

Supplementary Material

Variation in direct healthcare costs to health system by residents living in longterm care facilities: a Registry of Senior Australians study

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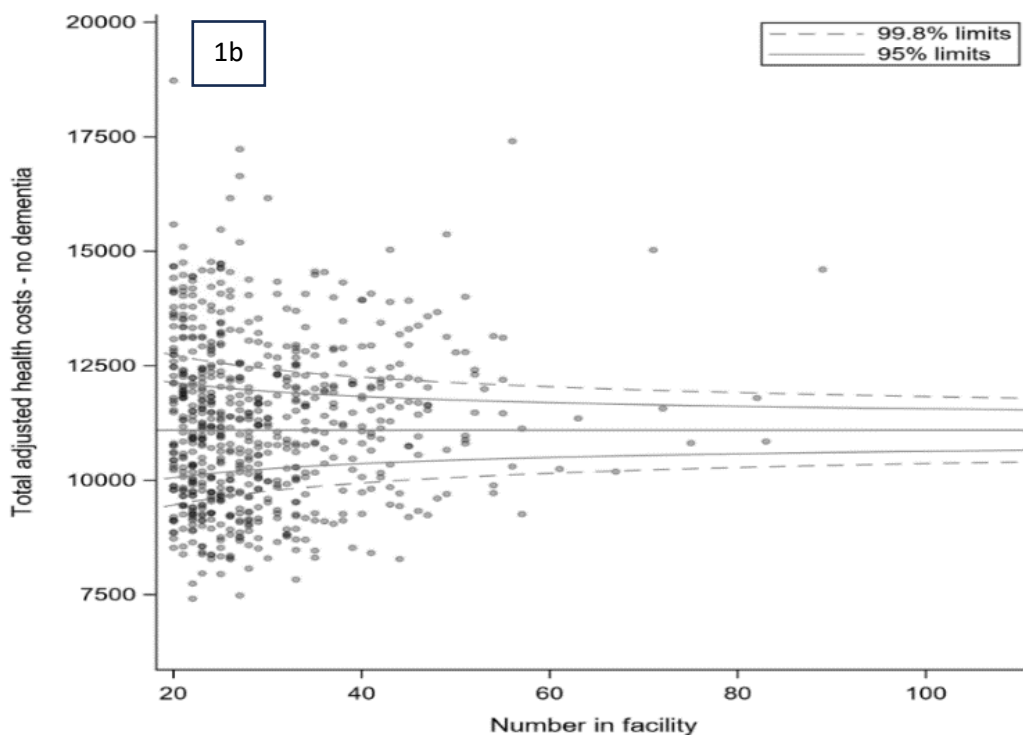
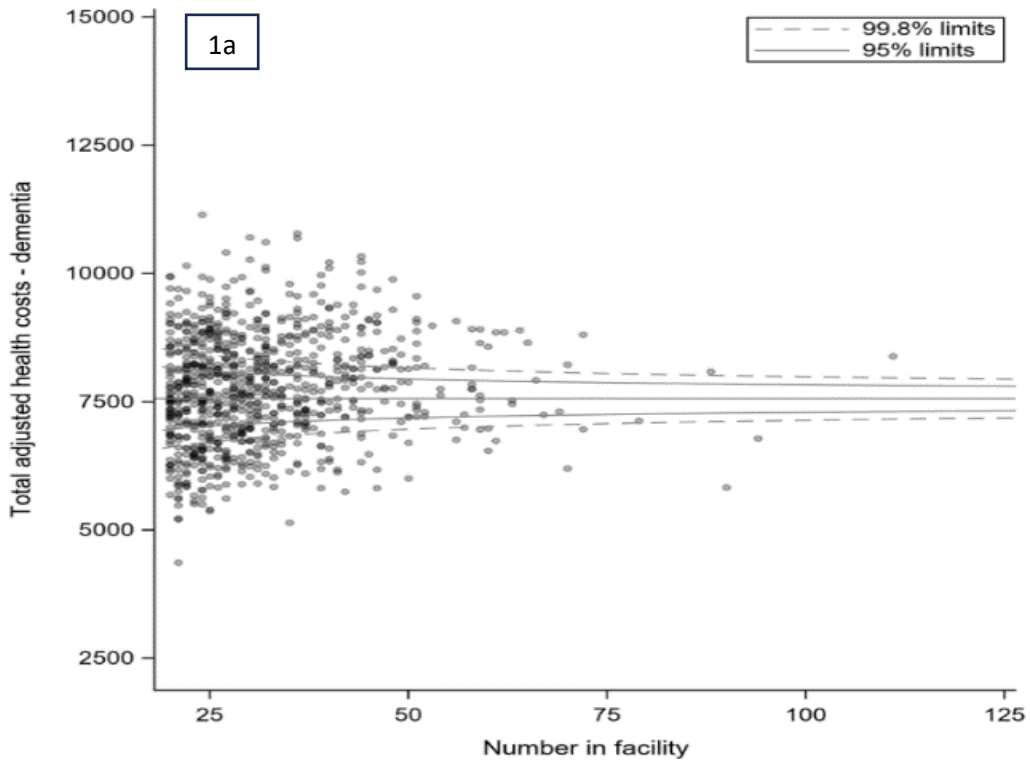
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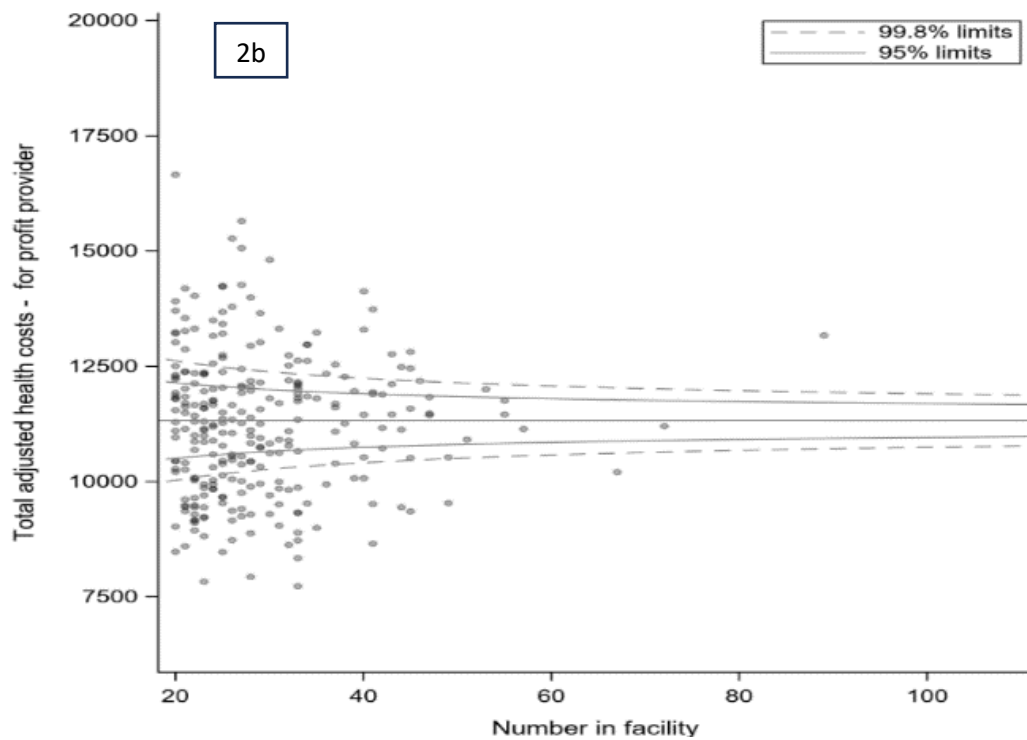
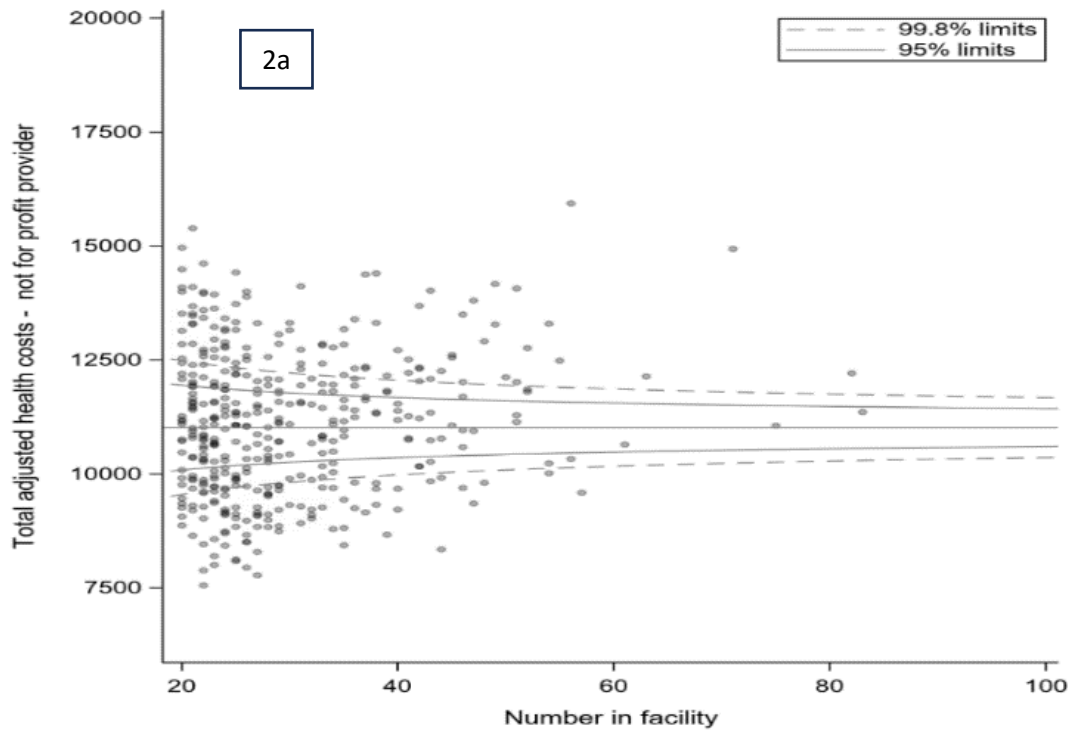
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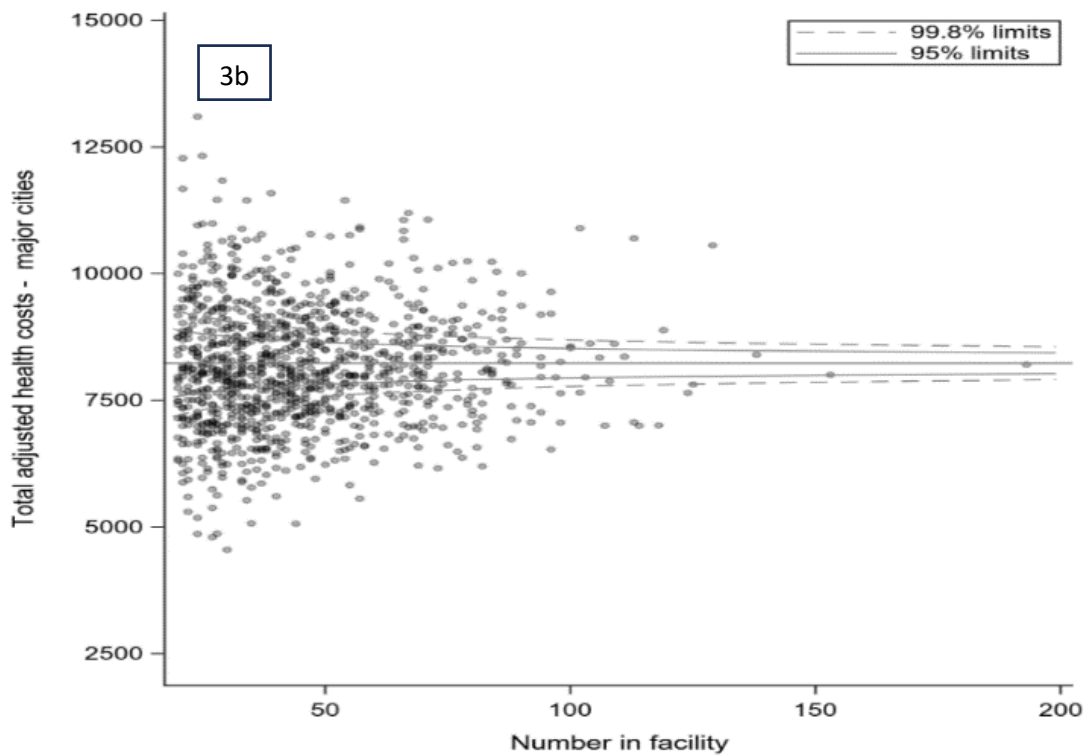
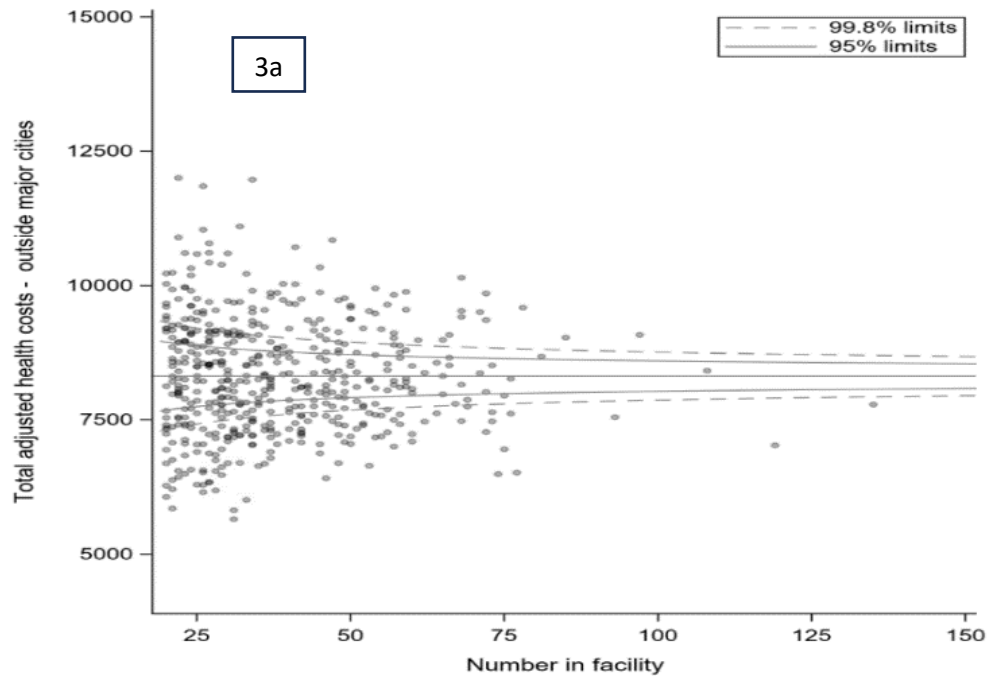
Supplementary Figure S1: Funnel plots of total annual adjusted healthcare costs per residents. 1a) Facilities with dementia 1b) facilities without dementia. The graphs showing dispersion around the average cost for each residential aged care facility as a function of the residential aged care facility volume. The solid and dotted lines represent the 95% and 99% confidence interval around the mean. Each dot represents a facility.



Supplementary Figure S2: Funnel plots of total annual adjusted healthcare costs per residents. 2a) for-profit facilities. 2b) not-for-profit facilities. The graphs showing dispersion around the average cost for each residential aged care facility as a function of the residential aged care facility volume. The solid and dotted lines represent the 95% and 99% confidence interval around the mean. Each dot represents a facility.



Supplementary Figure S3: Funnel plots of total annual adjusted healthcare costs per residents. 3a) facilities in outside major. 3b) facilities in major cities. The graphs showing dispersion around the average cost for each residential aged care facility as a function of the residential aged care facility volume. The solid and dotted lines represent the 95% and 99% confidence interval around the mean. Each dot represents a facility.



Supplementary Table S1: Multivariate gamma regression (generalised linear model) on co-variates associated with direct cost to health system.

Variable	Coefficient (β)	95% Confidence Interval	P value
Men (vs women)	0.26	-0.25 to -0.17	<0.001
Age group (65-74 years)	ref		
75-84 years	-0.11	-0.16 to -0.06	<0.001
≥85 years	-0.19	-0.24 to -0.14	<0.001
Frailty index score	0.62	0.33 to 0.91	<0.001
Facility remoteness (outside major cities)	ref		
Major cities	0.18	0.13 to 0.22	<0.001
Provider type (<i>For-profit</i>)	ref		
Government	-0.08	-0.17 to 0.03	0.06
Not-for-profit	-0.04	-0.08 to -0.01	0.03
State (<i>New South Wales</i>)	ref		
Victoria	-0.08	-0.12 to -0.04	<0.001
Queensland	0.02	-0.03 to 0.07	0.33
Rx-Risk V comorbidity category (0-2)	ref		
3-4	0.35	0.29 to 0.40	<0.001
5-6	0.59	0.54 to 0.65	<0.001
7+	1.01	0.96 to 1.07	<0.001
Dementia (Yes vs no)	-0.21	-0.25 to -0.17	<0.001
Activities of Daily Living Needs (<i>None</i>)	ref		
Low	0.60	-0.12 to 0.16	0.11
Medium	-0.01	-0.09 to 0.09	0.94
High	-0.16	-0.26 to -0.07	0.001
Behavioural Daily Living Needs (<i>None</i>)			
Low	0.02	-0.04 to 0.08	0.47
Medium	-0.02	-0.09 to 0.04	0.045
High	-0.07	-0.14 to -0.09	0.03
Complex Healthcare Needs (<i>None</i>)			
Low	0.04	-0.01 to 0.10	0.14
Medium	0.14	0.08 to 0.21	<0.001
High	0.28	0.22 to 0.35	<0.001
Constant	8.36	8.23 to 4.49	<0.001

Supplementary Table S2: Adjusted annual average costs (Aus\$) by health resource type per resident and facility characteristics

	<i>Health care cost (Aus\$ in 2016* (Average (CI))</i>			
	<i>Hospital admissions</i>	<i>ED</i>	<i>MBS</i>	<i>PBS</i>
Overall	4,453 (4,410 - 4,495)	568 (565 - 571)	2,566 (2,560 - 2,571)	1,844 (1,656 - 2,496)
Resident				
<i>With dementia</i>	3,552 (3,507 - 3,596)	512 (508 - 515)	2,337 (2331 - 2343)	1,465 (1,457 - 1,472)
<i>Without dementia</i>	5,509 (5,434 - 5,584)	635 (630 - 639)	2,835 (2,827 - 2,843)	2,289 (2,277 - 2,300)
Ownership				
<i>For-profit</i>	4,658 (4,584 - 4,730)	599 (594 - 604)	2,784 (2,775 - 2,792)	1,783 (1,771 - 1794)
<i>Not-for-profit</i>	4408 (4,353 - 4,463)	566 (563 - 571)	2,429 (2422 -2,435)	1,882 (1,872 - 1,892)
<i>Government</i>	3,261 (3,125 - 3,396)	326 (320 - 334)	2,369 (2,347 - 2,391)	1907 (1,874 - 1,941)
Location				
<i>Outside major cities</i>	3,905 (3,841 - 3,969)	467 (463 - 471)	2,139 (2,132 - 2,146)	1,801 (1,788 - 1,814)
<i>Major cities</i>	4,453 (4,632 - 4,741)	612 (608 - 616)	2,748 (2,742 - 2,752)	1,862 (1,854 - 1,871)
Size				
<i><20 residents</i>	4,212 (4,051 - 4,373)	498 (487 - 509)	2,389 (2,369 - 2,409)	1,903 (1,873 - 1,933)
<i>≥20 residents</i>	4468 (4,424 - 4,513)	573 (570 - 576)	2,578 (2572 - 2584)	1,840 (1,833 - 1,848)

Note: *Cost adjusted for: age, sex, frailty index, state, Rx-risks, Activities of Daily Living needs, Behavioral Daily Living needs, and Complex Health Care needs (CHC) with additional variables (dementia, facility remoteness, types of facilities) where relevant.

Government facilities with ≥20 residents were excluded from reporting due to the small cell size (N=10 facilities). CI= confidence interval, ED= emergency department presentations, MBS= Medicare Benefits Schedule (out of hospital medical services); PBS= Pharmaceutical Benefits Scheme (medicines).