

Appendix 1 (as supplied by the authors)

Table S1: Description of Long-Term Care Home Design Standards

Factor	Newer Design Standards ¹ n = 263 homes	Older (1972) Design Standards ² n = 235 homes
% Single occupancy (mean)	57.1%	14.4%
% Double occupancy (mean)	42.8%	32.0%
% Triple or quadruple occupancy (mean)	0.0%	52.2%
Occupancy	Private and semi-private rooms are single occupancy, basic rooms are double	Private rooms are single occupancy, semi-private homes are double, and basic rooms may be up to quadruple
Shared washrooms	Semiprivate and basic rooms can have shared washrooms (max 2 residents per washroom)	All rooms can have shared washrooms (max 4 residents per washroom)
Design	Home-like, with a max. of 32 residents co-located in self-contained 'home area' (i.e., shared dining, lounge, activity space)	Institutional, with small or centralized shared dining, lounge, activity space.
Minimum room size	Single room: 11.15 sq. meters Double room: 21.36 sq. meters	Single room: 10.22 sq. meters Double room: 16.72 sq. meters

¹ Long-term care homes where $\geq 50\%$ of beds meet current design standards ('new' beds)

² Long-term care homes where $\geq 50\%$ of beds meet or are below 1972 design standards (Type C and D)

Reference: Ontario Ministry of Health and Long-Term Care. Long-Term Care Home Design Manual 2015 February 2015 [Available from: http://health.gov.on.ca/en/public/programs/ltc/docs/home_design_manual.pdf].

Appendix 1, Table S2: Sensitivity Analyses Reanalyzing Model 3 for all three Outcomes by Entering Average Occupancy rather than Age of the Design Standard into the models

	LTC Home COVID-19 Outbreaks	Extent of LTC Home COVID-19 Outbreaks	Number of LTC Home Resident COVID-19 Deaths
	Model 3 (Explanatory) (+ Adjustment for long-term care home characteristics)	Model 3 (Explanatory) (+ Adjustment for long-term care home characteristics)	Model 3 (Explanatory) (+ Adjustment for long-term care home characteristics)
Variable	aOR (95% CI)	aRR (95% CI)	aRR (95% CI)
Profit status			
Non-profit (ref)	-	-	-
For-profit	0.68 (0.38-1.21)	1.01 (0.60-1.70)	0.91 (0.48-1.70)
Municipal	0.70 (0.35-1.39)	0.87 (0.41-1.89)	0.75 (0.29-1.97)
Health region characteristics			
COVID-19 cumulative incidence in the public health unit region (1 case per thousand)	1.90 (1.19-3.04)	1.72 (1.07-2.78)	1.53 (0.86-2.72)
Population			
>500,000 (ref)		-	-
10,000 - 499,999	0.56 (0.33-0.94)	0.55 (0.31-1.00)	0.53 (0.26-1.08)
<10,000 (rural)	0.38 (0.17-0.81)	0.52 (0.15-1.85)	0.40 (0.08-1.96)
Long-term care home characteristics			
Number of residents (unit of 50)	1.37 (1.18-1.61)	0.84 (0.73-0.95)	0.81 (0.69-0.95)
Average occupancy	1.39 (1.05-1.85)	1.41 (1.10-1.80)	1.43 (1.07-1.92)
Chain ownership (vs. single home)	1.44 (0.84-2.47)	1.76 (1.03-3.01)	1.77 (0.93-3.36)
Full-time equivalent staff to bed ratio	2.06 (0.41-10.36)	0.65 (0.09-4.98)	0.72 (0.07-7.96)

aOR = adjusted odds ratio and aRR = adjusted risk ratio; both were adjusted for all other covariates in the model.

Appendix 1, Table S3: Model Outputs with Municipal Homes as the Referent Profit Status

Outcome			
Outbreak	Model 1 (Profit status only)	Model 2 (+ Adjustment for health region characteristics)	Model 3 (Explanatory) (+ Adjustment for long-term care home characteristics)
Variable	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)
Profit status			
Municipal (ref)	-	-	-
Non-profit	1.20 (0.65-2.22)	1.18 (0.63-2.19)	1.42 (0.71-2.84)
For-profit	1.21 (0.70-2.09)	1.13 (0.65-1.96)	1.02 (0.46-2.29)
Extent of Outbreak	Model 1 (Profit status only)	Model 2 (+ Adjustment for health region characteristics)	Model 3 (Explanatory) (+ Adjustment for long-term care home characteristics)
Variable	aRR (95% CI)	aRR (95% CI)	aRR (95% CI)
Profit status			
Municipal (ref)	-	-	-
Non-profit	1.66 (0.77-3.58)	1.57 (0.71-3.45)	1.17 (0.55-2.51)
For-profit	3.04 (1.50-6.16)	3.07 (1.49-6.34)	1.12 (0.48-2.64)
Total number of deaths	Model 1 (Profit status only)	Model 2 (+ Adjustment for health region characteristics)	Model 3 (Explanatory) (+ Adjustment for long-term care home characteristics)
Variable	aRR (95% CI)	aRR (95% CI)	aRR (95% CI)
Profit status			
Municipal (ref)	-	-	-
Non-profit	2.02 (0.78-5.26)	1.86 (0.67-5.13)	1.37 (0.53-3.53)
For-profit	3.36 (1.38-8.19)	3.30 (1.29-8.46)	1.13 (0.39-3.26)

aOR = adjusted odds ratio and aRR = adjusted risk ratio; both were adjusted for all other covariates in the model.