

TABLE A1. Full results of the fixed effects multivariate regression

	Model (a)	95% CIs	Model (b)	95% CIs
Daily admissions ratio	0.0814***	[0.063,0.100]		
Monday	0.0180***	[0.013,0.023]	-0.00363	[-0.010,0.003]
Tuesday	0.0121***	[0.008,0.016]	-0.00967***	[-0.015,-0.004]
Thursday	-0.00792***	[-0.012,-0.004]	-0.00499*	[-0.010,-0.000]
Friday	-0.0148***	[-0.020,-0.010]	-0.0126***	[-0.018,-0.007]
Saturday	-0.00367	[-0.010,0.003]	-0.0131**	[-0.021,-0.005]
Sunday	0.0175***	[0.011,0.024]	-0.00270	[-0.014,0.008]
Long-stay patients	0.0692*	[0.008,0.130]	0.128***	[0.064,0.192]
% Female	0.0269	[-0.013,0.067]	0.0333	[-0.007,0.073]
% No investigation	0.0394	[-0.001,0.079]	0.0238	[-0.011,0.058]
% Psychiatric conditions	-0.0334	[-0.236,0.169]	-0.101	[-0.297,0.094]
% Self-referrals	-0.0436*	[-0.079,-0.008]	-0.0673***	[-0.099,-0.035]
% Emergency services	-0.0295	[-0.082,0.023]	-0.0344	[-0.087,0.018]
Christmas	-0.0506***	[-0.063,-0.038]	-0.0580***	[-0.072,-0.044]
New Year's Eve	0.0247**	[0.010,0.039]	0.0523***	[0.037,0.067]
New Year's Day	0.00641	[-0.007,0.020]	0.0111	[-0.002,0.024]
Flu	0.384	[-0.263,1.031]	0.485	[-0.125,1.095]
Size of ED	0.0000788	[-0.000,0.000]	0.0000501	[-0.000,0.000]
% A&E Senior doctors	-0.0469	[-0.270,0.177]	-0.0375	[-0.272,0.197]
% Respiratory medicine	0.0263*	[0.005,0.047]	0.0254*	[0.005,0.046]
Age of attendance 21-40	0.0892**	[0.023,0.155]	0.0924**	[0.026,0.159]
Age of attendance 41-60	0.202***	[0.136,0.268]	0.225***	[0.158,0.291]
Age of attendance 61-80	0.401***	[0.331,0.471]	0.465***	[0.398,0.533]
Age of attendance 80+	0.567***	[0.475,0.659]	0.665***	[0.574,0.756]
week=1	0	[0.000,0.000]	0	[0.000,0.000]
week=2	-0.0446***	[-0.054,-0.035]	-0.0326***	[-0.042,-0.024]
week=3	-0.0737***	[-0.085,-0.063]	-0.0625***	[-0.073,-0.052]
week=4	-0.0657***	[-0.077,-0.054]	-0.0535***	[-0.065,-0.042]
week=5	-0.0286***	[-0.039,-0.018]	-0.0104	[-0.021,0.000]
week=6	-0.0658***	[-0.077,-0.055]	-0.0526***	[-0.064,-0.041]
week=7	-0.0753***	[-0.088,-0.063]	-0.0643***	[-0.077,-0.052]
week=8	-0.0694***	[-0.082,-0.057]	-0.0570***	[-0.070,-0.044]
week=9	-0.0677***	[-0.080,-0.056]	-0.0518***	[-0.064,-0.040]
week=48	-0.0718***	[-0.088,-0.056]	0	[0.000,0.000]
week=49	-0.0404***	[-0.052,-0.029]	-0.0224***	[-0.035,-0.010]

week=50	-0.0240***	[-0.034,-0.014]	-0.00829	[-0.019,0.002]
week=51	-0.0633***	[-0.073,-0.054]	-0.0576***	[-0.068,-0.047]
week=52	-0.0526***	[-0.062,-0.043]	-0.0851***	[-0.096,-0.074]
Bed occupancy=85	0	[0.000,0.000]		
Bed occupancy=86	0.0120	[-0.001,0.025]		
Bed occupancy=87	0.00907	[-0.002,0.020]		
Bed occupancy=88	0.0265***	[0.015,0.038]		
Bed occupancy=89	0.0233***	[0.012,0.035]		
Bed occupancy=90	0.0346***	[0.022,0.047]		
Bed occupancy=91	0.0351***	[0.023,0.047]		
Bed occupancy=92	0.0394***	[0.026,0.052]		
Bed occupancy=93	0.0425***	[0.029,0.056]		
Bed occupancy=94	0.0492***	[0.036,0.063]		
Bed occupancy=95	0.0521***	[0.038,0.066]		
Bed occupancy=96	0.0601***	[0.046,0.074]		
Bed occupancy=97	0.0621***	[0.047,0.077]		
Bed occupancy=98	0.0714***	[0.056,0.086]		
Bed occupancy=99	0.0843***	[0.068,0.100]		
Bed occupancy=100	0.0927***	[0.075,0.111]		
Total admissions			0.0000152	[-0.000,0.000]
L1. Admissions : discharges ratio			0.0466***	[0.034,0.059]
L2. Admissions : discharges ratio			0.0544***	[0.042,0.067]
Admissions : discharges ratio			0.0370***	[0.017,0.057]
Observations	11790		11544	
R ²	0.263		0.230	

The results for the bed occupancy intervals below and equal to 85% are grouped in the 85% category - only 6% of observations of bed occupancy were below that level and the results of the regression on those intervals were not significant.

95% confidence intervals in brackets

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

TABLE A2. Results of the robustness checks: fractional logit model with binomial family distribution

	Model (a)	95% CIs	Model (b)	95% CIs
Daily admissions ratio	0.639***	[0.500,0.777]		
Monday	0.103***	[0.069,0.136]	0.0622	[-0.024,0.149]
Tuesday	0.0724***	[0.046,0.099]	0.0259	[-0.054,0.106]
Thursday	-0.0468**	[-0.075,-0.019]	-0.0484**	[-0.084,-0.013]
Friday	-0.0961***	[-0.136,-0.056]	-0.116***	[-0.167,-0.065]
Saturday	0.00127	[-0.045,0.048]	-0.0734	[-0.173,0.026]
Sunday	0.134***	[0.085,0.182]	0.0655	[-0.081,0.212]
Long-stay patients	0.797	[-0.103,1.698]	1.008*	[0.048,1.968]
% Female	0.209	[-0.681,1.099]	0.435	[-0.376,1.246]
% No investigation	0.180	[-0.456,0.816]	0.158	[-0.496,0.813]
% Psychiatric conditions	0.796	[-4.158,5.751]	-0.303	[-5.427,4.822]
% Self-referrals	-1.108***	[-1.528,-0.688]	-1.091***	[-1.507,-0.675]
% Emergency services	-0.449	[-0.990,0.091]	-0.441	[-0.988,0.107]
Christmas	-0.278***	[-0.417,-0.138]	-0.431***	[-0.586,-0.277]
New Year's Eve	0.144*	[0.021,0.267]	0.268***	[0.129,0.406]
New Year's Day	0.0236	[-0.069,0.116]	0.0410	[-0.050,0.132]
Flu	1.548	[-6.118,9.214]	0.0268	[-7.939,7.992]
Size of ED	0.00116***	[0.001,0.002]	0.00115***	[0.001,0.002]
% A&E Senior doctors	-0.992	[-2.224,0.241]	-0.875	[-2.141,0.391]
% Respiratory medicine	0.161	[-0.341,0.663]	0.222	[-0.304,0.747]
Age of attendance 21-40	1.762***	[0.736,2.788]	1.891***	[0.843,2.939]
Age of attendance 41-60	1.576**	[0.505,2.647]	1.719***	[0.705,2.732]
Age of attendance 61-80	2.297***	[1.204,3.389]	2.623***	[1.572,3.675]
Age of attendance 80+	2.168**	[0.704,3.632]	2.853***	[1.432,4.275]
week=1	0	[0.000,0.000]	0	[0.000,0.000]
week=2	-0.239***	[-0.299,-0.178]	-0.229***	[-0.314,-0.143]
week=3	-0.431***	[-0.501,-0.361]	-0.428***	[-0.525,-0.331]
week=4	-0.382***	[-0.457,-0.307]	-0.368***	[-0.469,-0.268]
week=5	-0.148***	[-0.218,-0.078]	-0.0948*	[-0.189,-0.000]
week=6	-0.378***	[-0.459,-0.297]	-0.370***	[-0.478,-0.262]
week=7	-0.445***	[-0.534,-0.355]	-0.440***	[-0.557,-0.324]
week=8	-0.404***	[-0.506,-0.303]	-0.390***	[-0.516,-0.265]
week=9	-0.389***	[-0.488,-0.290]	-0.364***	[-0.498,-0.231]
week=48	-0.428***	[-0.557,-0.298]		
week=49	-0.210***	[-0.300,-0.120]	-0.171**	[-0.283,-0.059]

week=50	-0.120**	[-0.195,-0.044]	-0.0888	[-0.187,0.009]
week=51	-0.354***	[-0.433,-0.275]	-0.382***	[-0.485,-0.279]
week=52	-0.258***	[-0.337,-0.179]	-0.403***	[-0.492,-0.315]
Bed occupancy=85	0	[0.000,0.000]		
Bed occupancy=86	0.115	[-0.027,0.257]		
Bed occupancy=87	0.159*	[0.035,0.283]		
Bed occupancy=88	0.324***	[0.204,0.444]		
Bed occupancy=89	0.277**	[0.105,0.449]		
Bed occupancy=90	0.340***	[0.209,0.471]		
Bed occupancy=91	0.250***	[0.104,0.396]		
Bed occupancy=92	0.293***	[0.159,0.428]		
Bed occupancy=93	0.381***	[0.241,0.520]		
Bed occupancy=94	0.345***	[0.198,0.492]		
Bed occupancy=95	0.368***	[0.213,0.524]		
Bed occupancy=96	0.414***	[0.246,0.583]		
Bed occupancy=97	0.449***	[0.273,0.624]		
Bed occupancy=98	0.464***	[0.288,0.641]		
Bed occupancy=99	0.553***	[0.373,0.733]		
Bed occupancy=100	0.632***	[0.399,0.865]		
Total admissions			0.000127	[-0.000,0.001]
L1. Admissions : discharges ratio			0.152*	[0.033,0.270]
L2. Admissions : discharges ratio			0.108	[-0.084,0.301]
Admissions : discharges ratio			0.0966	[-0.125,0.319]
Observations	11790		11544	
R^2				

The results for the bed occupancy intervals below and equal to 85% are grouped in the 85% category - only 6% of observations of bed occupancy were below that level and the results of the regression on those intervals were not significant.

95% confidence intervals in brackets

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

TABLE A3. Results of the robustness checks: bed occupancy as a continuous variable and as three indicators

	Model (a) with bed occupancy as continuous	95% CIs	Model (a) with bed occupancy in three indicators	95% CIs
Daily admissions ratio	0.0862***	[0.067,0.106]	0.0844***	[0.065,0.103]
Monday	0.0182***	[0.013,0.023]	0.0187***	[0.014,0.023]
Tuesday	0.0133***	[0.009,0.017]	0.0133***	[0.009,0.017]
Thursday	-0.00934***	[-0.013,-0.005]	-0.00900***	[-0.013,-0.005]
Friday	-0.0202***	[-0.025,-0.015]	-0.0190***	[-0.024,-0.014]
Saturday	-0.00959**	[-0.016,-0.004]	-0.00790*	[-0.014,-0.002]
Sunday	0.0166***	[0.011,0.023]	0.0174***	[0.011,0.023]
Long-stay patients	0.0958**	[0.033,0.159]	0.0852**	[0.023,0.148]
% Female	0.0350	[-0.005,0.075]	0.0319	[-0.009,0.072]
% No investigation	0.0425*	[0.007,0.078]	0.0385*	[0.000,0.077]
% Psychiatric conditions	-0.0443	[-0.248,0.159]	-0.0286	[-0.234,0.176]
% Self-referrals	-0.0447*	[-0.079,-0.010]	-0.0467**	[-0.078,-0.015]
% Emergency services	-0.0314	[-0.083,0.021]	-0.0311	[-0.082,0.020]
Christmas	-0.0628***	[-0.076,-0.049]	-0.0577***	[-0.071,-0.045]
New Year's Eve	0.0324***	[0.017,0.047]	0.0300***	[0.015,0.045]
New Year's Day	0.00163	[-0.012,0.015]	0.00360	[-0.009,0.017]
Flu	0.413	[-0.173,0.999]	0.436	[-0.162,1.034]
Size of ED	0.0000692	[-0.000,0.000]	0.0000629	[-0.000,0.000]
% A&E Senior doctors	-0.0449	[-0.277,0.187]	-0.0456	[-0.277,0.186]
% Respiratory medicine	0.0262*	[0.005,0.047]	0.0261*	[0.005,0.047]
Age of attendance 21-40	0.105**	[0.038,0.172]	0.0983**	[0.032,0.165]
Age of attendance 41-60	0.219***	[0.152,0.286]	0.217***	[0.152,0.282]
Age of attendance 61-80	0.416***	[0.344,0.488]	0.413***	[0.341,0.484]
Age of attendance 80+	0.580***	[0.486,0.673]	0.578***	[0.485,0.671]
week=1	0	[0.000,0.000]	0	[0.000,0.000]
week=2	-0.0445***	[-0.054,-0.035]	-0.0445***	[-0.054,-0.035]
week=3	-0.0758***	[-0.087,-0.065]	-0.0752***	[-0.086,-0.064]
week=4	-0.0678***	[-0.079,-0.056]	-0.0673***	[-0.079,-0.056]
week=5	-0.0277***	[-0.038,-0.017]	-0.0277***	[-0.038,-0.017]
week=6	-0.0672***	[-0.078,-0.056]	-0.0670***	[-0.078,-0.056]
week=7	-0.0792***	[-0.092,-0.067]	-0.0785***	[-0.091,-0.066]
week=8	-0.0721***	[-0.085,-0.059]	-0.0712***	[-0.084,-0.059]
week=9	-0.0700***	[-0.082,-0.058]	-0.0696***	[-0.082,-0.058]

week=48	-0.0732***	[-0.090,-0.057]	-0.0738***	[-0.090,-0.057]
week=49	-0.0411***	[-0.053,-0.029]	-0.0420***	[-0.054,-0.030]
week=50	-0.0258***	[-0.036,-0.016]	-0.0257***	[-0.036,-0.016]
week=51	-0.0718***	[-0.082,-0.062]	-0.0695***	[-0.079,-0.060]
week=52	-0.0675***	[-0.078,-0.057]	-0.0619***	[-0.071,-0.052]
Bed occupancy continuous	0.00127***	[0.001,0.002]		
Bed occupancy<88			0	[0.000,0.000]
Bed occupancy88-92			0.0227***	[0.015,0.031]
Bed occupancy>92			0.0428***	[0.033,0.053]
Observations	11790		11790	
R ²	0.241		0.246	

Please note that only 6% of observations of bed occupancy are below 85%.

95% confidence intervals in brackets

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

TABLE A4. Results of the robustness checks: bed occupancy as explanatory variable without covariates

	Model (a) with bed occupancy	95% CIs
Bed occupancy=85	0	[0.000,0.000]
Bed occupancy=86	0.00606	[-0.008,0.020]
Bed occupancy=87	0.00588	[-0.007,0.019]
Bed occupancy=88	0.0258***	[0.014,0.038]
Bed occupancy=89	0.0236***	[0.011,0.036]
Bed occupancy=90	0.0350***	[0.022,0.048]
Bed occupancy=91	0.0347***	[0.022,0.047]
Bed occupancy=92	0.0411***	[0.028,0.055]
Bed occupancy=93	0.0447***	[0.031,0.059]
Bed occupancy=94	0.0538***	[0.040,0.067]
Bed occupancy=95	0.0586***	[0.044,0.073]
Bed occupancy=96	0.0701***	[0.055,0.085]
Bed occupancy=97	0.0724***	[0.058,0.087]
Bed occupancy=98	0.0856***	[0.070,0.101]
Bed occupancy=99	0.101***	[0.085,0.118]
Bed occupancy=100	0.120***	[0.100,0.139]
Observations	12130	
R2	0.071	