

Temporal association between palliative home nursing costs and hospital costs at end-of-life in BC, ON, and NS

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Hsien Seow

Associate Professor, McMaster University

Canada Research Chair in Palliative Care and Health System Innovation



Acknowledgements

Co-Authors

- Beverley Lawson, Dalhousie University
- Rinku Sutradhar, University of Toronto
- Konrad Fassbender, University of Alberta
- Kim McGrail, University of British Columbia
- Lisa Barbera, University of Toronto

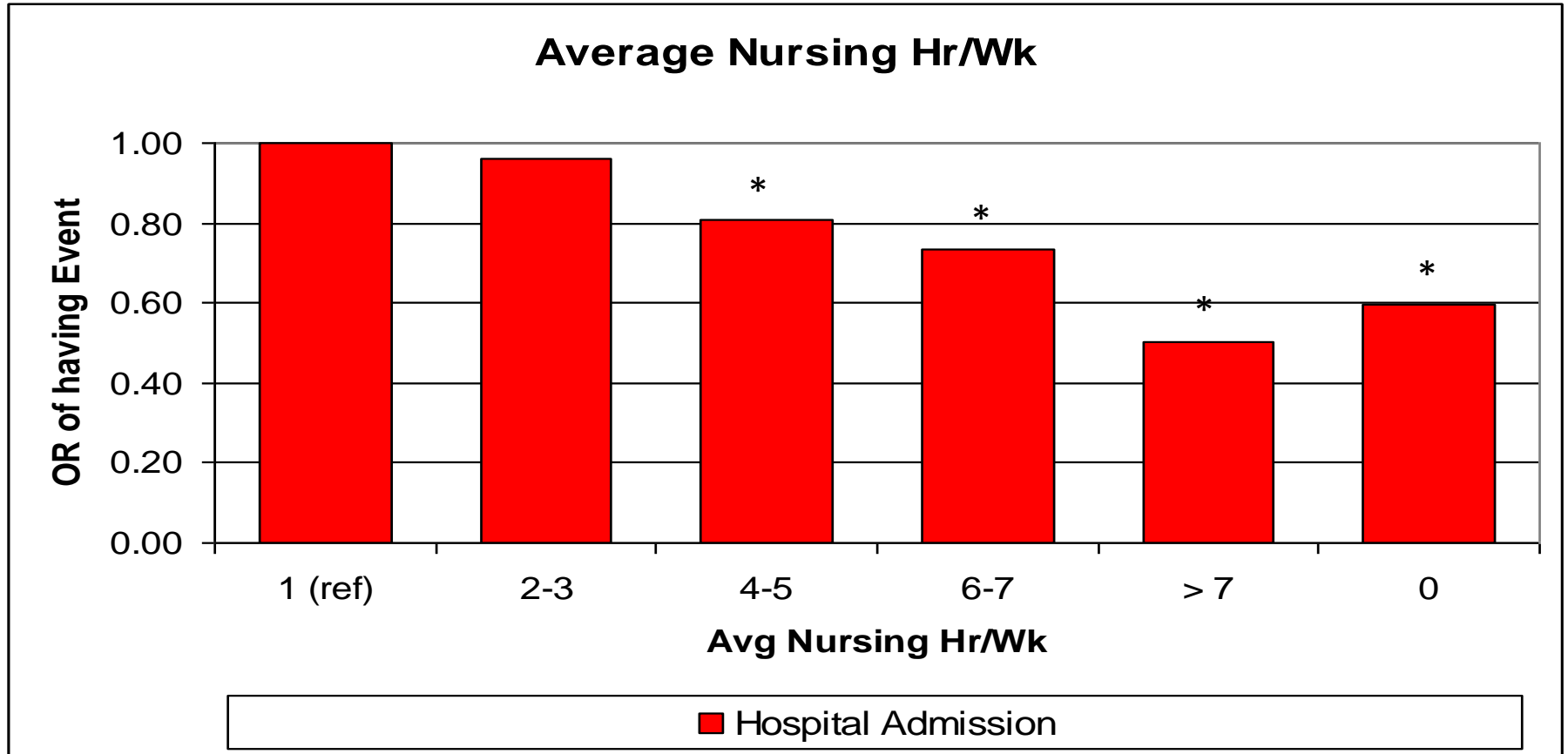
Funders and Collaborators

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Background

- 65% die in hospital, but most want to die at home
- 10% budget on last year of life, 70%=hospital
- Association research exists between more home nursing and less late-life hospital (ON and UK)
- But few costing studies
- A meta-analysis review (2013)
 - Specialist PC home nursing services
 - Heterogeneity in study quality and cost definitions
 - inconclusive evidence of cost savings

Nursing Hrs & Hospitalizations in last 2 weeks



Addressing Limitations

- Focus on costs
 - Particularly when accounting for increased nursing costs (~20 hrs/week) to keep people at home
- Cross jurisdictional (3 provinces)
- Consistent definitions
- Not just the last 2 weeks of life
- Research is missing to help support the shift from acute care to home and community

Research Objective

- To examine the temporal association of palliative home nursing costs with subsequent hospitalization costs in last 6 months of life

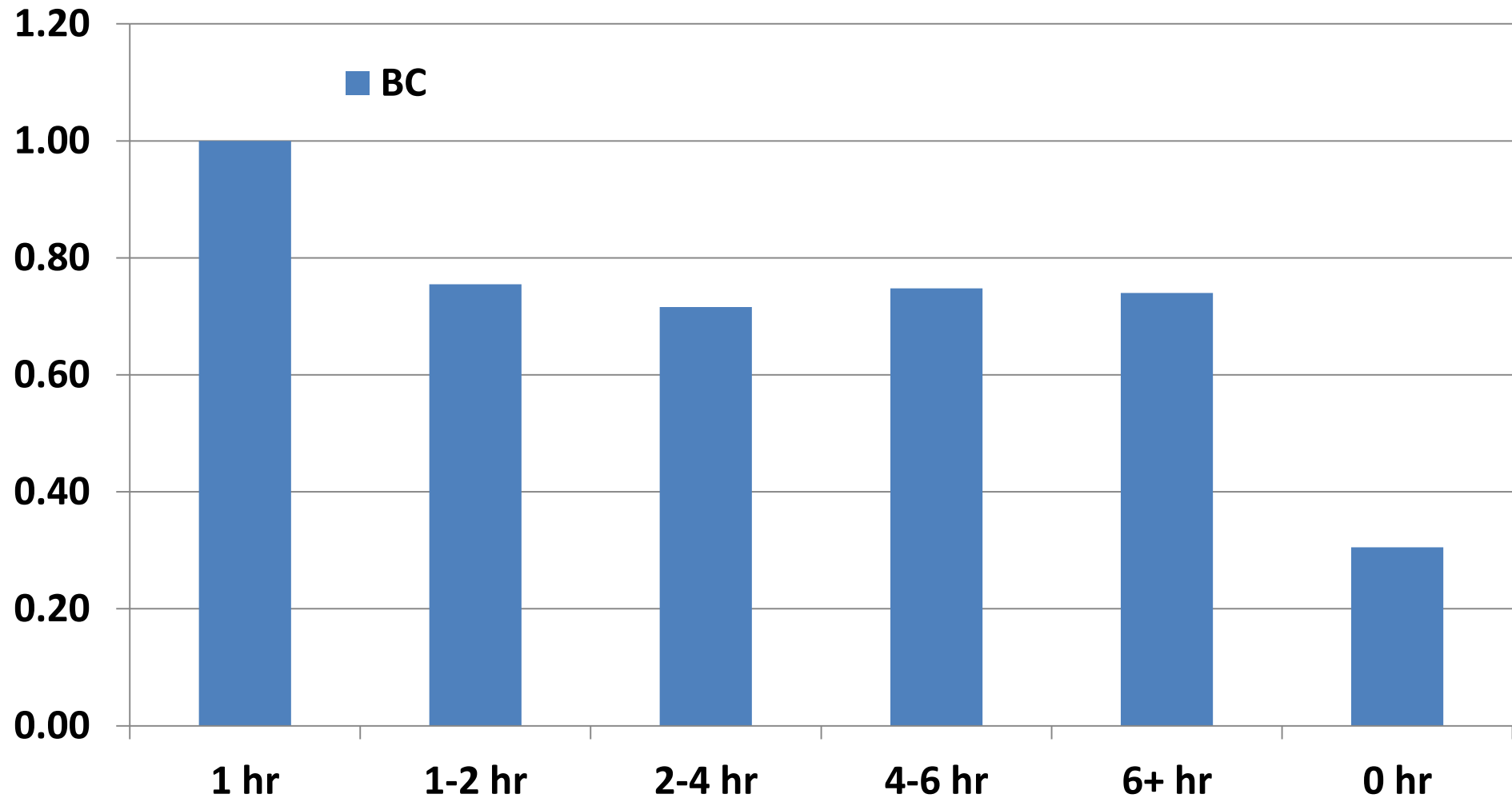
Methods

- Retrospective cancer cohort (2004-09) BC, ON, NS
- Linked cancer registry, homecare (palliative care nursing focus) and DAD (hospital), Statcan, >18.
- Time from death: Last 6 mo and last mo separately
- Exposure: ↑ Nursing \$ in 2 week block (categorical)
- Outcomes:
 - Relative average hospitalization cost in next block
 - Total costs (hospital + nursing costs) in next block
- Reference was 1 nursing hr/block
- ON costs used as standard (1 nursing hr = \$87/hr)
- Poisson regression, multivariate regression.

Demographics

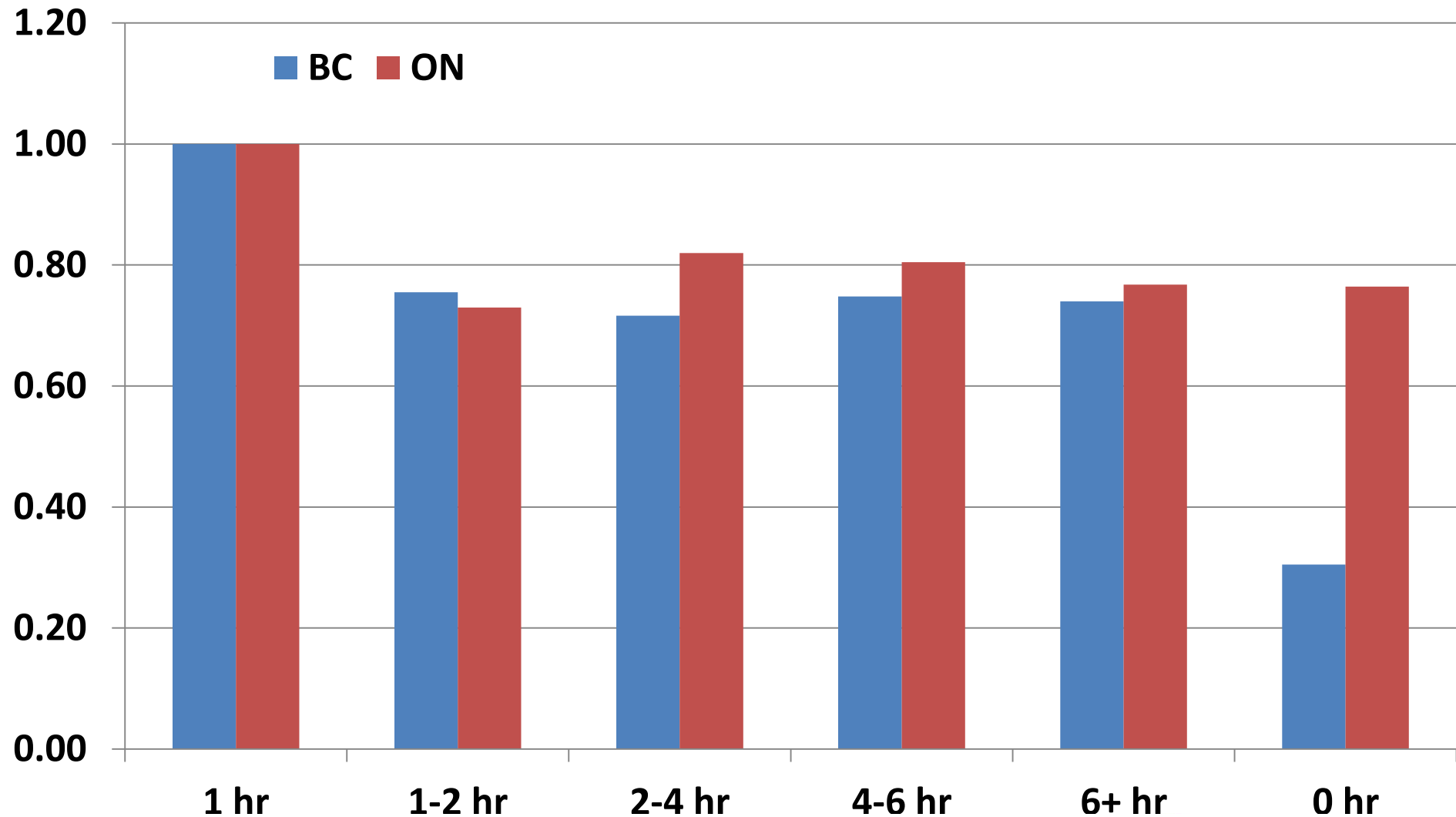
		British Columbia		Ontario		Nova Scotia		Total Cohort	
		n	(%)	n	(%)	n	(%)	n	(%)
Total		17,368	(28)	39,542	(65)	1,112	(2)	58,022	(100)
Age	<60	3,739	(22)	9,096	(23)	192	(17)	13,027	(22)
	>=60	13,629	(78)	30,446	(77)	920	(83)	44,995	(78)
Sex	F	8,273	(48)	19,071	(48)	529	(48)	27,873	(48)
	M	9,095	(52)	20,471	(52)	583	(52)	30,149	(52)
Cancer Type	Lung	4,806	(28)	10,496	(27)	303	(27)	15,605	(27)
	CRC	2,146	(12)	5,582	(14)	173	(16)	7,901	(14)
	GI	2,033	(12)	4,532	(11)	116	(10)	6,681	(12)
	Breast	1,346	(8)	3,553	(9)	80	(7)	4,979	(9)
Charlson Score	0	6,996	(40)	17,066	(43)	486	(44)	24,548	(42)
	≥1	2,399	(14)	6,960	(18)	209	(19)	9,568	(16)
	missing	7,973	(46)	15,516	(39)	418	(38)	23,907	(41)

↑ Nursing Costs and *Relative* Hospital Costs: Last 6 Month



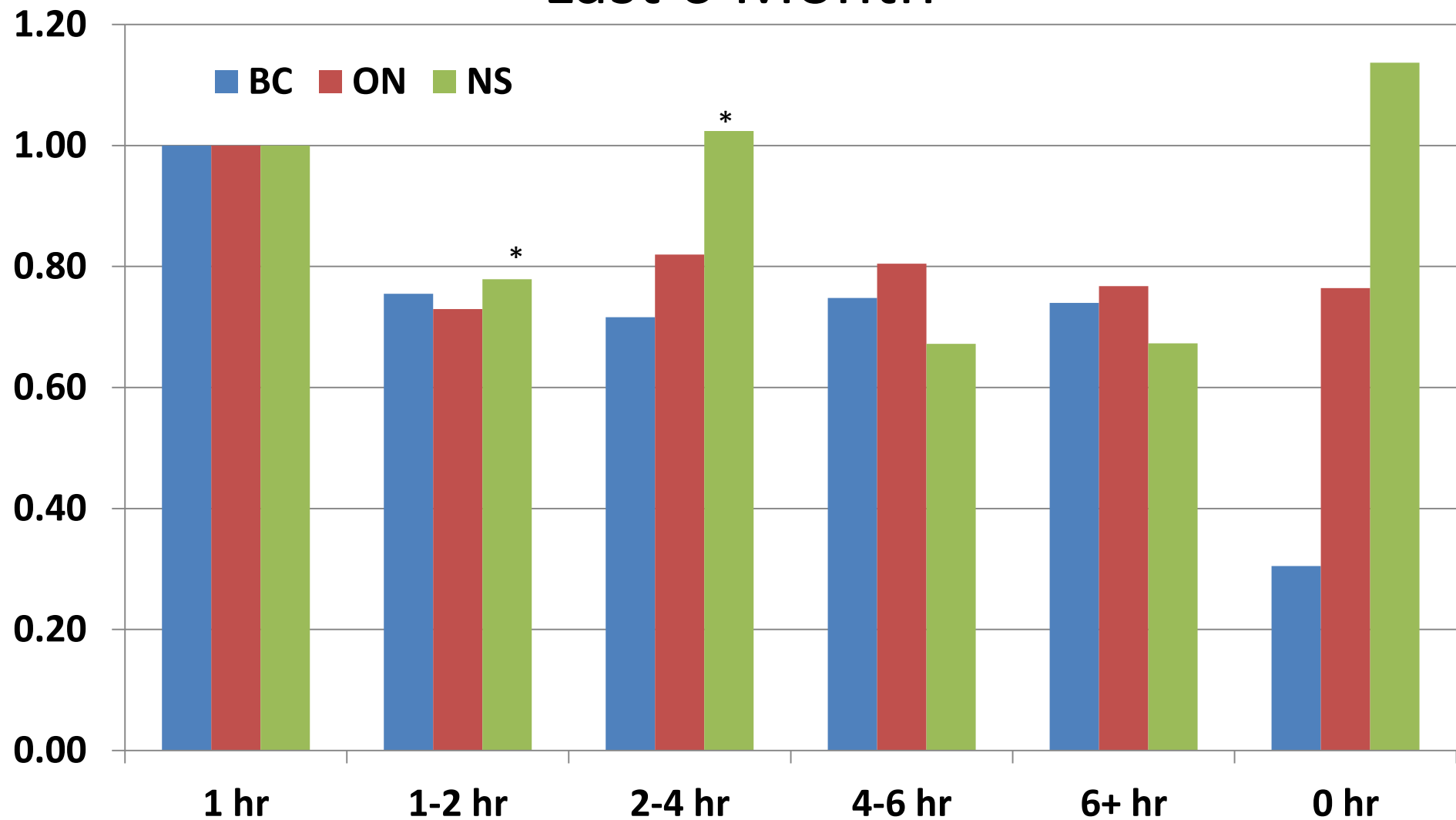
Multivariate regression: Also control led for age (10 year intervals), sex, comorbidity score, community size, and each week closer to death.

↑ Nursing Costs and Relative Hospital Costs: Last 6 Month



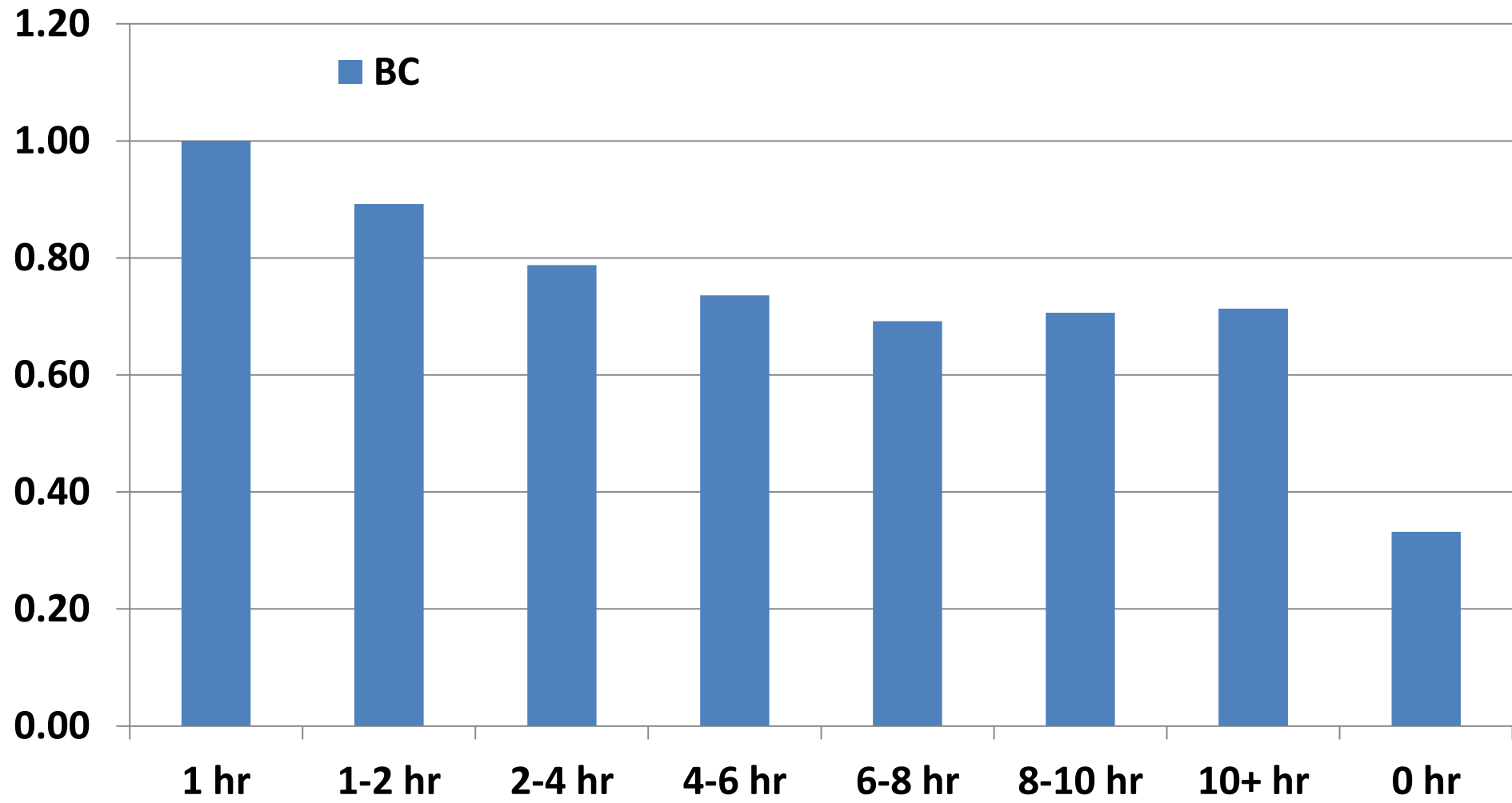
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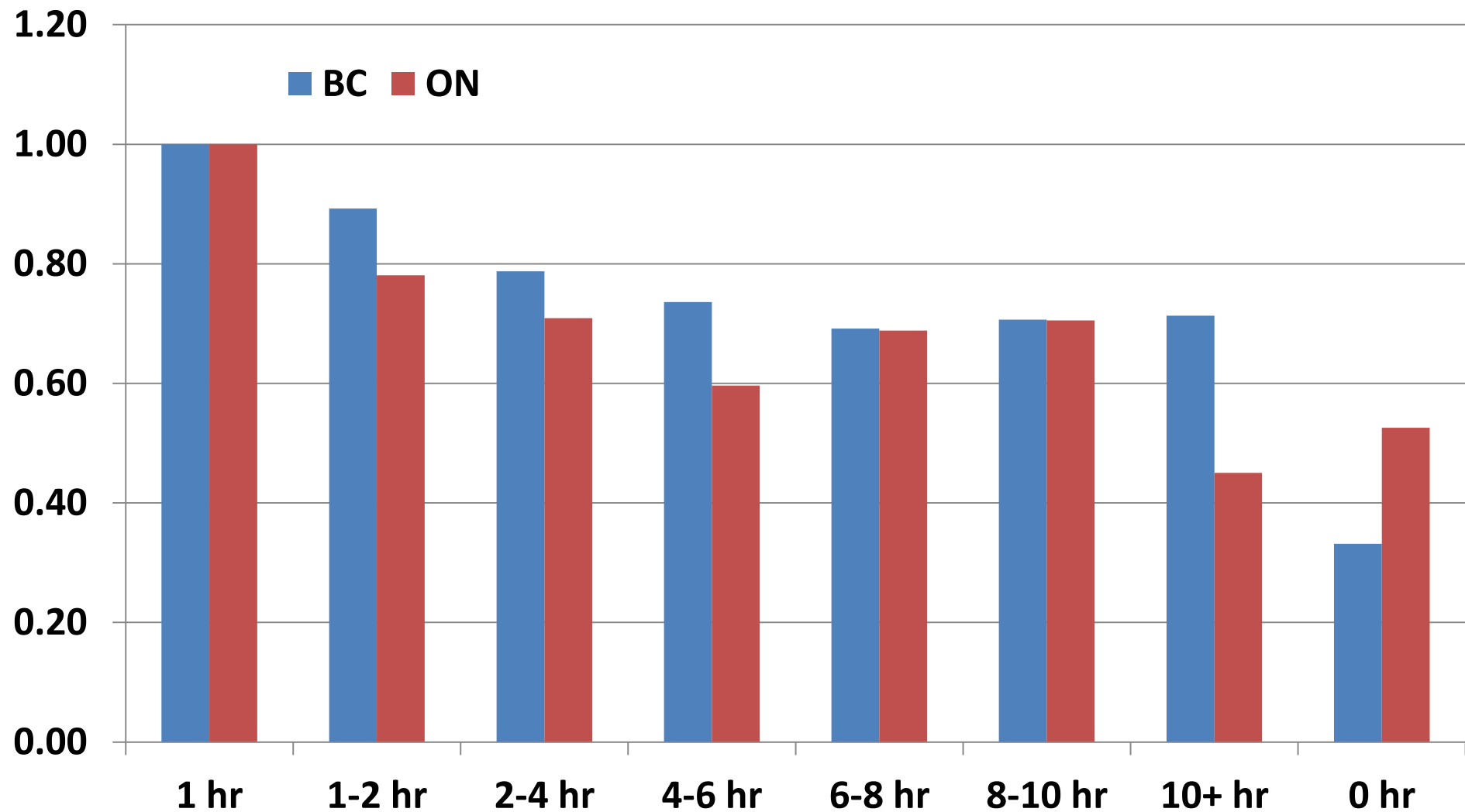
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↑ Nursing Costs and Relative Hospital Costs: Last Month of Life



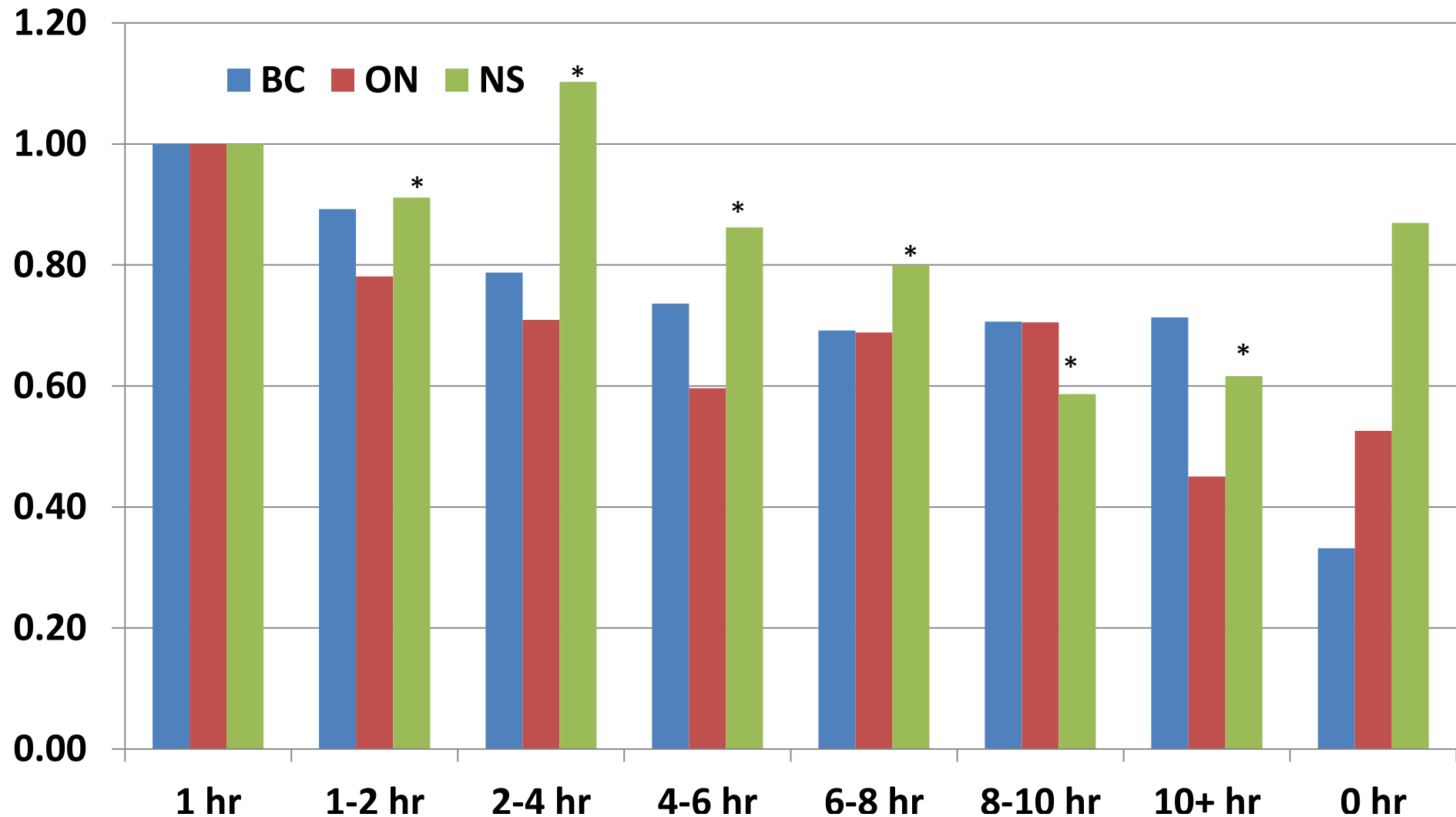
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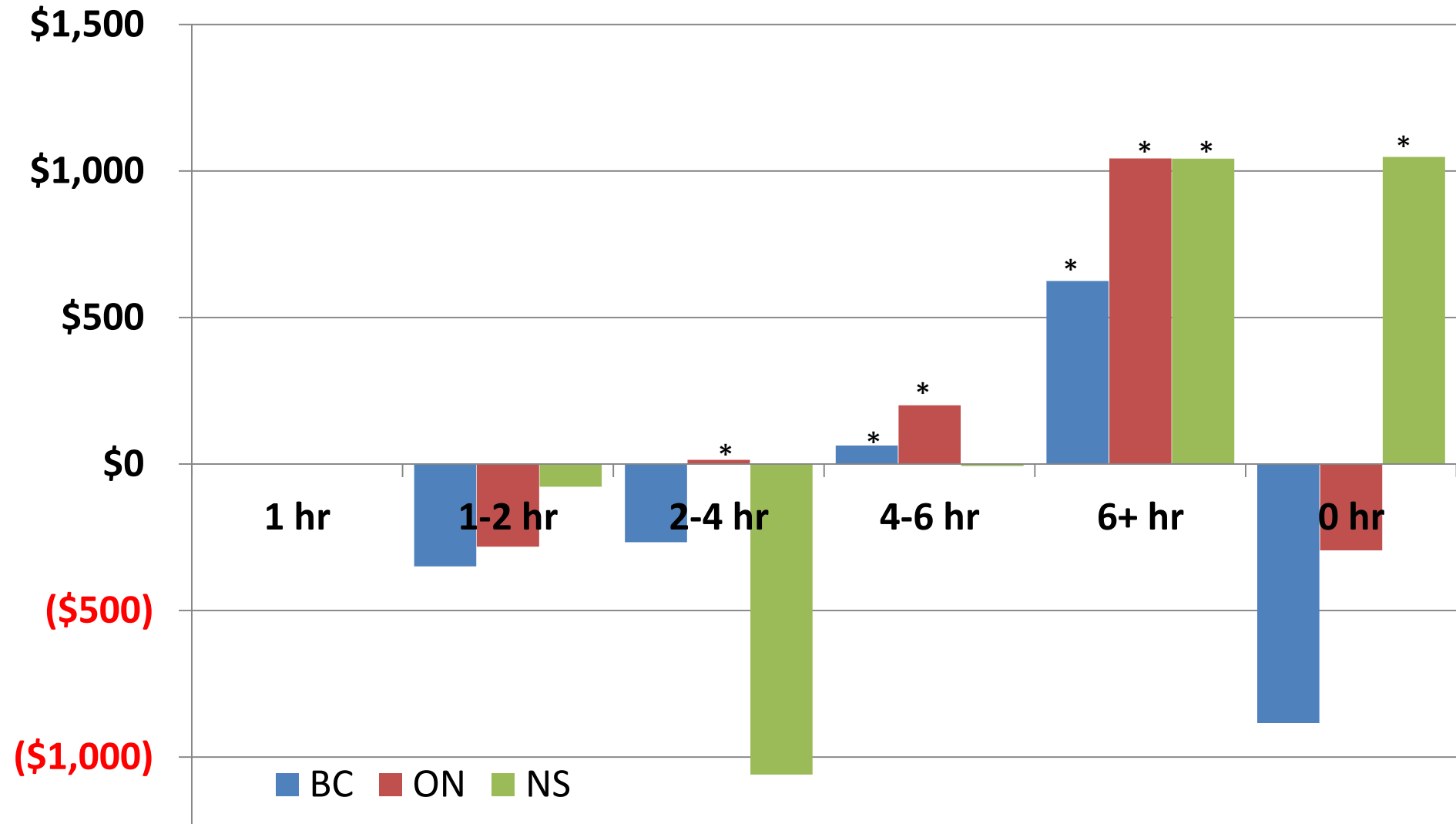
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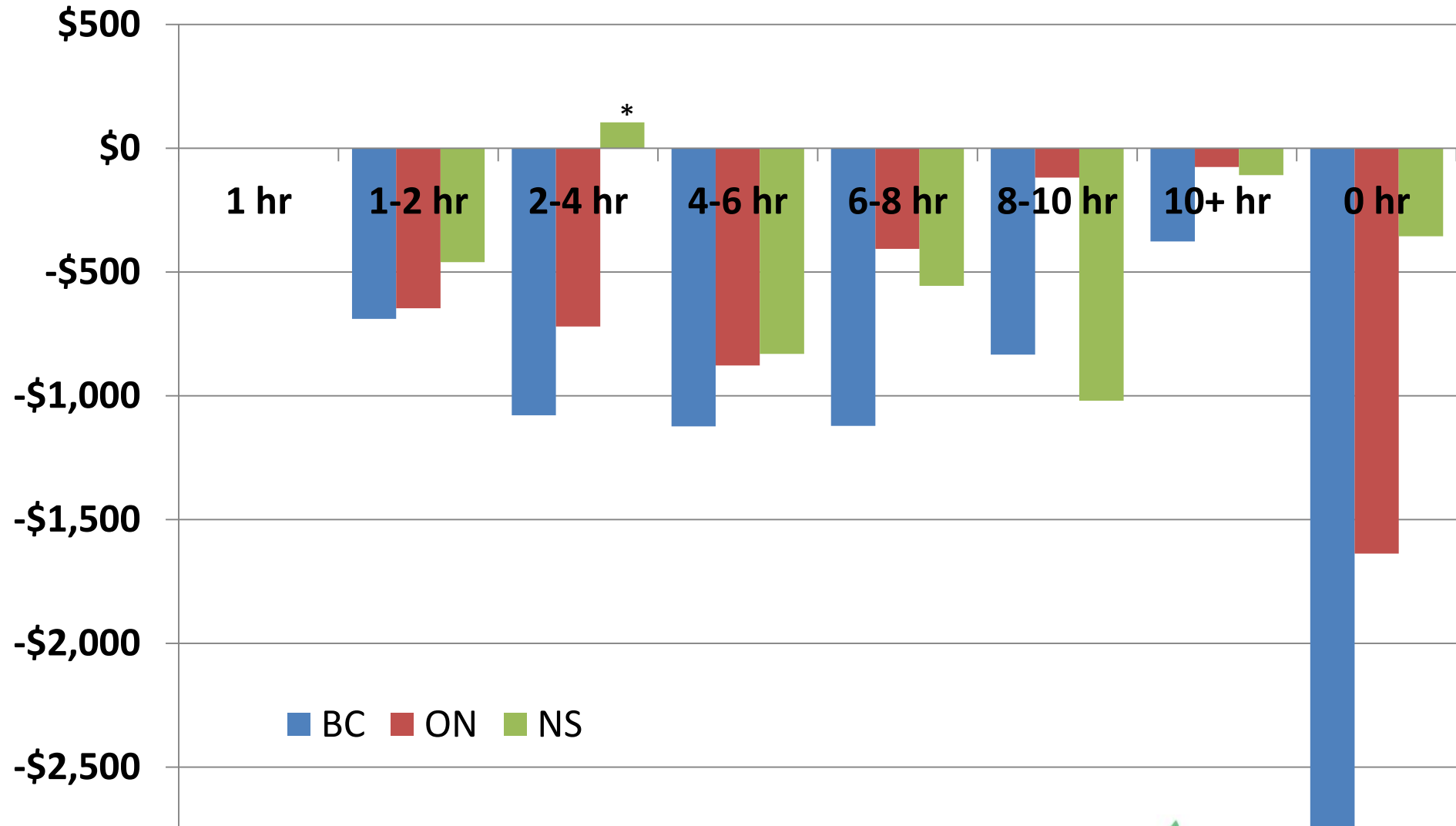
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Cost Differences in *Total Costs* by ↑Nursing: Last 6 Month



Multivariate regression: Also control led for age (10 year intervals), sex, comorbidity score, community size, and each week closer to death.

Cost Differences in *Total Costs* by ↑Nursing: Last Month of Life



Multivariate regression: Also control led for age (10 year intervals), sex, comorbidity score, community size, and each week closer to death.

Summary of Results

- In all 3 provinces:
- Saw ↑nursing costs and ↓*relative* hospital costs in next block
 - In last 6 months and last month (except NS)
- Saw ↑nursing costs and ↓total costs
 - But only in last month of life

Discussion

- Largest cohort study in palliative care nursing costs and hospital costs across jurisdictions
- Costs savings despite high # of hours in final month
 - Individual estimates. Bigger system savings when multiplied
- Consistent trends and RR in all 3 provinces
 - ↑ generalizability of association. Not causal. Y: strength, consistent, temporal, plausible, gradient. X-specific
 - Unlikely a function of organization of system (differs by province) or expertise (differs by individual).

Limitations

- cancer only
- under-reporting of nursing with PC intent
- ON costs not true costs
- no other costs calculated (equipment, private)
- But cost-saving estimates are conservative
 - only 56% (\$424M) of true hospital costs included

Conclusion

- Compared to cancer patients receiving 0 to 1 hours of palliative care nursing, those receiving more nursing are associated with lower relative hospital costs and total costs.
- Supports cost-savings potential of homecare.
- Yet, home care only comprises 5% of total provincial budget. (of which ~63% goes to front line, and only portion is devoted to nursing)