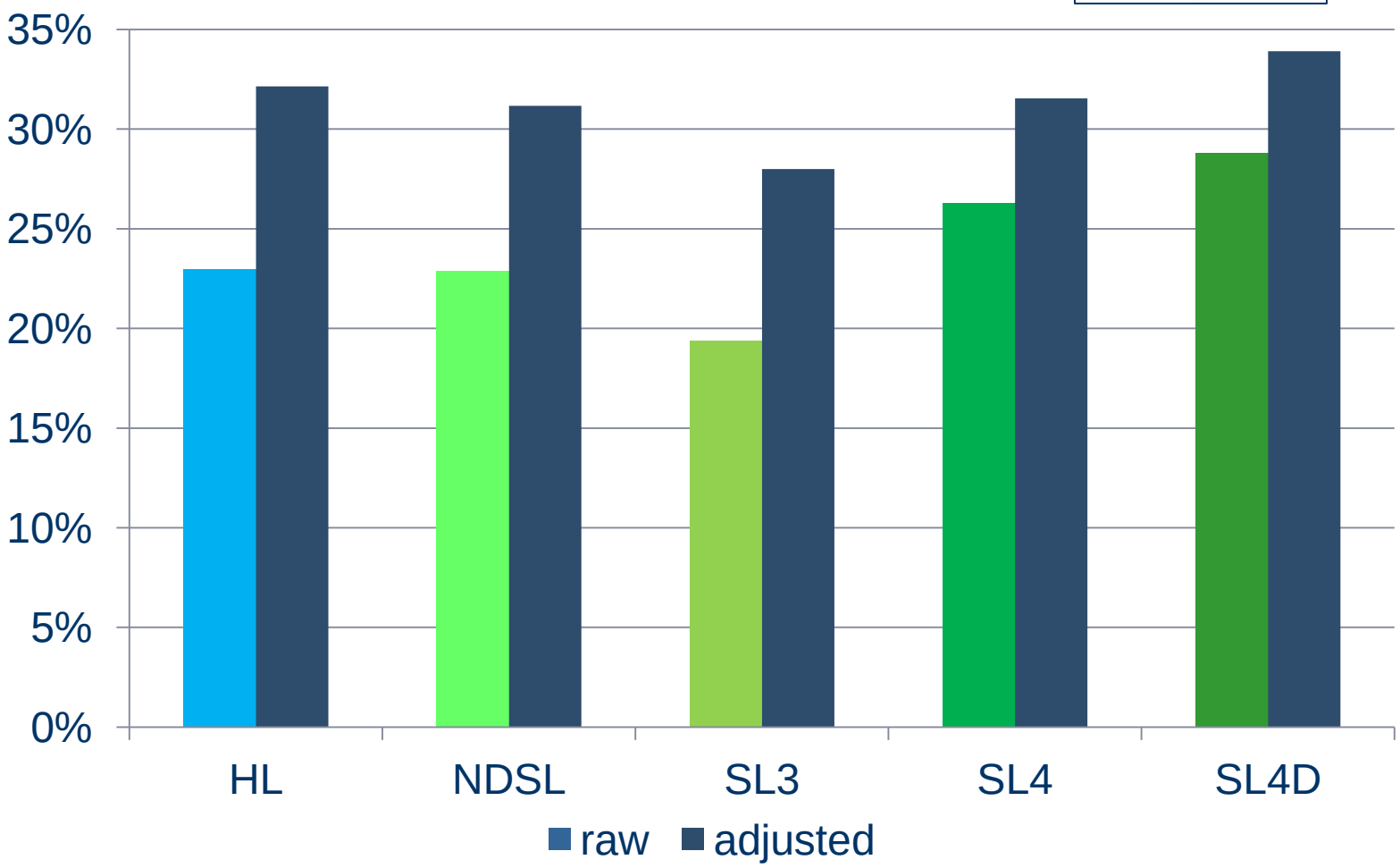


Original HCQI: Falls
(province, April 2013)



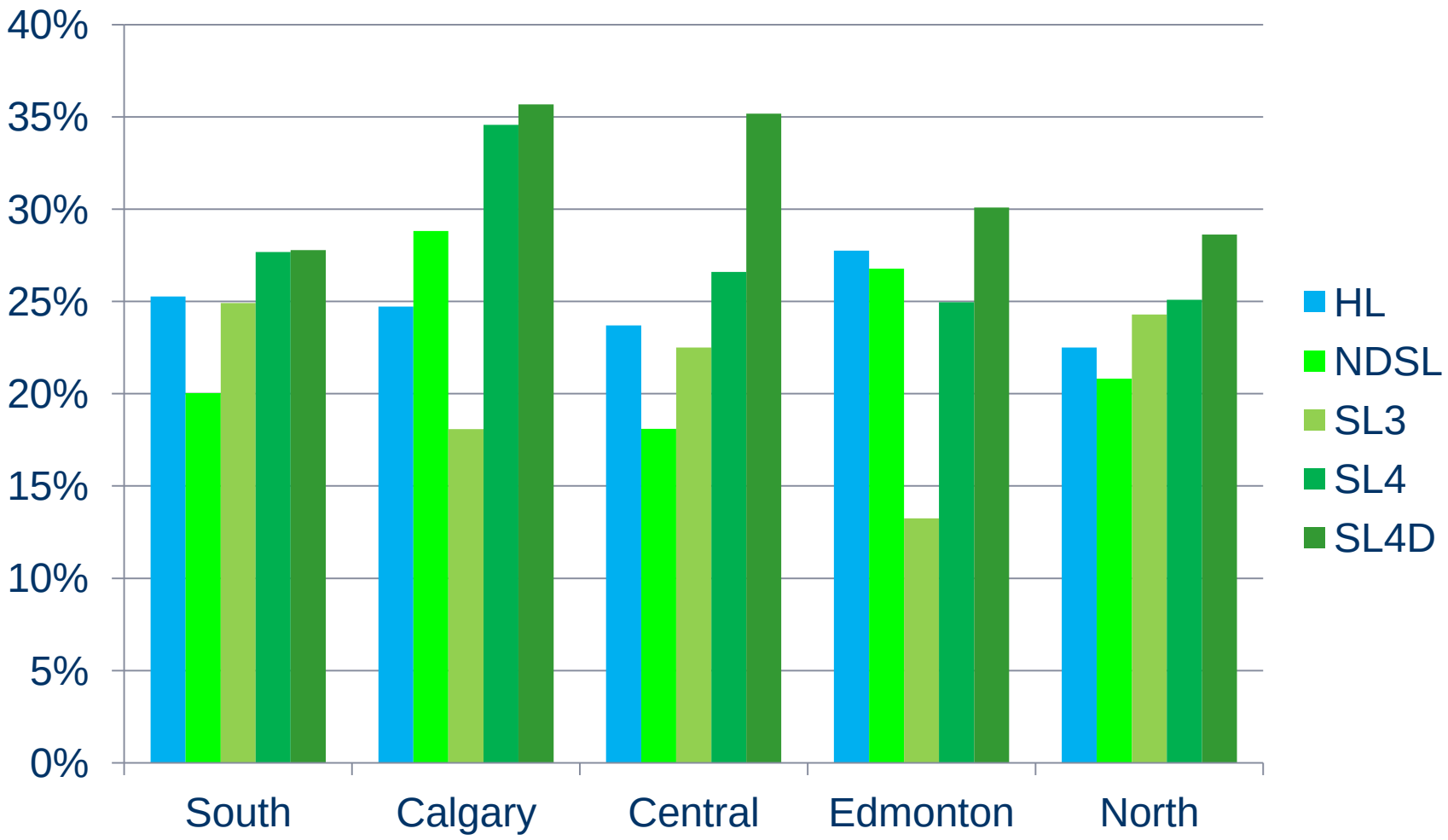
Risk adjustment: age 55+, stamina (<2 hrs activity last 3 days), unsteady gait, arthritis, CPS 3+

New HCQI: Falls
(province, fiscal 13/14)

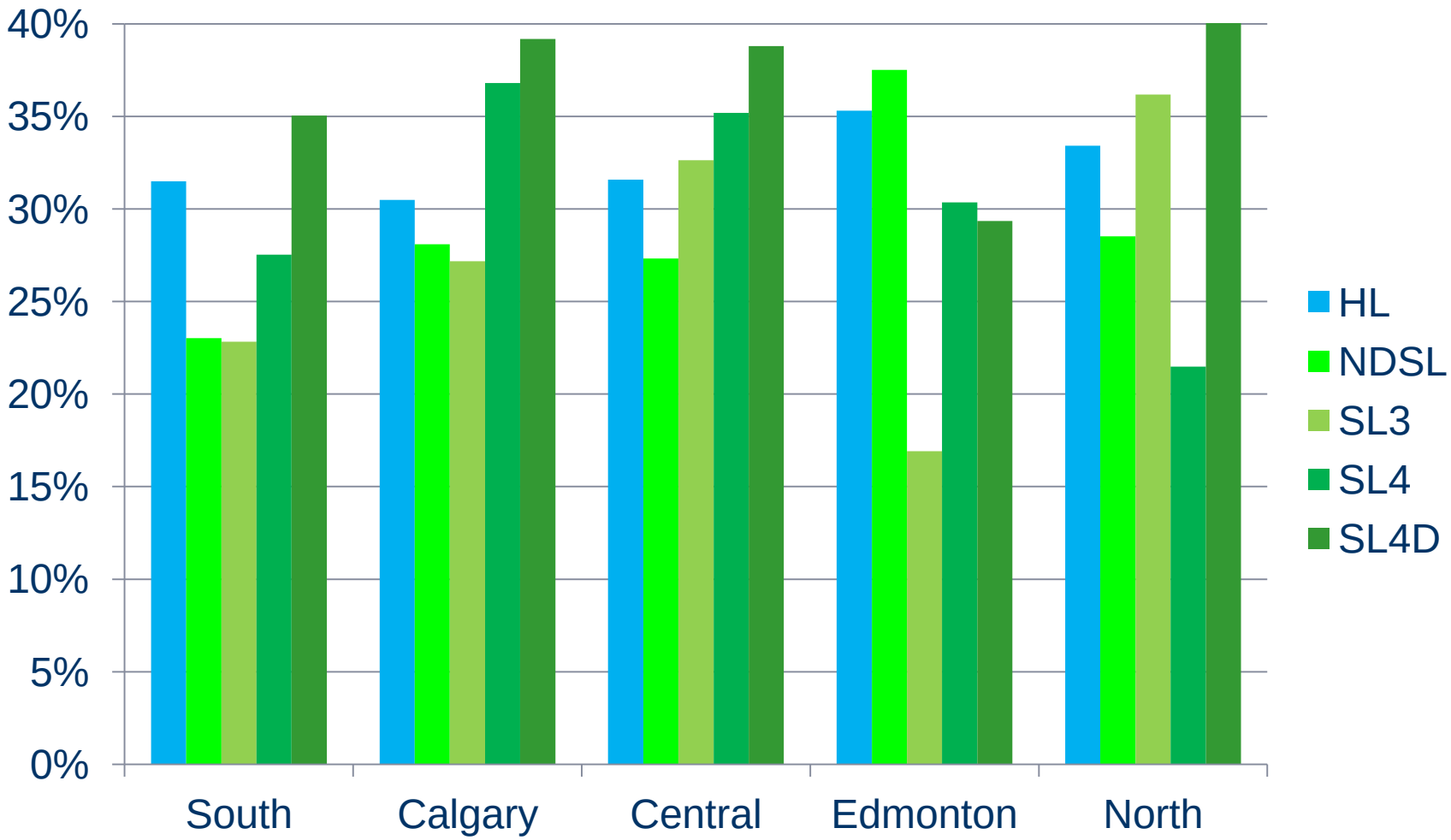


Risk adjustment: age 65, age85, time between assessments, locomotion, unsteady gait, walking device, institutional risk CAP, CPS 4+, ADLh 2+, DRS3+
Stratification: clinical risk (similar to CHESS)

Original HCQI: Falls
(by zone) – adjusted rates only

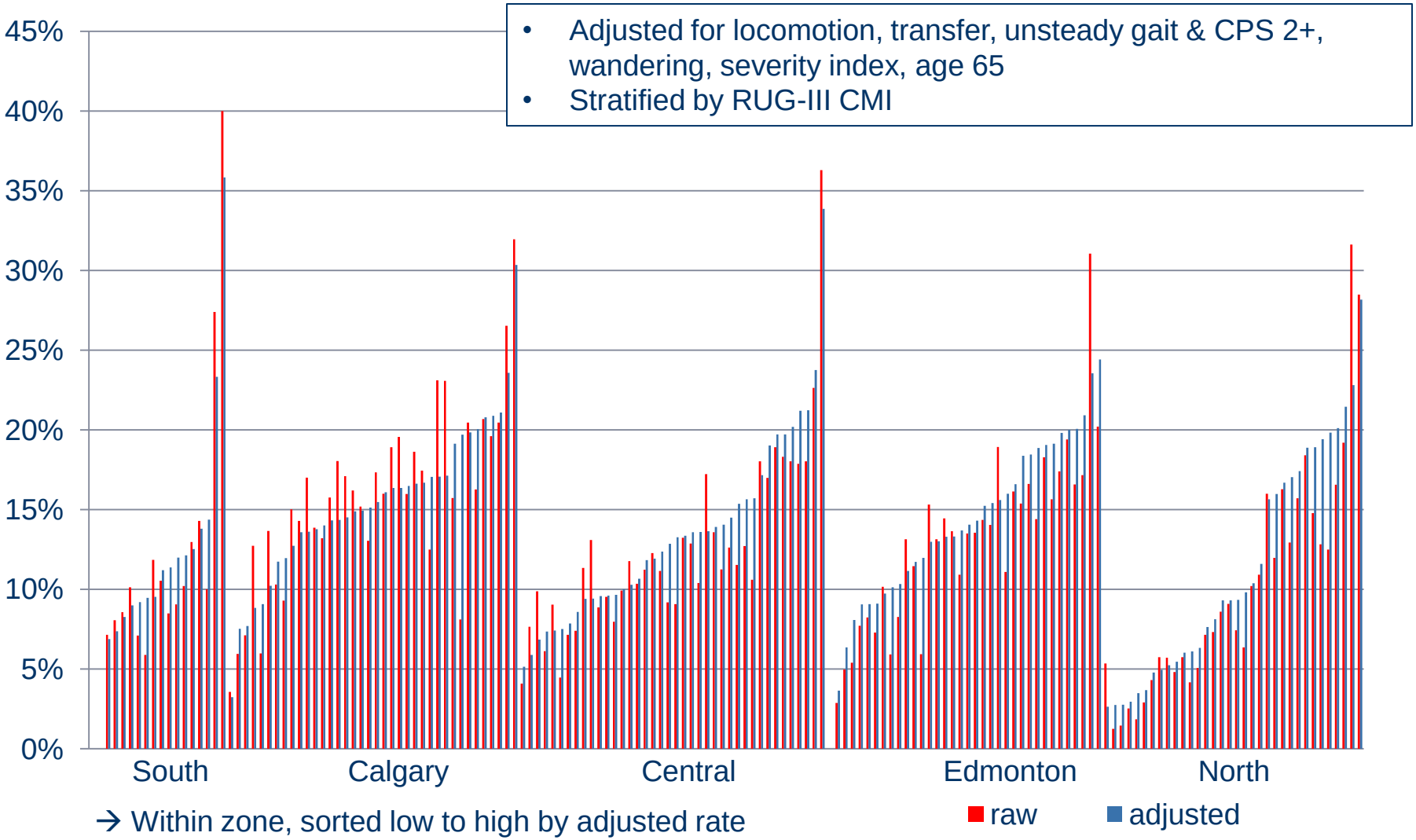


New HCQI: Falls
(by zone) – adjusted rates only



Long-term Care: Fall in the last 30 days

166 AB facilities with 20 or more in 4 rolling quarters



3) Hospitalization rates

Hospitalization Rates

Open Medicine, Vol 8, No 1 (2014)

Home > Vol 8, No 1 (2014) > Hogan

RESEARCH

High rates of hospital admission among older residents in assisted living facilities: opportunities for intervention and impact on acute care

DAVID B HOGAN, JOSEPH E AMUAH, LAUREL A STRAIN, WALTER P WODCHIS, ANDREA SOO, MISHA ELIASZIW, ANDREA GRUNEIR, BRAD HAGEN, GARY TEARE, COLLEEN J MAXWELL

- 2006-2008 study
- Compared samples of residents of Designated Assistive Living (now DSL) to long-term care
- Reported, after adjusting for risk, hospitalization rates much lower in LTC (14%, compared to 39%)

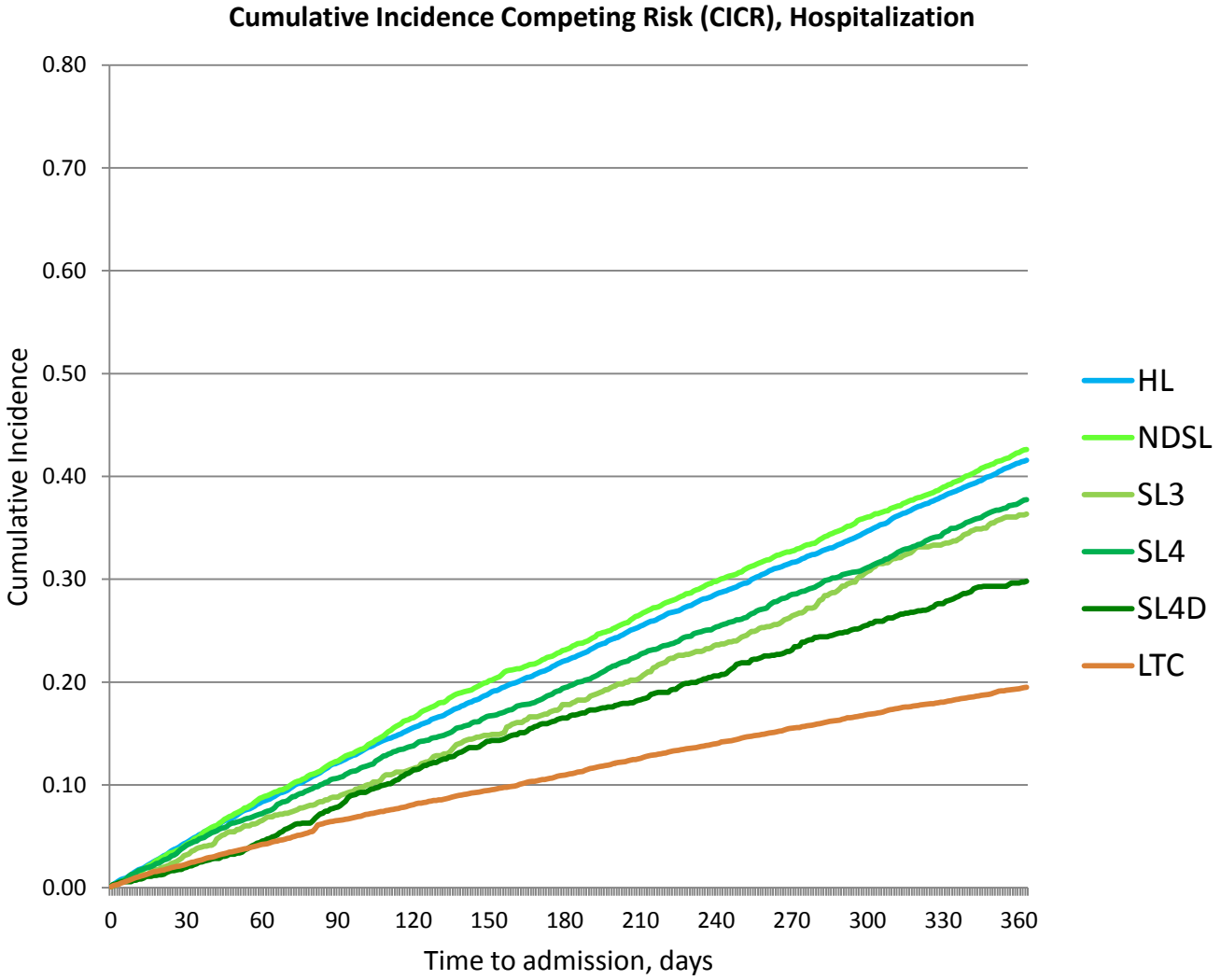
Q1: Is this finding still evident in more recent data?

Q2: What about other continuing care populations?

Methods

- Active continuing care clients/residents as of April 1, 2013 (not currently in hospital)
  - HL, NDSL, SL3, SL4, SL4D, LTC
  - With a RAI-HC/MDS 2.0 in last 12 months or the next month
  - Linked to DAD
- Time to first hospitalization, while in this setting, up to March 31, 2014
- Cumulative Incidence Competing Risk (CICR)
- Proportional hazards regression

Hospitalization Incidence (CICR)
April 1, 2013 cohort



CICR, Hogan et al, April 1, 2013 cohort

	6 months	12 months
Hogan et al, DAL	25.2 (22.6 – 27.8)	38.9 (35.9 – 41.9)
Hogan et al, LTC	8.0 (6.3 – 9.7)	13.7 (11.5 – 15.8)
HL	22.3 (21.6 – 22.9)	41.6 (40.8 – 42.4)
NDSL	23.3 (22.1 – 24.5)	42.6 (41.3 – 44.0)
SL3	18.0 (15.8 – 20.3)	36.5 (33.7 – 39.4)
SL4	19.6 (18.3 – 21.0)	37.8 (36.1 – 39.4)
SL4D	16.7 (14.9 – 18.7)	29.9 (27.5 – 32.3)
LTC	11.1 (10.5 – 11.6)	19.6 (18.9 – 20.3)

CICR (95% confidence interval)

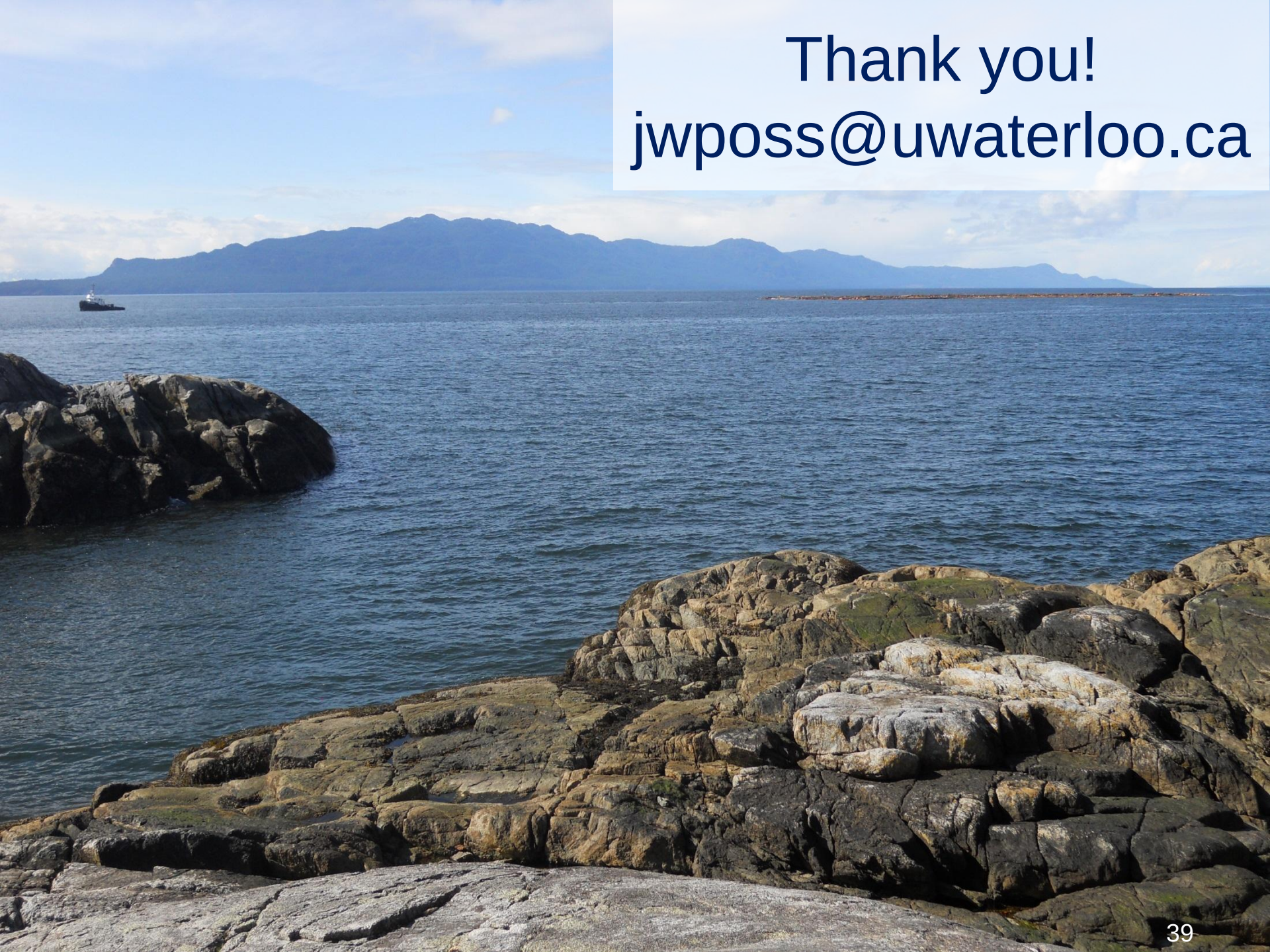
Proportional Hazard Model

Time to first hospitalization, April 1, 2013 cohort

Time to first hospitalization		hazard ratio	*95% confidence limits*	
female		0.79	*0.76*	*0.81*
age (ref=18 to 64)	65-74	1.37	*1.25*	*1.49*
	75-84	1.37	*1.21*	*1.56*
	85+	1.40	*1.20*	*1.62*
CHESS score(ref=0)	1	1.22	*1.18*	*1.26*
	2	1.42	*1.36*	*1.48*
	3	1.54	*1.45*	*1.63*
	4	2.03	*1.78*	*2.31*
	5	3.06	*1.95*	*4.82*
level of care on Apr 1, 2013 (ref=long term care)	HL	**2.32**	*2.14*	*2.52*
	NDSL	**2.45**	*2.23*	*2.69*
	SL3	**2.14**	*1.85*	*2.49*
	SL4	**2.15**	*1.95*	*2.38*
	SL4D	**1.62**	*1.43*	*1.84*
Zone (ref=Edmonton)	South	0.93	*0.86*	*1.00*
	Calgary	1.04	*0.98*	*1.10*
	Central	1.09	*0.97*	*1.21*
	North	1.02	*0.91*	*1.14*

Adjusting for risk and other factors

- Long-term care residents least likely to be hospitalized
- SL4D about 60% more likely
- HL, NDSL, SL3, SL4 settings similar to each other, over twice as likely as LTC



Thank you!

jwposs@uwaterloo.ca