



## Appendix 1 - Estimation results for hospitalization rate for ACSC using fixed effects by age group, 2009-2018, Brazil

	0-4 years				5-19 years			20-64 years		
	Gastroenteritis (34%)	Lung diseases (15%)	Bacterial pneumonia (15%)	Asthma (13%)	Gastroenteritis (32%)	Renal diseases (16%)	Asthma (14%)	Renal diseases (14%)	Gastroenteritis (12%)	Heart failure (10%)
PMAQ	-0.048**	-0.009	-0.006	-0.023*	-0.009	-0.003	-0.007**	-0.010***	-0.010*	-0.001
	[-0.088 to -0.007]	[-0.028 to 0.010]	[-0.036 to 0.025]	[-0.045 to 0.000]	[-0.021 to 0.002]	[-0.008 to 0.002]	[-0.013 to -0.002]	[-0.016 to -0.003]	[-0.022 to 0.001]	[-0.004 to 0.003]
Primary Care Coverage	-0.166***	0.028	-0.075*	-0.048	-0.036**	-0.004	-0.007	-0.013	-0.027*	-0.003
	[-0.276 to -0.056]	[-0.023 to 0.078]	[-0.151 to 0.000]	[-0.111 to 0.015]	[-0.066 to -0.005]	[-0.018 to 0.010]	[-0.024 to 0.010]	[-0.033 to 0.007]	[-0.054 to 0.001]	[-0.011 to 0.006]
Education index	-13.629	22.225**	0.768	-37.438***	-4.300	3.700**	-8.289***	2.792	-14.802***	0.785
	[-53.925 to 26.668]	[2.477 to 41.973]	[-22.665 to 24.201]	[-60.423 to -14.454]	[-13.925 to 5.325]	[0.312 to 7.088]	[-14.570 to -2.008]	[-2.126 to -0.710]	[-23.511 to -6.093]	[-1.902 to 3.472]
GDP pc	-0.000	-0.000	-0.000	0.000	-0.000**	-0.000	-0.000*	-0.000	-0.000	-0.000**
	[-0.000 to 0.000]	[-0.000 to 0.000]	[-0.000 to 0.000]	[-0.000 to 0.000]	[-0.000 to -0.000]	[-0.000 to 0.000]	[-0.000 to 0.000]	[-0.000 to 0.000]	[-0.000 to 0.000]	[-0.000 to -0.000]
Hospital Beds	0.652***	0.020	0.177**	0.284***	0.298***	0.066***	0.093***	0.159***	0.248***	0.075***
	[0.367 to 0.937]	[-0.065 to 0.105]	[0.037 to 0.318]	[0.149 to 0.420]	[0.195 to 0.401]	[0.033 to 0.099]	[0.051 to 0.135]	[0.112 to 0.206]	[0.162 to 0.335]	[0.047 to 0.103]
Population density	0.077***	-0.001	0.018	0.025***	0.018***	-0.001	0.011***	0.004***	0.026***	0.003***
	[0.046 to 0.109]	[-0.015 to 0.013]	[-0.020 to 0.056]	[0.011 to 0.039]	[0.010 to 0.025]	[-0.003 to 0.000]	[0.008 to 0.015]	[0.002 to 0.006]	[0.014 to 0.037]	[0.001 to 0.005]
d2010	26.950***	0.129	-5.955***	-1.626*	2.803***	-0.053	-0.667***	0.104	2.114***	-0.541***
	[23.711 to 30.188]	[-1.024 to 1.282]	[-7.772 to -4.137]	[-3.309 to 0.056]	[2.010 to 3.596]	[-0.391 to 0.284]	[-1.146 to -0.189]	[-0.297 to 0.505]	[1.511 to 2.717]	[-0.811 to -0.271]
d2011	-21.634***	1.818**	-9.429***	-6.894***	-1.915***	0.014	-1.220***	-0.476	-1.199**	-0.898***
	[-25.778 to -17.490]	[0.007 to 3.630]	[-12.319 to -6.539]	[-9.335 to -4.453]	[-3.039 to -0.791]	[-0.451 to 0.479]	[-1.871 to -0.570]	[-1.068 to 0.115]	[-2.170 to -0.228]	[-1.255 to -0.541]
d2012	-14.793***	2.065**	-12.602***	-11.712***	-2.936***	0.118	-2.950***	-1.016***	-3.126***	-1.838***
	[-19.348 to -10.238]	[0.129 to 4.001]	[-15.665 to -9.539]	[-14.211 to -9.212]	[-4.155 to -1.717]	[-0.392 to 0.627]	[-3.636 to -2.265]	[-1.671 to -0.360]	[-4.219 to -2.033]	[-2.221 to -1.456]
d2013	-28.985***	5.078***	-11.458***	-12.126***	-2.571***	0.731**	-2.825***	-1.161***	-3.200***	-2.323***
	[-34.672 to -23.297]	[2.307 to 7.850]	[-15.482 to -7.434]	[-15.303 to -8.949]	[-4.187 to -0.954]	[0.095 to 1.368]	[-3.680 to -1.971]	[-1.983 to -0.339]	[-4.619 to -1.781]	[-2.816 to -1.830]
d2014	-20.224***	5.712***	-12.584***	-16.150***	-2.950***	1.050***	-3.738***	-0.881**	-5.364***	-2.904***
	[-26.207 to -14.240]	[2.907 to 8.516]	[-16.576 to -8.592]	[-19.333 to -12.967]	[-4.558 to -1.342]	[0.400 to 1.700]	[-4.590 to -2.885]	[-1.730 to -0.031]	[-6.775 to -3.952]	[-3.398 to -2.409]
d2015	-46.195***	8.353***	-13.662***	-14.345***	-8.102***	0.521	-3.547***	-1.017**	-6.616***	-3.408***
	[-52.426 to -39.963]	[5.304 to 11.401]	[-17.843 to -9.482]	[-17.806 to -10.883]	[-9.774 to -6.429]	[-0.184 to 1.227]	[-4.479 to -2.614]	[-1.935 to -0.098]	[-8.144 to -5.087]	[-3.918 to -2.899]
d2016	-33.621***	4.351***	-15.333***	-19.522***	-6.798***	-0.725*	-4.815***	-2.307***	-8.263***	-3.525***
	[-40.275 to -26.967]	[1.077 to 7.626]	[-20.108 to -10.558]	[-23.208 to -15.835]	[-8.638 to -4.957]	[-1.468 to 0.018]	[-5.788 to -3.843]	[-3.286 to -1.328]	[-9.944 to -6.583]	[-4.088 to -2.962]

d2017	-53.030*** [-59.632 to -46.429]	10.603*** [7.399 to 13.807]	-13.530*** [-18.298 to -8.761]	-18.083*** [-21.940 to -14.226]	-8.944*** [-10.884 to -7.004]	-0.504 [-1.272 to 0.264]	-4.529*** [-5.514 to -3.545]	-1.857*** [-2.873 to -0.841]	-9.709*** [-11.411 to -8.007]	-3.704*** [-4.285 to -3.123]
d2018	-55.190*** [-61.879 to -48.500]	12.351*** [8.918 to 15.783]	-11.769*** [-16.416 to -7.122]	-21.248*** [-25.202 to -17.294]	-11.929*** [-13.817 to -10.040]	-1.019*** [-1.781 to -0.257]	-4.904*** [-5.915 to -3.892]	-1.771*** [-2.802 to -0.739]	-10.427*** [-12.128 to -8.725]	-4.004*** [-4.595 to -3.413]
Constant	145.525*** [116.240 to 174.810]	6.403 [-7.886 to 20.691]	46.597*** [28.702 to 64.492]	73.240*** [55.956 to 90.524]	29.706*** [22.235 to 37.176]	7.896*** [5.303 to 10.489]	15.699*** [11.022 to 20.376]	14.765*** [10.938 to 18.591]	30.921*** [24.303 to 37.538]	9.948*** [7.922 to 11.975]
Observations	55,640	55,640	55,640	55,640	55,640	55,640	55,640	55,640	55,640	55,640
R-squared	0.079	0.012	0.007	0.034	0.042	0.005	0.032	0.012	0.065	0.041
Number of id	5,564	5,564	5,564	5,564	5,564	5,564	5,564	5,564	5,564	5,564

95% confidence intervals in brackets.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Appendix 2 - Estimation results for hospitalization rate for transport accidents using fixed effects, 0-64 years old, 2009-2018, Brazil

	0-64 years
PMAQ	0.0003 [-0.003 to 0.003]
Primary Care Coverage	-0.004 [-0.012 to 0.004]
Education index	0.521 [-1.941 to 2.984]
GDP pc	0.000 [-0.000 to 0.000]
Hospital Beds	0.031*** [0.013 to 0.049]
Population density	-0.007*** [-0.010 to -0.004]
d2010	1.591*** [1.414 to 1.767]
d2011	1.942*** [1.671 to 2.213]
d2012	2.601*** [2.295 to 2.906]
d2013	3.319*** [2.911 to 3.728]
d2014	4.223*** [3.807 to 4.640]
d2015	4.731*** [4.294 to 5.169]
d2016	5.068*** [4.594 to 5.541]
d2017	4.890*** [4.423 to 5.358]
d2018	4.803*** [4.329 to 5.277]
Constant	6.160*** [4.329 to 7.991]
Observations	55,640
R-squared	0.061
Number of id	5,564

95% confidence intervals in brackets.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix 3 - Sensitivity analyses

0-64 years				
PMAQ			-0.037*** [-0.061 to -0.013]	0.9996*** [0.9995 - 0.9996]
All PMAQ teams	-0.038*** [-0.062 to -0.013]			
PMAQ (dummy)		-1.409 [-3.760 to 0.942]		
Primary Care Coverage	-0.100*** [-0.169 to -0.031]	-0.089** [-0.159 to -0.020]	-0.103*** [-0.172 to -0.034]	0.998*** [0.9976 - 0.9983]
Education index	-15.438 [-35.786 to 4.910]	-15.923 [-36.260 to 4.414]	-17.761* [-37.975 to 2.453]	2.206*** [2.0510 - 2.3741]
GDP pc	-0.000** [-0.000 to -0.000]	-0.000** [-0.000 to -0.000]	-0.000** [-0.000 to -0.000]	1.000*** [1.0000 - 1.0000]
Hospital Beds	0.868*** [0.648 to 1.088]	0.869*** [0.648 to 1.089]	0.876*** [0.658 to 1.095]	1.004*** [1.0023 - 1.0031]
Population density	0.050*** [0.033 to 0.068]	0.051*** [0.034 to 0.068]	0.054*** [0.035 to 0.073]	1.003*** [1.0005 - 1.0006]
d2010	2.127*** [0.822 to 3.432]	2.130*** [0.825 to 3.436]	2.765*** [1.449 to 4.081]	0.977*** [0.9748 - 0.9993]
d2011	-8.426*** [-10.642 to -6.209]	-9.458*** [-11.810 to -7.105]	-6.810*** [-8.975 to -4.646]	0.895*** [0.8831 - 0.9091]
d2012	-14.064*** [-16.535 to -11.593]	-15.061*** [-17.671 to -12.451]	-13.061*** [-15.485 to -10.638]	0.845*** [0.8330 - 0.8578]
d2013	-13.923*** [-17.164 to -10.682]	-15.826*** [-19.025 to -12.627]	-13.861*** [-17.050 to -10.672]	0.812*** [0.7988 - 0.8272]
d2014	-15.868*** [-19.185 to -12.551]	-17.588*** [-20.892 to -14.284]	-15.518*** [-18.781 to -12.255]	0.795*** [0.7816 - 0.8091]
d2015	-22.485*** [-26.063 to -18.908]	-24.137*** [-27.698 to -20.576]	-21.970*** [-25.507 to -18.432]	0.740*** [0.7270 - 0.7533]
d2016	-25.717*** [-29.557 to -21.878]	-27.873*** [-31.584 to -24.162]	-25.311*** [-29.103 to -21.518]	0.719*** [0.7050 - 0.7325]
d2017	-25.762*** [-29.720 to -21.803]	-27.855*** [-31.732 to -23.978]	-26.669*** [-30.577 to -22.761]	0.716*** [0.7028 - 0.7303]
d2018	-26.644*** [-30.702 to -22.586]	-28.689*** [-32.686 to -24.691]	-27.661*** [-31.686 to -23.636]	0.707*** [0.6939 - 0.7212]
Constant	126.487*** [110.719 to 142.256]	125.834*** [110.026 to 141.642]	128.830*** [113.142 to 144.518]	5.904*** [5.5709 - 6.2574]
Observations	55,640	55,640	55,640	55,640
R-squared	0.076	0.075	0.080	
Number of id	5,564	5,564	5,564	5,564

95% confidence intervals in brackets.

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1