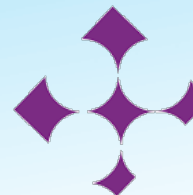


End of life cancer care among immigrants and long-term residents in Ontario, Canada

Hsien Seow
ICES

ARCC

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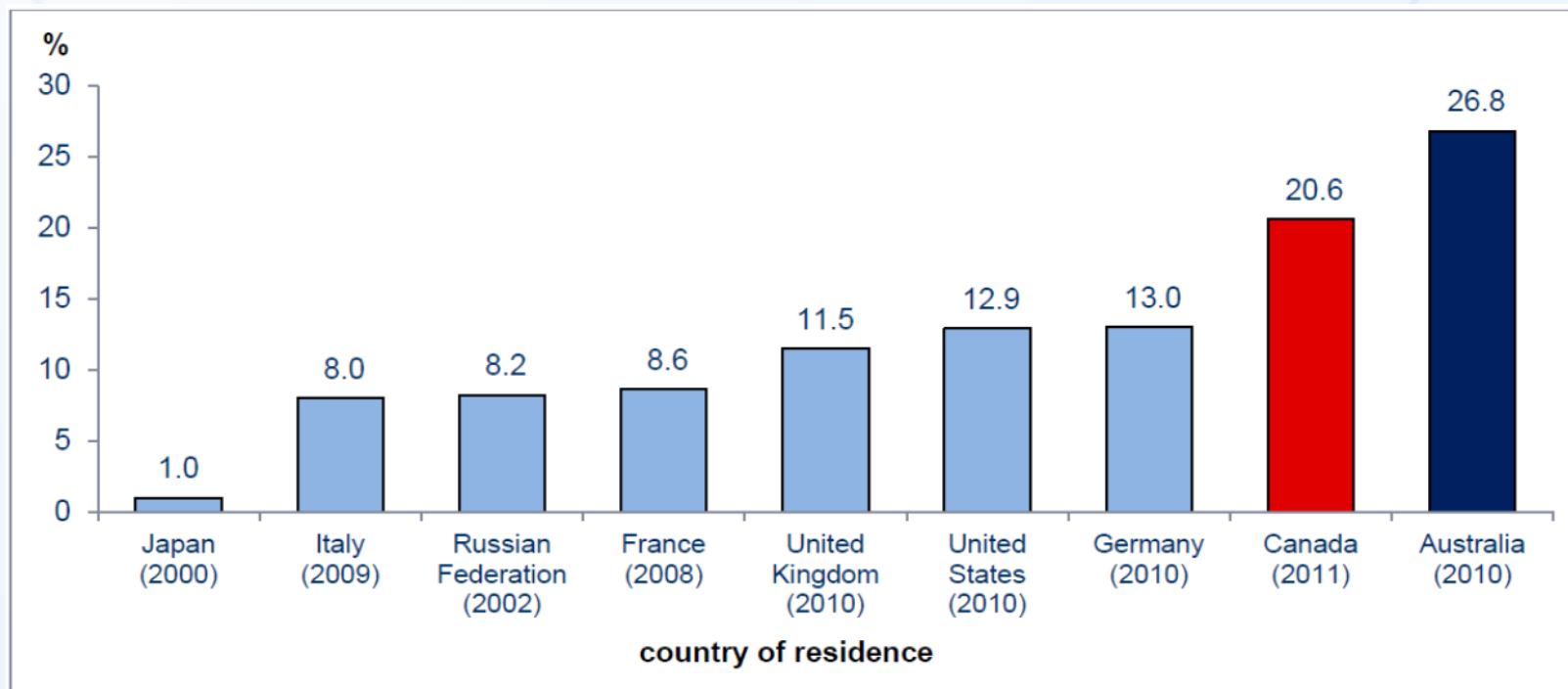
ARCC
Canadian Centre
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Data
Discovery
Better Health

Background

Canada has a growing, ethnically diverse population due to high rates of immigration.



Sources: Organization for Economic Cooperation and Development, International Migration Outlook 2012, OECD Publishing, 2012 and Statistics Canada, National Household Survey, 2011.

Background

- Previous studies have found immigrant decedents are more likely to receive aggressive care at the end of life compared with non-immigrants*
- Much effort towards improving the quality of life of cancer patients at the end of life
- Whether quality of care efforts have extended to different immigrant ethnic groups is unknown
- Knowledge of immigrant cancer patients' use of health services near death will help understand and improve their quality of care at the end of life

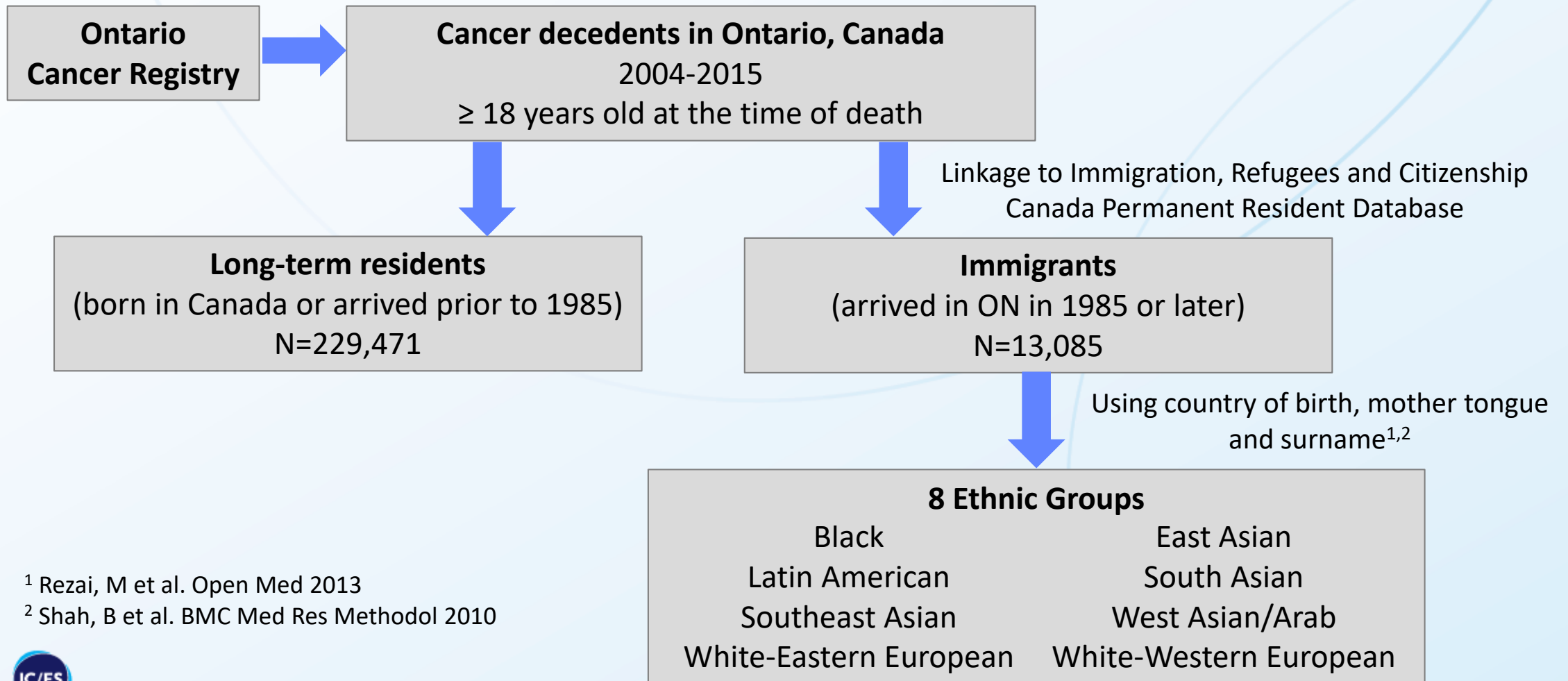
* Yarnell C, JAMA, 2017

Study Objectives

Among cancer decedents in Ontario, Canada:

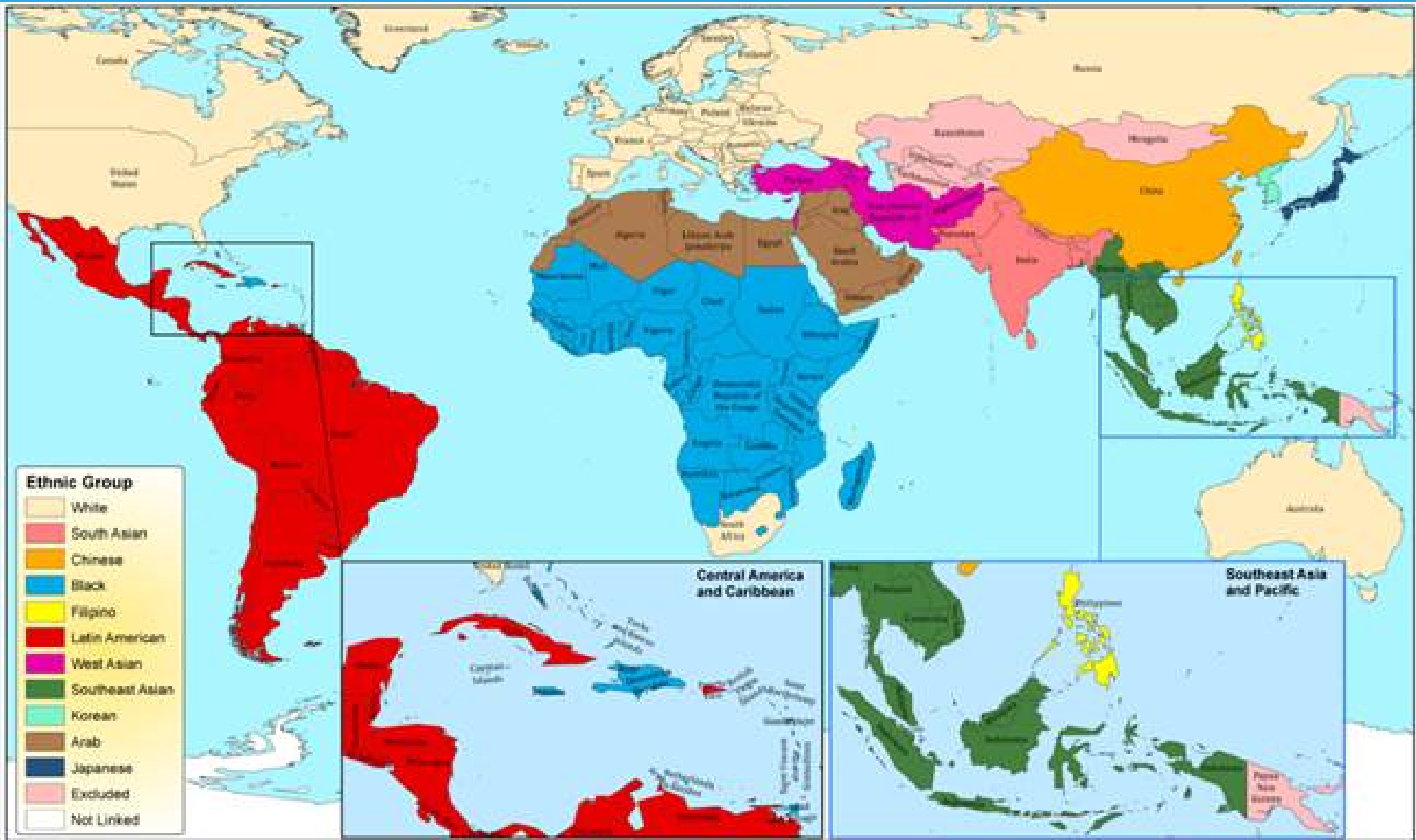
- To compare the use of aggressive and supportive health care near the time of death among immigrants of different ethnic groups with long-term residents

Methods - Study Population



¹ Rezai, M et al. Open Med 2013

² Shah, B et al. BMC Med Res Methodol 2010



Methods – Data Sources

CIHI DAD

- Death in an acute care hospital
- New hospitalizations
- Intensive care unit admissions

NACRS

- Emergency department visits

Physician Claims (OHIP)

- Chemotherapy
- Physician house calls

Home Care Database

- Home visits by a registered nurse, personal support worker or for palliative care

CIHI DAD = Canadian Institute for Health Information Discharge Abstract Database

NACRS = National Ambulatory Care Reporting System

OHIP = Ontario Health Insurance Plan

OHCAS/HCD = Ontario Home Care Administrative System / Home Care Database

Methods – Indicators

Aggressive care	Supportive care
Death in an acute care hospital	Home visits within 6 months of death:
New hospitalization within 30 days of death	By a registered nurse
ICU admission within 30 days of death	By a personal support worker
ED visit within 2 weeks of death	For palliative care
Chemotherapy within 2 weeks of death	Physician house call within 2 weeks of death
Combined aggressive care – within 30 days of death, at least: <ul style="list-style-type: none">- 2 ED visits,- 2 new hospitalizations or- 1 ICU admission	Combined supportive care – at least: <ul style="list-style-type: none">- 1 palliative nursing or personal support worker home visit within 6 months of death- 1 physician house call within 2 weeks of death

Study Population Characteristics

Characteristic	Long-term residents	All immigrants	Range within ethnic groups		Std Diff*	p-value*
			Low	High		
Population size, N	229,471 (94%)	13,085 (6%)	670 (Latin Amer.)	2987 (East Asian)		
Age, mean \pm SD, years	72.2 \pm 12.5	66.2 \pm 15.0	61.7 (Black)	69.5 (East Asian)	0.43	<.001
Female, %	46.8	49.2	45.7 (W. Asian/Arab)	56.4 (Black)	0.04	<.001
Community size >1,500,000, %	30.7	77.3	48.1 (White-E. Eur)	89.6 (East Asian)	1.06	
Cancer type, %						
Breast	7.7	9.4	5.3 (East Asian)	14.5 (Black)	0.06	<.001
Colorectal	12.7	10.4	6.2 (South Asian)	13.6 (White-E. Eur)	0.07	
Lung	27.9	20.9	12.8 (Black)	28.0 (East Asian)	0.16	
Prostate	6.6	4.4	3.0 (East Asian)	7.5 (Latin Amer.)	0.09	
Other	45.1	54.9	51.4 (SE Asian)	62.6 (South Asian)	0.20	
Charlson score of 1+, % †	14.0	11.4	9.3 (White-E. Eur)	14.2 (South Asian)	0.08	<.001

* For comparisons of long-term residents versus all immigrants.

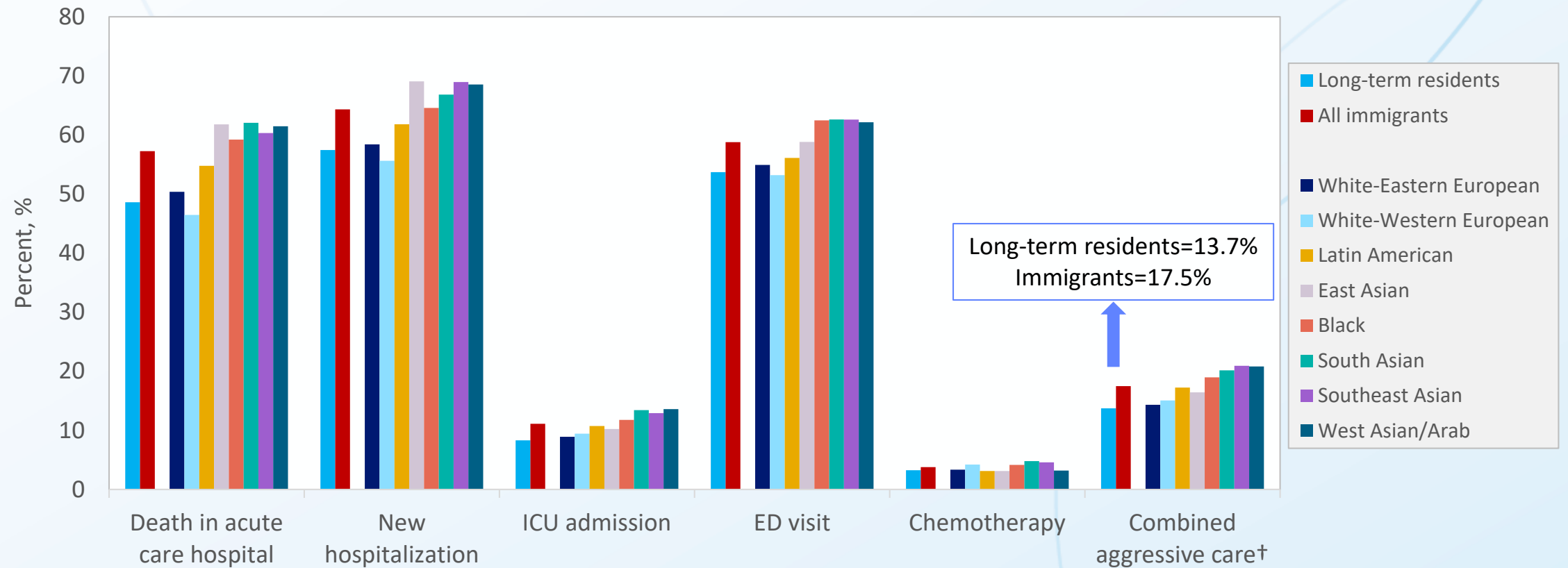
† From hospitalizations in the 12 to 24 months prior to death.

Characteristics of Immigrants

Characteristic	All immigrants	Range within ethnic groups		p-value
		Low	High	
Secondary school education or less, %	60.6	39.5 (White-E. Eur)	72.5 (Black)	<.001
Neither English or French, %	47.6	8.5 (Black)	69.7 (East Asian)	<.001
Time since immigration, %				
< 5 years	10.6	8.1 (Latin Amer.)	14.9 (W. Asian/Arab)	
5-10 years	15.3	11.3 (White-W. Eur.)	19.3 (W. Asian/Arab)	
> 10 years	74.1	65.9 (W. Asian/Arab)	80.3 (Latin Amer.)	<.001
Immigration category, %*				
Economic	25.6	21.8 (Latin Amer.)	35.6 (White-W. Eur)	<.001
Family	56.0	42.3 (W. Asian/Arab)	63.8 (South Asian)	
Refugee	14.5	<1.0 (White-W. Eur)	31.3 (W. Asian/Arab)	

* Proportions for other and unknown immigration categories are not shown.

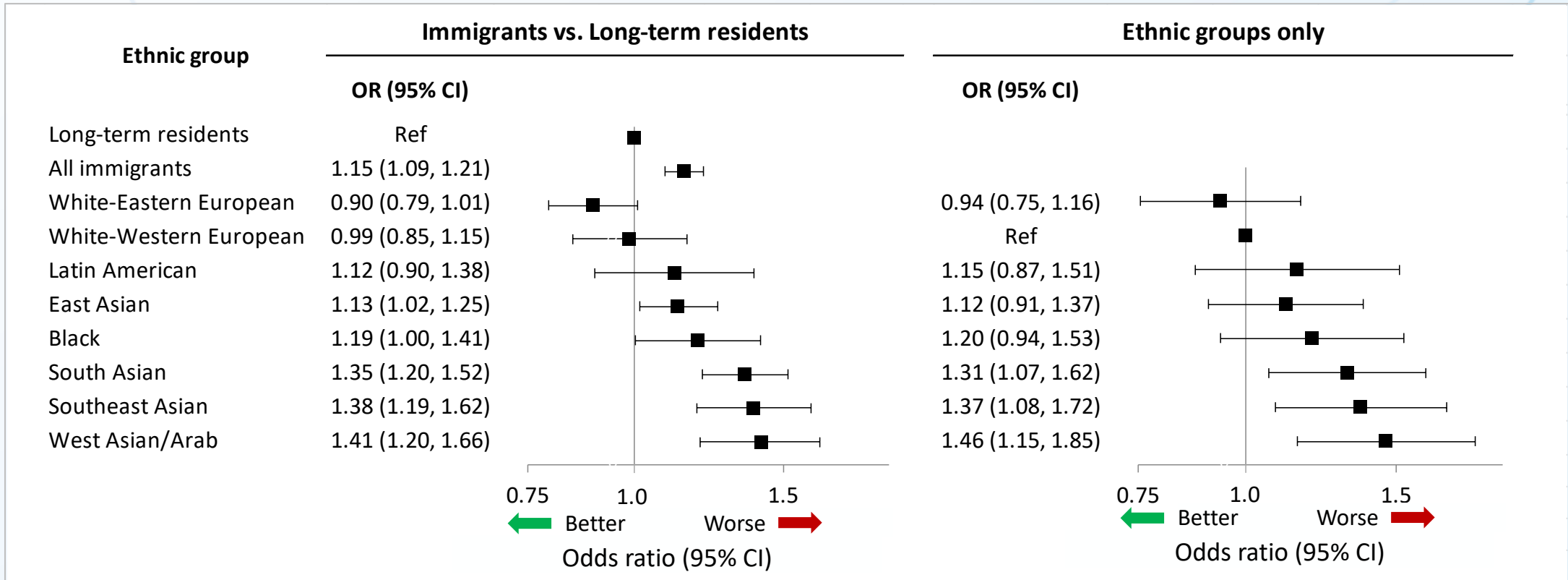
Aggressive Care Indicators*



* New hospitalization, ICU admission and ED visit are within 30 days of death. Chemotherapy is within 2 weeks of death.

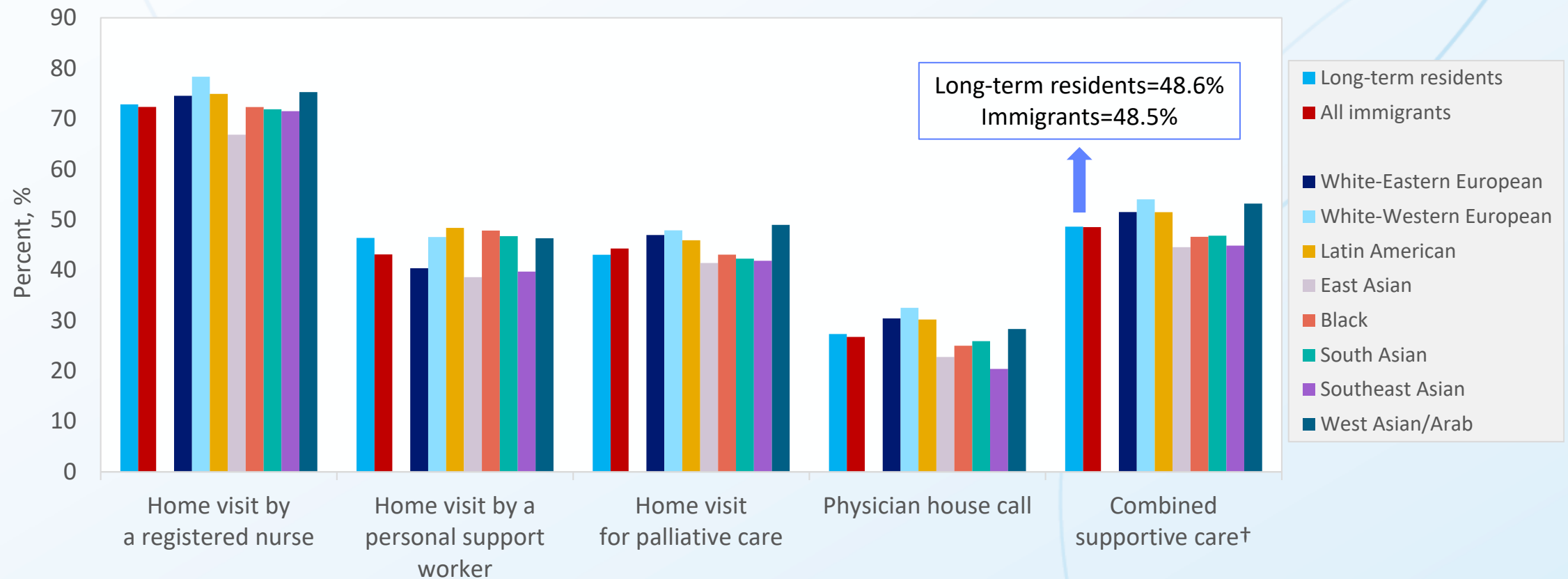
† At least 2 ED visits, 2 new hospitalizations or an ICU admission within 30 days of death.

Adjusted Risk of Aggressive Care*



* Defined as at least 2 ED visits, 2 new hospitalizations or an ICU admission within 30 days of death. Adjusted for age, sex, Charlson score, cancer type, neighbourhood income quintile, community size, health region and year of death. Models for ethnic groups only are additionally adjusted for education, language ability, time since immigration and immigration category.

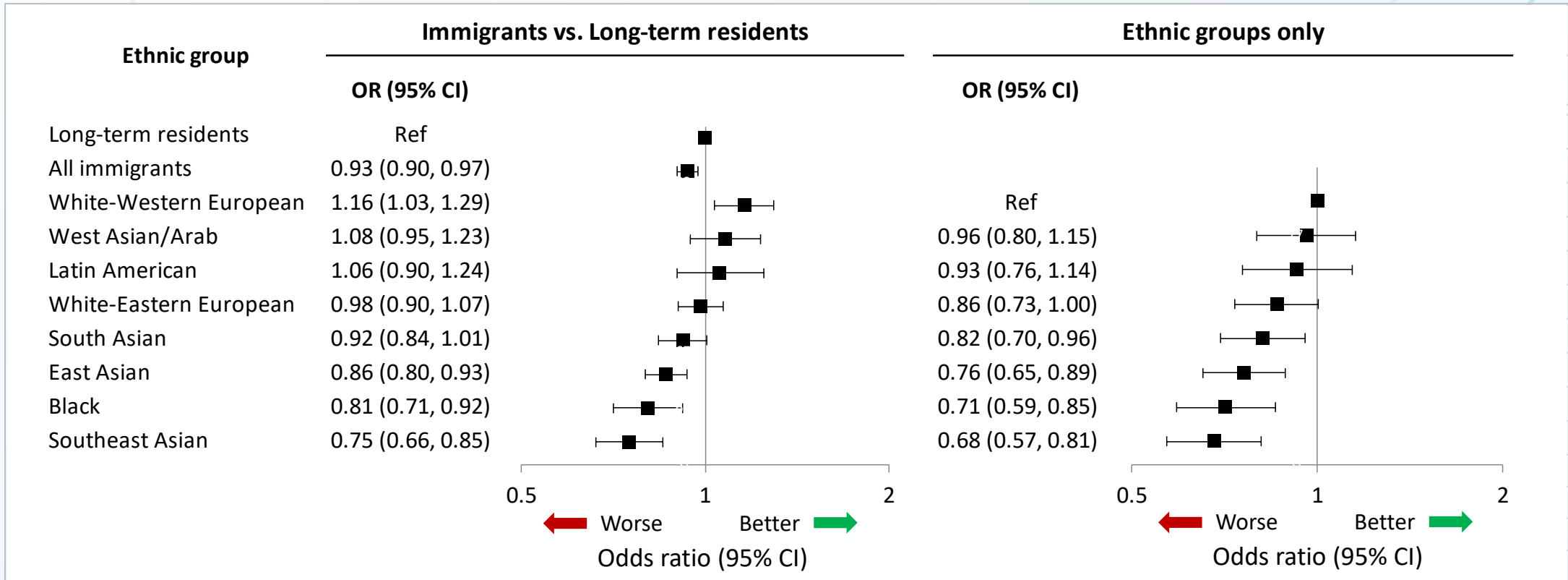
Supportive Care Indicators*



* Home visits are within 6 months of death. Physician house call is within 2 weeks of death.

† At least 1 palliative nursing or personal support worker home visit within 6 months of death, or a physician house call within 2 weeks of death.

Adjusted Risk of Supportive Care*



* Defined as having a palliative nursing or personal support worker home visit within 6 months of death, or a physician house call within 2 weeks of death. Adjusted for age, sex, Charlson score, cancer type, neighbourhood income quintile, community size, health region and year of death. Models for ethnic groups only are additionally adjusted for education, language ability, time since immigration and immigration category.

Summary

- At the end of life, compared with long-term residents in Ontario, immigrant cancer decedents are:
 - More likely to receive aggressive health care services
 - Less likely to receive supportive care
- Use of aggressive and supportive care varies by ethnicity
- Unclear relationship between aggressive and supportive care within ethnic groups
- Contributors to differences in end-of-life cancer care require further study

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- The results and conclusions are those of the authors, and are independent from and should not be attributed to the funding or data sources.

Thank you

**Further questions or comments:
seowh@mcmaster.ca**