



The impact of language discordance on end-of-life outcomes among Chinese residents in ethnic and non-ethnic long-term care homes

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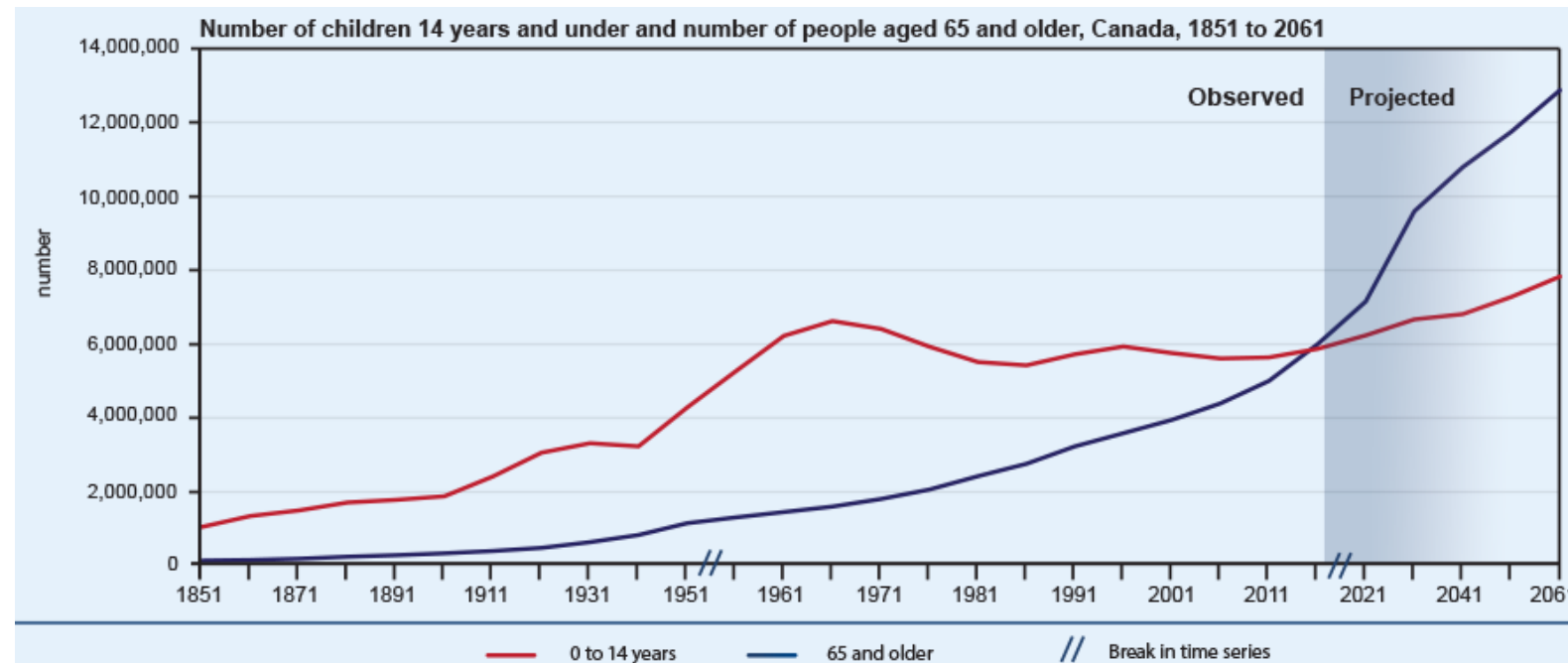
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CANADIAN DEMOGRAPHICS

- Demographic shift towards aging population
 - 20% increase in Canadian seniors from 2011 to 2016 (5.9 million people)
 - More seniors (16.9%) than children (16.6%) in Canada
 - 12+ million seniors by 2061



Source(s): Statistics Canada. 2017. *Age and sex, and type of dwelling data: Key results from the 2016 Census*. Statistics Canada Catalogue no. 11-001-X. Ottawa.

CANADIAN DEMOGRAPHICS

Politics

Record number of Canadians reporting first language other than French or English: StatsCan



English and French remain dominant languages, new census data shows



Darren Major · CBC News · Posted: Aug 17, 2022 9:40 AM ET | Last Updated: August 18



People gather on Wellington Street in front of Parliament Hill during Canada Day in Ottawa. (Lars Hagberg/The Canadian Press)

The number of Canadians who predominantly speak a language other than English or French hit a record high in 2021, according to new census data released on Wednesday.

English and French remain the dominant languages according to Statistics Canada, but the number of people who speak a non-dominant language at home grew to 4.6 million, or roughly 13 per cent of the population.

Meanwhile, at least one in four Canadians reported having at least one first language other than English or French.

"The results that we released today show in large part that trends are continuing in Canada," said Éric Caron-Malenfant, assistant director of the Centre for Demography at Statistics Canada, during a news conference on Wednesday.

- Demographic shift towards a more ethnically and linguistically diverse population
 - Between 2016 and 2021, number of people who speak a non-official language (neither English or French) at home grew to 4.6 million (~13% of the total Canadian population)
 - Among those 65+, 16% speak a non-official language at home

Which non-official languages are growing in Canada

Number of Canadians who mostly speak each language at home

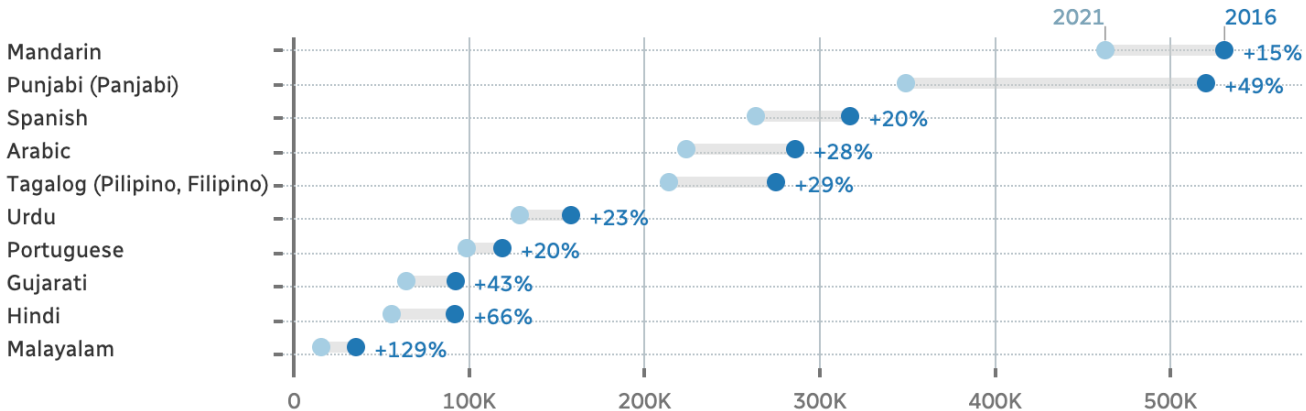
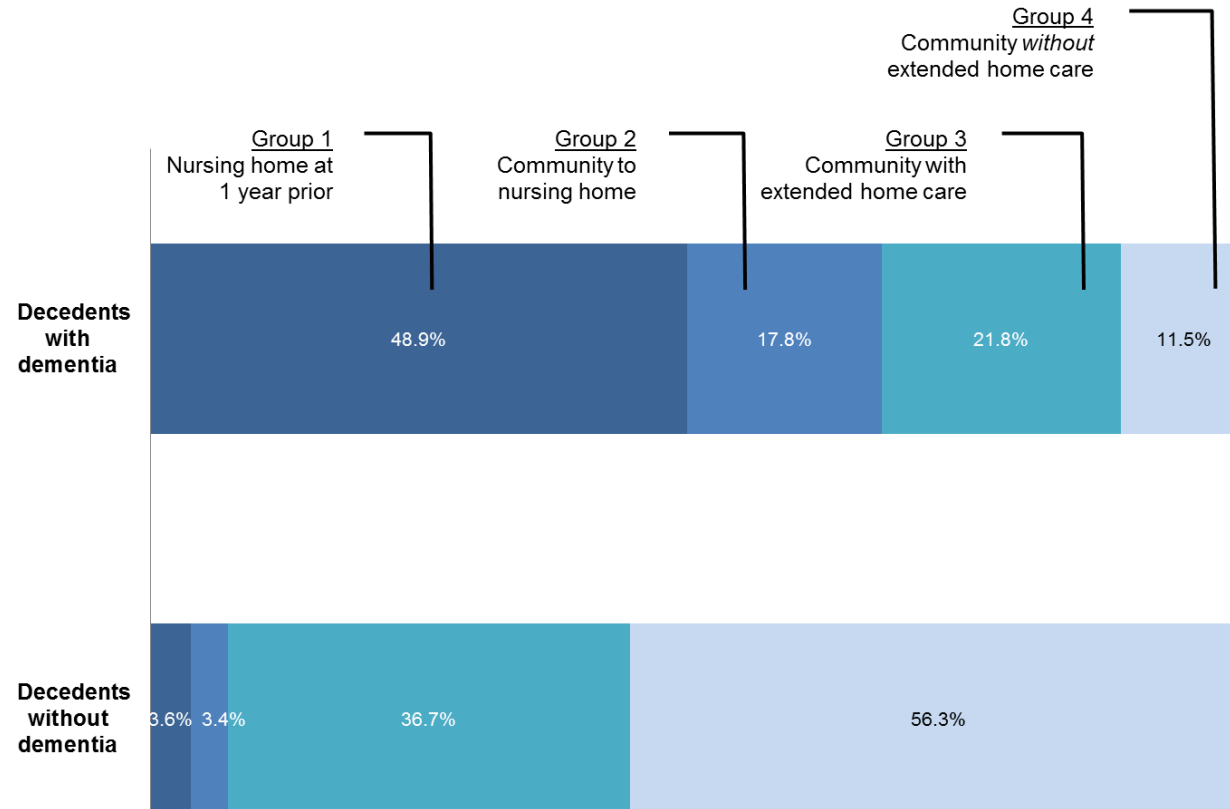


Chart: Graeme Bruce • Source: Statistics Canada • CBC News

CANADIAN DEMOGRAPHICS



Long-term care statistics:

- ~40% of the population 85+ will receive care in a nursing home prior to death
- Canadian seniors average 1.57 episodes of care in a nursing home (equivalent to 674 days)
- Average lifetime cost: \$127,000 CAD

Source(s): Hsu et al. Health Care Transitions Among People with Dementia in the Last Year of Life. *Journal of Pain and Symptom Management*, 52(6): e65.

ICES

ICES is a not-for-profit research institute encompassing a community of research, data and clinical experts, and a secure and accessible array of Ontario's health-related data. Presently, ICES holds over 100 health-related datasets and cohorts.

IC/ES Data Dictionary

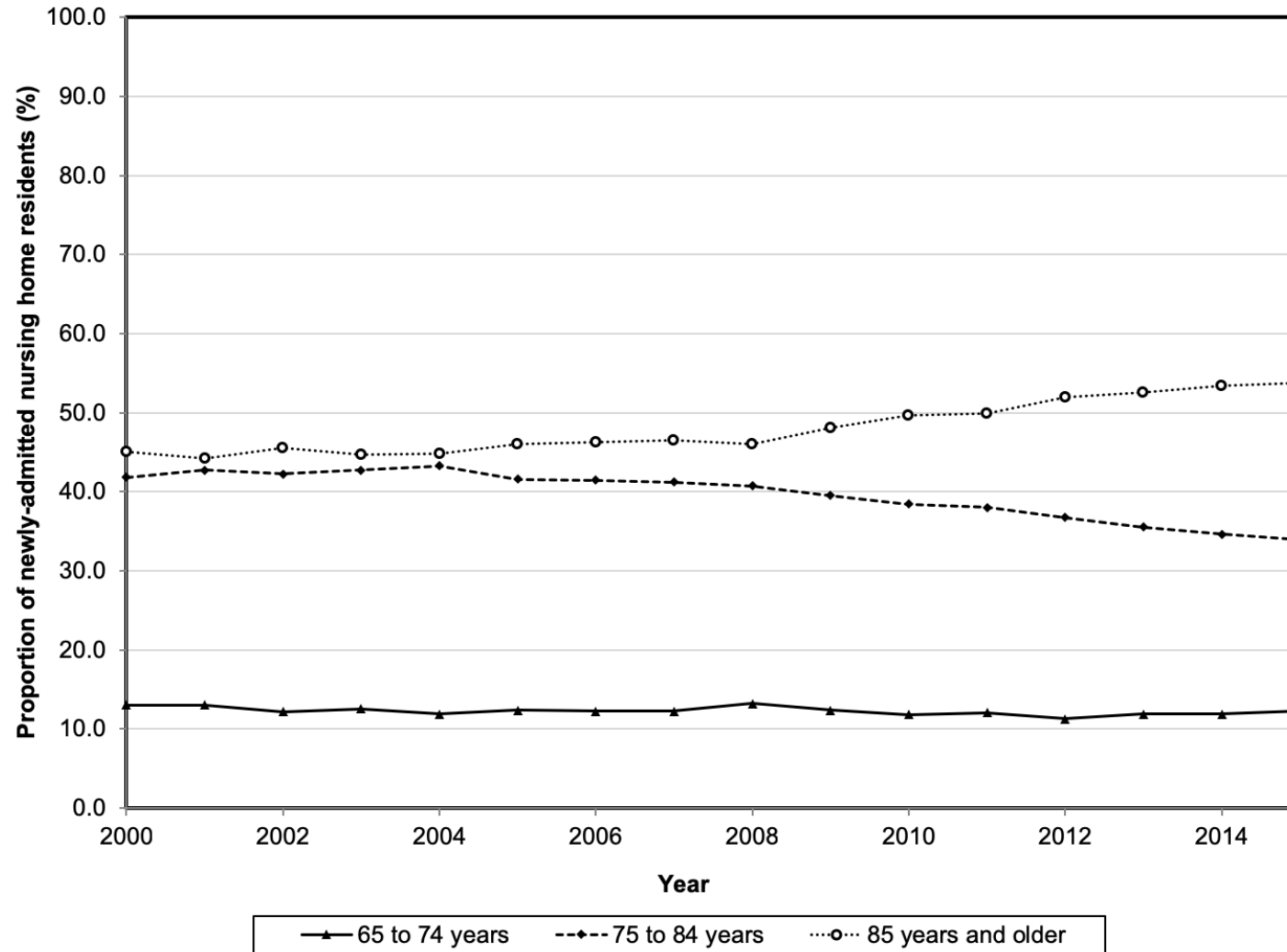
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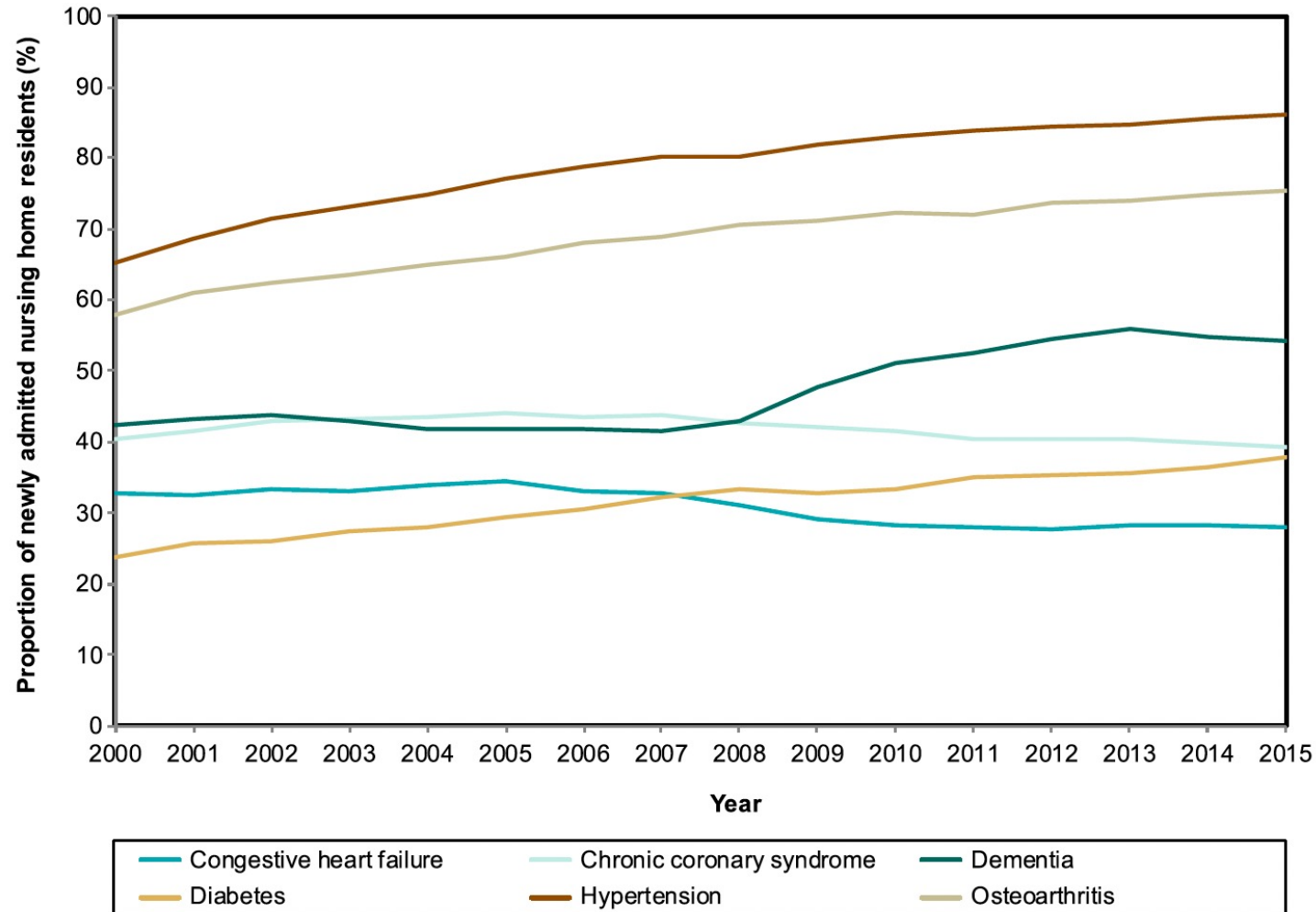
Category	PHI *	Library	Description	Date Range	Last Updated	Update Frequency
Health Services	Yes	ADP	Assistive Devices Program	Apr 2000-Jan 2018	Jan 25, 2019	TBA
Acquired Cohorts / Registries	Yes	ALR	Cancer Activity Level Reporting	Systemic Apr 2005-Aug 2018 Radiation Apr 2005-Aug 2018	Jan 24, 2019	Annual
ICES-derived Cohorts	Yes	ASTHMA	Ontario Asthma dataset	Prevalent Apr 1993-Mar 2018 Incident Apr 1996-Mar 2018	Apr 15, 2019	Annual
Acquired Cohorts / Registries	Yes	BORN	Better Outcomes Registry and Network	Apr 2006-Mar 2014	Aug 30, 2018	Annual
Acquired Cohorts / Registries	Yes	BRTRC	Bariatric Registry	Apr 2010-Oct 2016	Jul 11, 2017	TBA
Population & Demographics	Yes	CAPE	Client Agency Program Enrolment	Mar 1999-Jun 2019	Jul 30, 2019	Bi-monthly
Health Services	Yes	CBI	Community Business Intelligence	Jan 1980-Mar 2017	Mar 27, 2019	Bi-annual
Surveys	Yes	CCHS	Canadian Community Health Survey	Jan 2001-Dec 2017	Mar 4, 2019	Annual / Biennial
Acquired Cohorts / Registries	Yes	CCN	Cardiac Care Network	Apr 2008-Apr 2018	Aug 21, 2018	Annual
Health Services	Yes	CCRS	Continuing Care Reporting System	Jul 1996-May 2018	Dec 3, 2018	Annual
Population & Demographics	No	CENSUS	Ontario Census Area Profiles	1991, 1996, 2001, 2006, 2011, 2016	Aug 7, 2018	Every 5 years
Population & Demographics	No	CENSUSCA	Canada Census Area Profiles	2001, 2006, 2011, 2016	Aug 7, 2018	Every 5 years
Health Services	Yes	CERNER	Laboratory Data from South-Western Ontario Hospitals	Apr 1999-Mar 2012		TBA
Acquired Cohorts / Registries	Yes	CFDR	Canadian Cystic Fibrosis Data Registry	Jan 1993-Apr 2011	Dec 9, 2015	TBA
ICES-derived	Yes	CHF	Congestive Heart Failure	Prevalent Apr 1991-Mar 2017	Apr 17, 2018	Annual

INCIDENT ADMISSIONS TO LTC



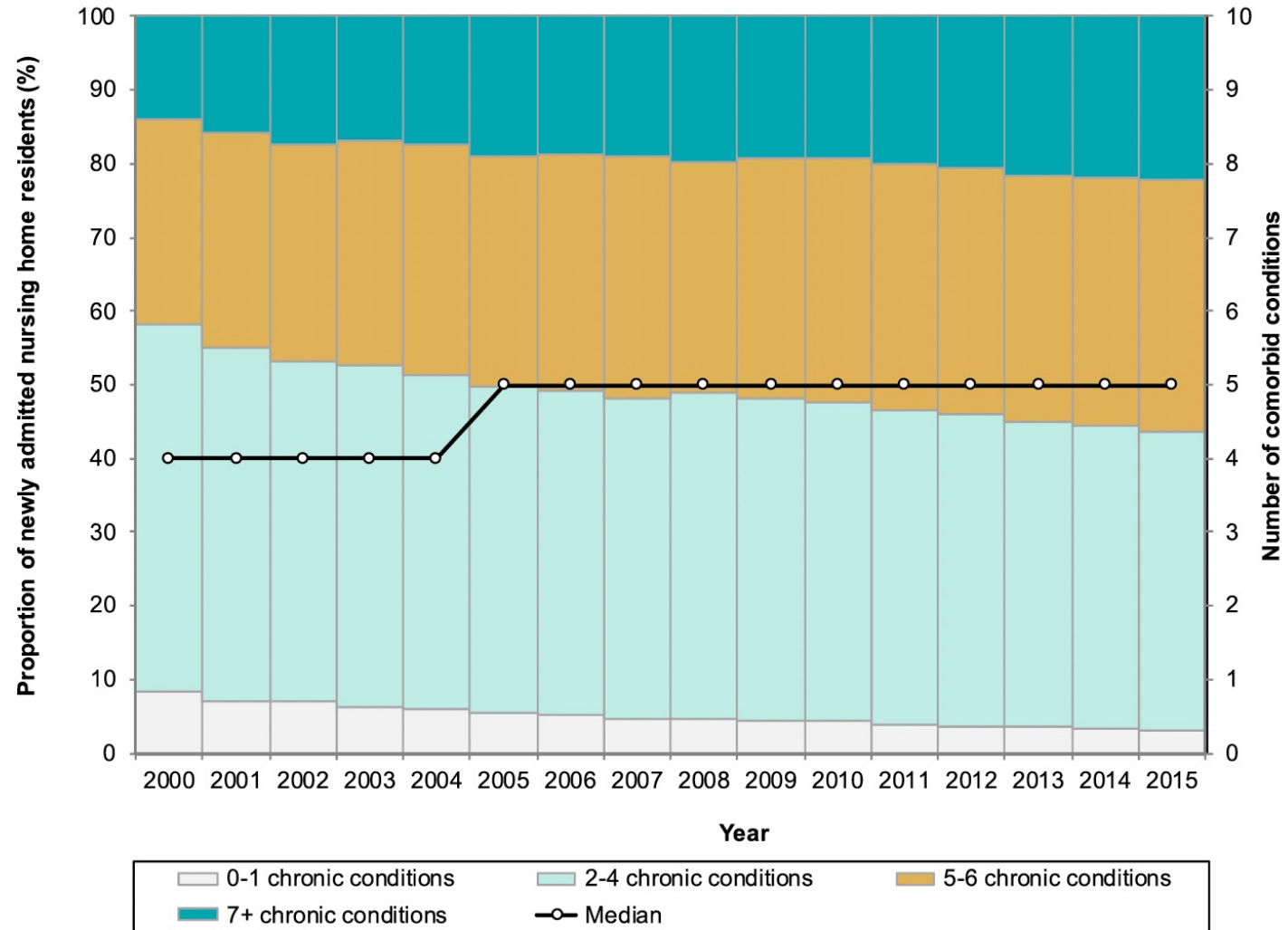
Source(s): Ng R, Lane N, Tanuseputro P, Mojaverian N, Talarico R, Wodchis WP, Bronskill SE, Hsu AT. Increasing Complexity of New Nursing Home Residents in Ontario, Canada: A Serial Cross-Sectional Study. *J Am Geriatr Soc.* 2020 Jun;68(6):1293-1300.

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A blue-tinted photograph of a person in a hospital bed being held by a caregiver. The person in the bed is wearing a patterned hospital gown and has their hands clasped. The caregiver is wearing a plaid shirt and is holding the person's hands. The background is a plain wall.

The impact of language discordance on end-of-life outcomes

RESEARCH OBJECTIVE

- To develop a better understanding of the characteristics and care experiences of ethnic minority populations receiving palliative care in long-term care homes in Ontario using population-level administrative data



STUDY POPULATION

- All deceased individuals 65+ in one of Ontario's 630 LTC homes between March 1, 2019 and December 31, 2019
- Dataset:
 - Continuing Care Reporting System (CCRS), which contains assessment data captured using the Resident Assessment Instrument Minimum Data Set (RAI-MDS)
 - A comprehensive, multi-dimensional clinical assessment instrument that contains nearly 500 data elements capturing LTC residents' sociodemographic profile, cognitive and functional capacities, chronic diseases and comorbidities, signs of health instability, as well as recent healthcare use.
- Baseline characteristics:
 - Age
 - Biological sex/sex assigned at birth
 - Immigrant status
 - Number of chronic conditions (AMI, arrhythmia, cancer, congestive heart failure, asthma, COPD, coronary artery disease, stroke, dementia, diabetes, hypertension, osteoporosis, osteoarthritis, rheumatoid arthritis, renal failure, mood disorder and other mental health conditions)
 - Activities of Daily Living (ADL) Hierarchy Scale
 - Cognitive Performance Scale
 - Changes in Health, End-stage disease and Symptoms and Signs (CHESS) score

MINORITY STATUS

- Residents were coded based on primary language spoken:

		ETHNIC database		83.9%
		ETHNIC = C	All other	
CCRS - LTC	AB8=ZHO; HAK; CMN; MNP; CDO; NAN; CZO; CPX; WUU; YUE	1976	379	
	All other languages	578	73612	

- Designated and non-designated ethnic homes:
 - 7 provincially designated facilities
 - 4 non-designated facilities

	Non-designated Chinese LTC home with proportions of Chinese (20%)	Non-designated Chinese LTC home with proportions of Chinese (19%)	Non-designated Chinese LTC home with proportions of Chinese (18%)	Non-designated Chinese LTC home with proportions of Chinese (17%)	Non-designated Chinese LTC home with proportions of Chinese (16%)	Non-designated Chinese LTC home with proportions of Chinese (15%)	Non-designated Chinese LTC home with proportions of Chinese (14%)	Non-designated Chinese LTC home with proportions of Chinese (13%)	Non-designated Chinese LTC home with proportions of Chinese (12%)	Non-designated Chinese LTC home with proportions of Chinese (11%)
Number of LTC homes in Ontario	4	4	4	4	6	9	9	12	12	15
Number of Chinese speaking residents in Ontario (in the above homes on March 1 2019)	590	590	590	590	664	745	745	807	807	892

OUTCOMES OF INTEREST

- Reports and management of pain within the last 6 months of life
 - Defined using the Pain Scale from the RAI–MDS, where score was 2+ (based on the frequency of pain and intensity of pain)
 - Prescription of opioid and non-opioid analgesics in the last 2 weeks of life
- Hospitalization and emergency room visits in the last 3 days of life
 - Captured using the Discharge Abstract Database (DAD) and the National Ambulatory Care Reporting System (NACRS) data
- Death in hospital
 - Provincial vital statistics registry, RAI–MDS, and DAD

BASELINE CHARACTERISTICS

		Chinese in Chinese LTC homes (designated & non-designated)	Chinese in all other LTC homes	Non-Chinese in Chinese LTC homes (designated & non-designated)	Non-Chinese in all other LTC homes
		N=262	N=161	N=99	N=18,533
Age at death (years)	65-74 - n (%)	*1-5	10 (6.2%)	*7-11	1,364 (7.4%)
	75-84 - n (%)	33 (12.6%)	29 (18.0%)	25 (25.3%)	4,285 (23.1%)
	85-94 - n (%)	142 (54.2%)	89 (55.3%)	40 (40.4%)	9,339 (50.4%)
	95+ - n (%)	*82-86	33 (20.5%)	*23-27	3,545 (19.1%)
Biological sex	F - n (%)	173 (66.0%)	109 (67.7%)	57 (57.6%)	11,843 (63.9%)
	M - n (%)	89 (34.0%)	52 (32.3%)	42 (42.4%)	6,690 (36.1%)
Urban/rural status of facility	1 - n (%)	262 (100.0%)	161 (100.0%)	99 (100.0%)	15,993 (86.3%)
	2 - n (%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2,540 (13.7%)
Immigrant status	Long term resident: landed before 1985 or Canadian born - n (%)	147 (56.1%)	96 (59.6%)	82 (82.8%)	17,965 (96.9%)
	Recent or early immigrant (<37 years) - n (%)	115 (43.9%)	65 (40.4%)	17 (17.2%)	568 (3.1%)

HEALTH CHARACTERISTICS

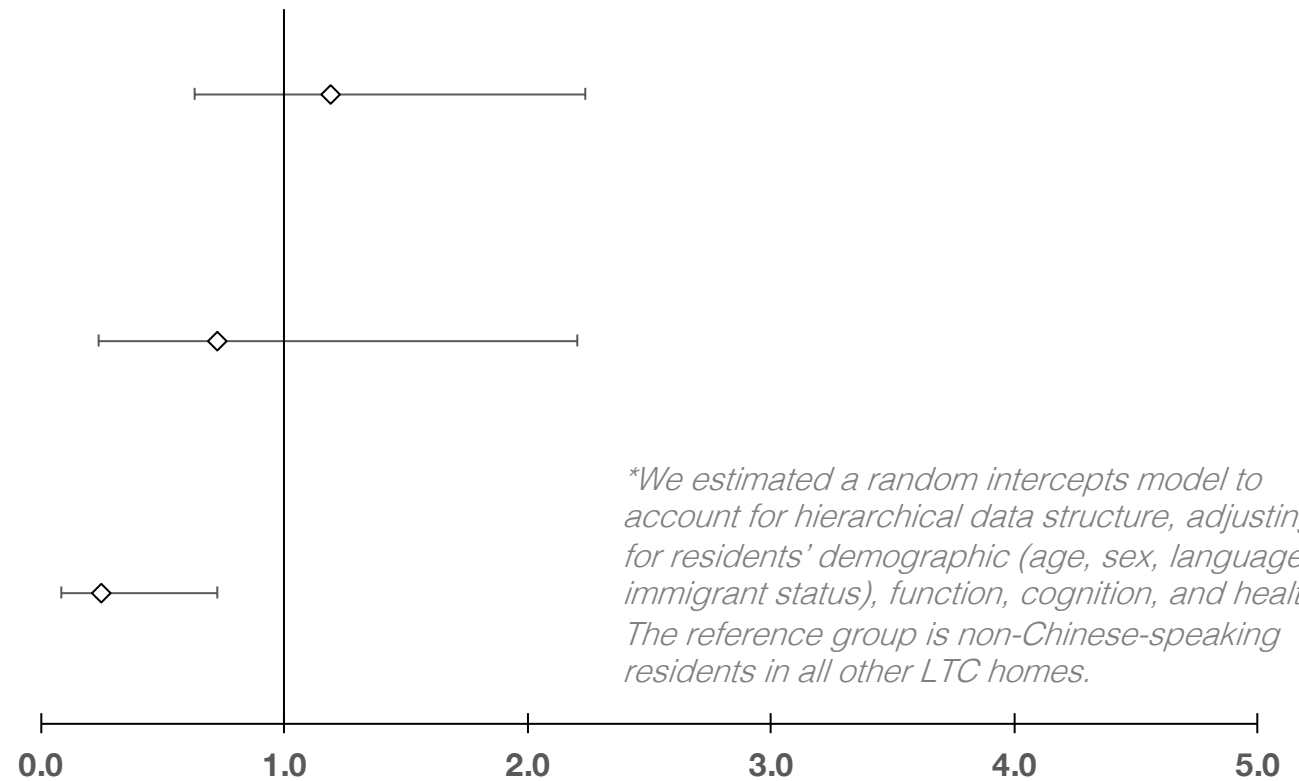
		Chinese in Chinese LTC homes (designated & non-designated)	Chinese in all other LTC homes	Non-Chinese in Chinese LTC homes (designated & non-designated)	Non-Chinese in all other LTC homes
		N=262	N=161	N=99	N=18,533
Number of prevalent conditions	0-2 - n (%)	*1-5	10 (6.2%)	*5-9	560 (3.0%)
	3 - n (%)	*9-13	11 (6.8%)	*4-8	906 (4.9%)
	4 - n (%)	26 (9.9%)	13 (8.1%)	11 (11.1%)	1,755 (9.5%)
	5 - n (%)	35 (13.4%)	24 (14.9%)	11 (11.1%)	2,692 (14.5%)
	6 - n (%)	40 (15.3%)	21 (13.0%)	11 (11.1%)	3,050 (16.5%)
	7+ - n (%)	147 (56.1%)	82 (50.9%)	53 (53.5%)	9,570 (51.6%)
Activities of Daily Living (ADL) - Self-Performance Hierarchy	0-2 - n (%)	10 (3.8%)	*3-7	*1-5	702 (3.8%)
	3-4 - n (%)	100 (38.2%)	*46-50	*33-37	7,214 (38.9%)
	5-6 - n (%)	152 (58.0%)	108 (67.1%)	61 (61.6%)	10,617 (57.3%)
Cognitive Performance Scale	0-2 - n (%)	54 (20.6%)	25 (15.5%)	20 (20.2%)	3,845 (20.7%)
	3-4 - n (%)	130 (49.6%)	70 (43.5%)	43 (43.4%)	8,153 (44.0%)
	5-6 - n (%)	78 (29.8%)	66 (41.0%)	36 (36.4%)	6,535 (35.3%)
Changes in Health, End-Stage Disease and Symptoms and Signs Scale	0-2 - n (%)	198 (75.6%)	119 (73.9%)	69 (69.7%)	11,963 (64.5%)
	3-4 - n (%)	58 (22.1%)	*30-34	*25-29	5,152 (27.8%)
	5 - n (%)	6 (2.3%)	*8-12	*1-5	1,418 (7.7%)

SEVERE PAIN IN LAST 6 MONTHS

Chinese Speaking Resident in a Non-Chinese Home

Non-Chinese Speaking Resident in a Primarily Chinese-Speaking Home

Chinese Speaking Resident in a Primarily Chinese-Speaking Home

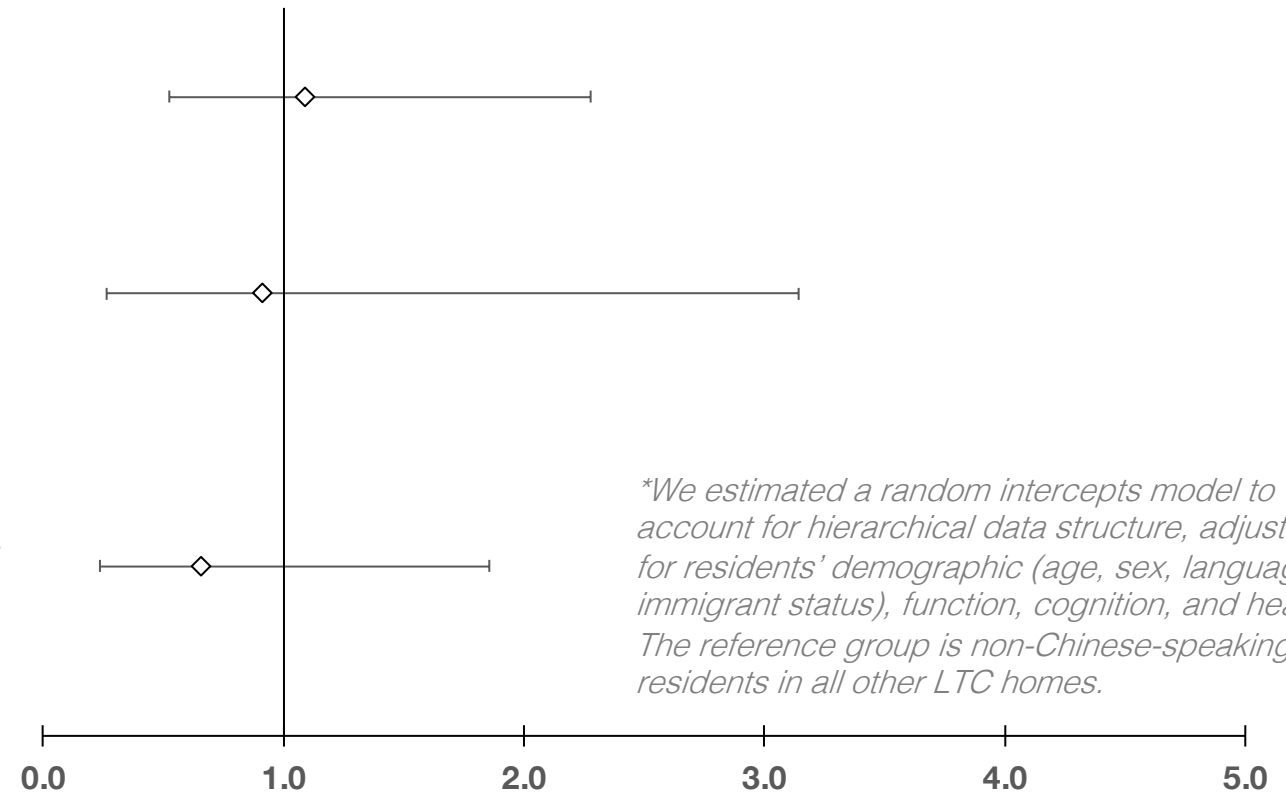


ED VISITS AT END OF LIFE

Chinese Speaking Resident in a
Primarily Chinese-Speaking Home

Non-Chinese Speaking Resident in a
Primarily Chinese-Speaking Home

Chinese Speaking Resident in a Non-
Chinese Home



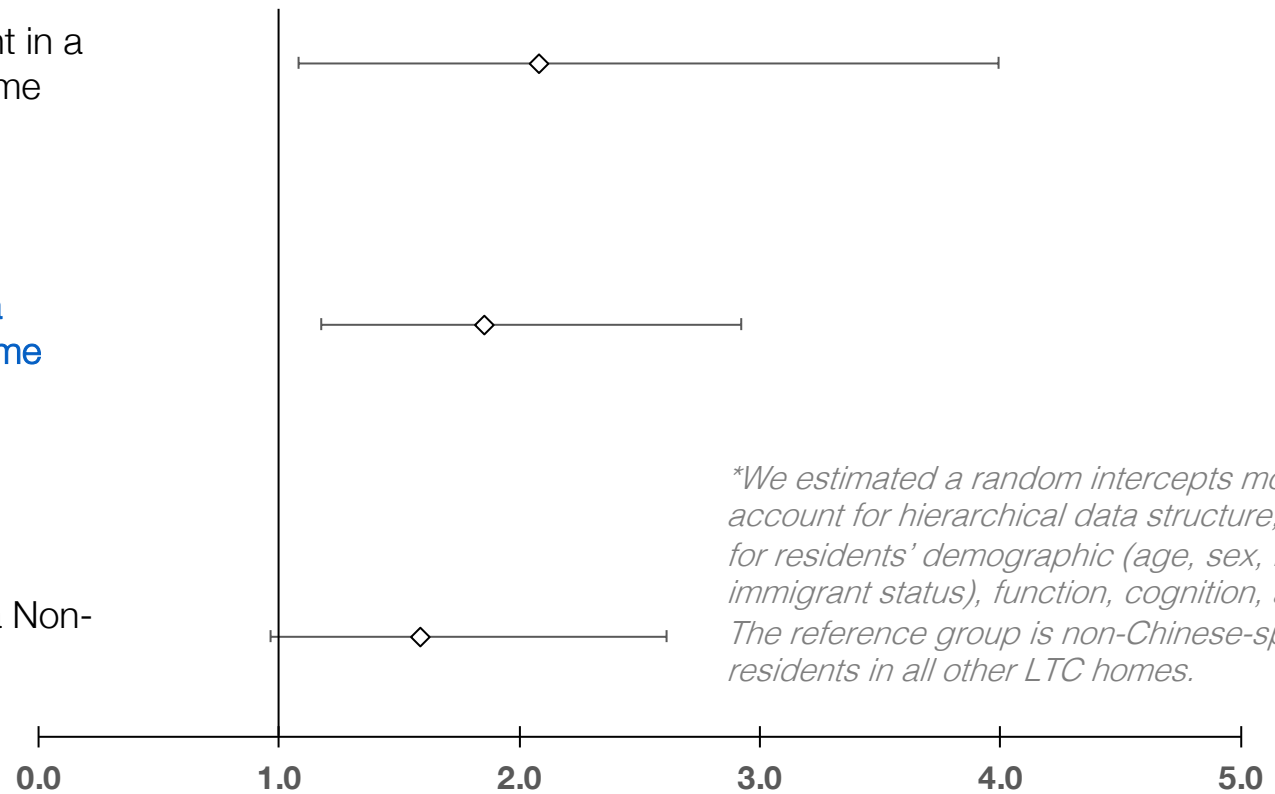
**We estimated a random intercepts model to account for hierarchical data structure, adjusting for residents' demographic (age, sex, language, immigrant status), function, cognition, and health. The reference group is non-Chinese-speaking residents in all other LTC homes.*

HOSPITALIZATION AT END OF LIFE

Non-Chinese Speaking Resident in a
Primarily Chinese-Speaking Home

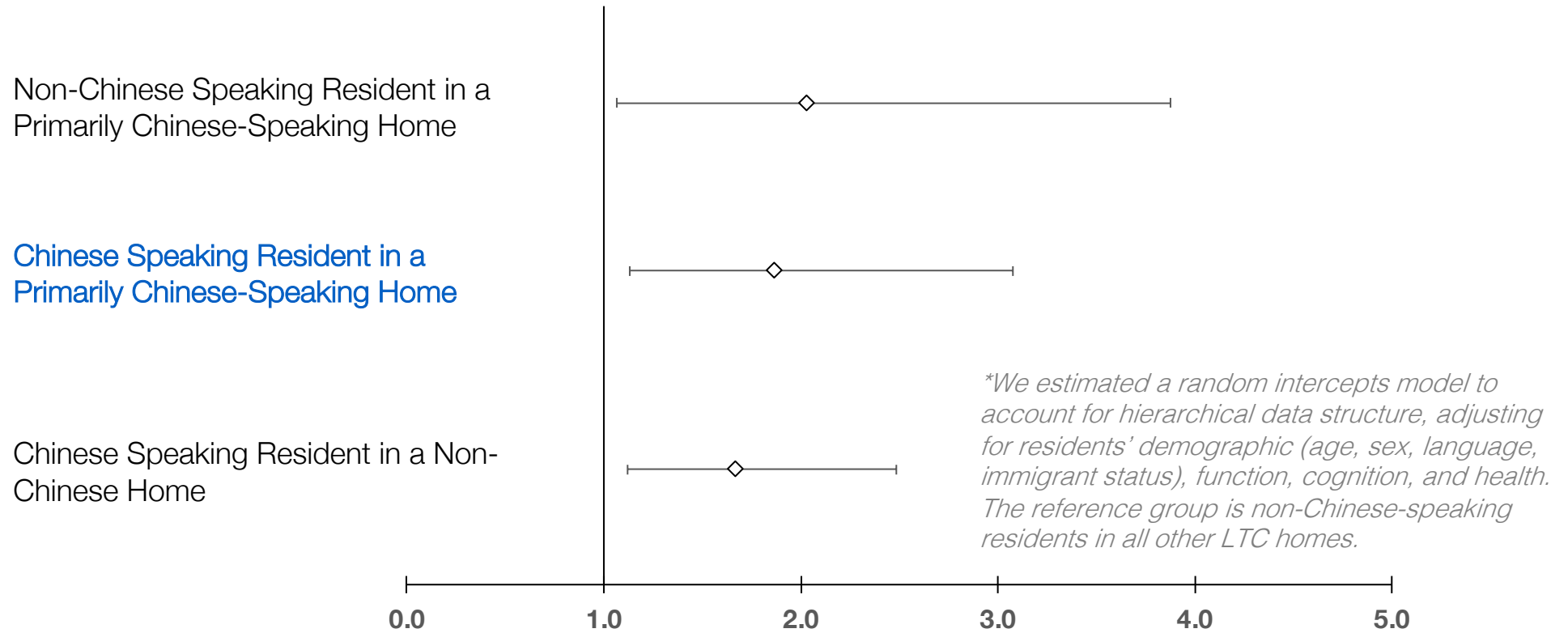
Chinese Speaking Resident in a
Primarily Chinese-Speaking Home

Chinese Speaking Resident in a Non-
Chinese Home



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LOCATION OF DEATH



Summary:

- Chinese-speaking residents in primarily Chinese ethnic homes reported lower rates of pain near the end of life
- Chinese-speaking residents in LTC were more likely to use acute care services (specifically, hospitalizations) and die in hospital than non-Chinese-speaking residents in LTC
- During the pandemic, changes in acute care use affected Chinese-speaking residents in Chinese LTC homes than those in other, non-ethnic homes (data not shown)





Thank
You!

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