

SUPPLEMENTAL MATERIAL

Burden of stroke in Europe: 30-year projections of incidence, prevalence, deaths, and disability-adjusted life years (DALYs)

Hatem A Wafa, Charles D. A. Wolfe, Eva Emmet, Gregory A Roth, Catherine O Johnson,
and Yanzhong Wang

LIST OF TABLES

Table I: Models coefficients and goodness of fit in males.	4
Table II: Models coefficients and goodness of fit in females.	6

LIST OF FIGURES

Figure I: Prediction performance of different models in the UK.....	7
Figure II: Prediction performance of different models in Belgium.	7
Figure III: Projected number of incident strokes between 2017 and 2047.....	8
Figure IV: Projected number of prevalent strokes between 2017 and 2047.....	9
Figure V: Projected number of stroke deaths between 2017 and 2047.	10
Figure VI: Projected number of stroke DALYs between 2017 and 2047.....	11
Figure VII: Age- and sex-adjusted incidence rate of stroke in 2017 and 2047.	12
Figure VIII: Age- and sex-adjusted prevalence rate of stroke in 2017 and 2047.....	13
Figure IX: Age- and sex-adjusted mortality rate of stroke in 2017 and 2047.	14
Figure X: Age- and sex-adjusted rate of DALYs lost because of stroke in 2017 and 2047....	15

Age Group	Parameter	Incidence			Prevalence			Death			DALYs		
		Linear	Poisson	Exponential	Linear	Poisson	Exponential	Linear	Poisson	Exponential	Linear	Poisson	Exponential
0-19	Years	-0.569941*	-0.021427*	-0.019834*	-5.499448*	-0.026614*	-0.023579*	-0.067717*	-0.051268*	-0.056122*	-5.509371*	-0.035163*	-0.036223*
	GDP	2.6e-05*	1e-06*	2e-06*	0.001205*	6e-06*	6e-06*	-1.2e-05*	-1e-05*	-9e-06*	-0.001287*	-9e-06*	-8e-06*
	AIC	551.0242	Inf	156.929**	932.6114**	Inf	969.806	143.811**	Inf	731.875	812.4855	Inf	176.592**
20-24	Years	-0.053016*	-0.006402*	-0.006397*	-1.725499*	-0.014368*	-0.013784*	-0.044778*	-0.03732*	-0.042671*	-2.995584*	-0.028457*	-0.030882*
	GDP	-4.8e-05*	-7e-06*	-6e-06*	0.000182*	2e-06*	2e-06*	-1.6e-05*	-1.7e-05*	-1.3e-05*	-0.001272*	-1.5e-05*	-1.2e-05*
	AIC	245.4682	Inf	-784.318**	756.4926	Inf	378.741**	117.0295**	Inf	696.968	756.97	Inf	323.916**
25-29	Years	-0.062496*	-0.004199*	-0.004466*	-1.300165*	-0.007328*	-0.007061*	-0.06173*	-0.030436*	-0.036099*	-3.774259*	-0.023839*	-0.026832*
	GDP	-0.000122*	-1.1e-05*	-9e-06*	-0.000638*	-4e-06*	-3e-06*	-3.7e-05*	-2.6e-05*	-1.9e-05*	-0.002522*	-2.3e-05*	-1.6e-05*
	AIC	343.2588	Inf	-494.556**	771.7045	Inf	-122.202**	194.2332**	Inf	784.684	822.6137	Inf	454.601**
30-34	Years	-0.122258*	-0.004103*	-0.004721*	-1.305753*	-0.004602*	-0.004746*	-0.099894*	-0.022458*	-0.030939*	-5.553172*	-0.018422*	-0.023983*
	GDP	-0.000259*	-1.2e-05*	-1e-05*	-0.00192*	-8e-06*	-7e-06*	-9.3e-05*	-3.7e-05*	-2.6e-05*	-0.005714*	-3.3e-05*	-2.3e-05*
	AIC	446.9793	Inf	-468.255**	817.8775	Inf	-258.278**	295.726**	Inf	749.199	911.5821	Inf	505.304**
35-39	Years	-0.237246*	-0.00461*	-0.005502*	-1.589135*	-0.003185*	-0.003532*	-0.181236*	-0.018595*	-0.028785*	-9.115821*	-0.015495*	-0.022909*
	GDP	-0.000447*	-1.2e-05*	-1e-05*	-0.003584*	-9e-06*	-8e-06*	-0.000206*	-4.3e-05*	-2.8e-05*	-0.011443*	-3.9e-05*	-2.5e-05*
	AIC	540.7436	Inf	-397.082**	872.9555	Inf	-426.999**	418.7304**	Inf	920.377	1021.3376	Inf	745.984**
40-44	Years	-0.223551*	-0.001466*	-0.00282*	-1.08753	-0.000568*	-0.001307	-0.292984*	-0.010531*	-0.024341*	-13.239643*	-0.00886*	-0.019515*
	GDP	-0.001076*	-1.5e-05*	-1.3e-05*	-0.008263	-1.4e-05*	-0.000011	-0.000491*	-5.3e-05*	-3.3e-05*	-0.024264*	-4.8e-05*	-3e-05*
	AIC	650.9485	Inf	-255.651**	968.7138	Inf	-315.551**	538.0685**	Inf	1010.402	1125.2386	Inf	871.31**
45-49	Years	-0.07692	0.001065*	-0.000588	-0.378686	0.000846*	-0.000313	-0.418187*	-0.004748*	-0.019069*	-16.581917*	-0.003573*	-0.015039*
	GDP	-0.0021	-1.8e-05*	-0.000015	-0.015272	-1.5e-05*	-0.000012	-0.000962*	-5.6e-05*	-3.4e-05*	-0.042656*	-5.2e-05*	-3.2e-05*
	AIC	741.8795	Inf	-142.723**	1062.8467	Inf	-183.593**	632.7535**	Inf	1007.621	1203.9221	Inf	890.926**
50-54	Years	0.197291	0.002965*	0.000886	0.088305	0.001585*	0.000168	-0.631859*	-0.00103	-0.016011*	-21.874334*	-0.000165	-0.01228*
	GDP	-0.003895	-2.1e-05*	-0.000017	-0.028083	-1.8e-05*	-0.000014	-0.001818*	-0.00006	-3.6e-05*	-0.071815*	-0.000056	-3.4e-05*
	AIC	830.1925	Inf	-30.649**	1154.2813	Inf	-31.739**	729.4504**	Inf	1115.814	1283.2333	Inf	1001.639**
55-59	Years	1.139532*	0.005778*	0.003028*	6.191679	0.004115*	0.002054	-0.979391*	0.000835	-0.015554*	-28.18128*	0.002034*	-0.011429*
	GDP	-0.006421*	-2.4e-05*	-1.8e-05*	-0.05043	-2.1e-05*	-0.000016	-0.003222*	-0.000062	-3.7e-05*	-0.112446*	-5.8e-05*	-3.5e-05*
	AIC	904.1503	Inf	69.363**	1237.1123	Inf	107.692**	813.8462**	Inf	1129.73	1348.8309	Inf	1026.75**
60-64	Years	1.361238*	0.005413*	0.001816	13.865515*	0.00558*	0.003008*	-1.955617*	-0.001162*	-0.018078*	-47.502461*	0.000757*	-0.013555*
	GDP	-0.009466*	-2.5e-05*	-0.000018	-0.080572*	-2.3e-05*	-1.7e-05*	-0.005641*	-5.9e-05*	-3.6e-05*	-0.16979*	-5.6e-05*	-3.4e-05*
	AIC	963.16	Inf	114.434**	1303.0883	Inf	174.083**	898.0688**	Inf	1136.181	1410.5979	Inf	1046.304**
65-69	Years	1.600244	0.005046*	0.000535	27.401899*	0.006958*	0.003972*	-3.91492*	-0.004892*	-0.021514*	-78.990465*	-0.002202*	-0.01664*
	GDP	-0.012747	-2.5e-05*	-0.000018	-0.108524*	-2.3e-05*	-1.7e-05*	-0.009069*	-5.3e-05*	-3.3e-05*	-0.228703*	-5.1e-05*	-3.2e-05*
	AIC	1012.3594	Inf	173.563**	1345.1278	Inf	154.244**	971.2901**	Inf	1069.765	1456.3759	Inf	993.481**
70-74	Years	0.207662	0.00238*	-0.001857	34.29929*	0.006503*	0.003795*	-9.462104*	-0.012355*	-0.026071*	-161.391338*	-0.009123*	-0.020966*
	GDP	-0.015708	-2.2e-05*	-0.000017	-0.132244*	-2.2e-05*	-1.6e-05*	-0.014264*	-4.4e-05*	-2.9e-05*	-0.290212*	-4.3e-05*	-2.8e-05*
	AIC	1048.4037	Inf	100.505**	1374.6473	Inf	89.508**	1044.797	Inf	925.54**	1496.4453	Inf	843.985**

75-79	Years	-1.984921	-0.000007	-0.003717*	47.204485*	0.006452*	0.004143*	-18.394946*	-0.016973*	-0.027347*	-246.913826*	-0.013475*	-0.022439*
	GDP	-0.018191	-0.000018	-1.5e-05*	-0.140095*	-1.8e-05*	-1.4e-05*	-0.020463*	-3.4e-05*	-2.3e-05*	-0.324184*	-3.3e-05*	-2.3e-05*
	AIC	1080.4041	Inf	20.021**	1384.5808	Inf	-76.354**	1111.6524	Inf	762.605**	1523.3824	Inf	672.816**
80-84	Years	-6.408331*	-0.003023*	-0.005248*	83.075201*	0.008475*	0.006498*	-27.867657*	-0.016701*	-0.023963*	-274.453082*	-0.013294*	-0.019557*
	GDP	-0.018299*	-1.3e-05*	-1.1e-05*	-0.127202*	-1.4e-05*	-1.1e-05*	-0.027204*	-2.5e-05*	-1.8e-05*	-0.320264*	-2.5e-05*	-1.8e-05*
	AIC	1104.9504	Inf	-167.818**	1385.2735	Inf	-219.191**	1169.1972	Inf	573.75**	1534.1067	Inf	471.275**
85-89	Years	-15.083111*	-0.006752*	-0.0076*	116.266241*	0.010598*	0.009257*	-34.784979*	-0.014115*	-0.017968*	-237.796039*	-0.010987*	-0.014304*
	GDP	-0.016143*	-9e-06*	-7e-06*	-0.09886*	-1e-05*	-8e-06*	-0.032026*	-1.8e-05*	-1.4e-05*	-0.270441*	-1.8e-05*	-1.4e-05*
	AIC	1139.9675	Inf	-260.405**	1383.5937	Inf	-286.348**	1223.6051	Inf	402.992**	1535.6966	Inf	288.291**
90-94	Years	-19.89117*	-0.007747*	-0.008648*	142.555187*	0.013211*	0.012523*	-47.264285*	-0.014362*	-0.016607*	-215.94479*	-0.010976*	-0.012738*
	GDP	-0.013432*	-6e-06*	-5e-06*	-0.069496*	-7e-06*	-6e-06*	-0.032647*	-1.2e-05*	-1e-05*	-0.191217*	-1.2e-05*	-1e-05*
	AIC	1175.701	Inf	-181.122**	1407.5923	Inf	-67.242**	1263.2348	Inf	282.315**	1517.0982	Inf	148.502**
95+	Years	-4.840201	-0.001601*	-0.003458*	232.429596*	0.023252*	0.020672*	-14.132521	-0.002466*	-0.006302*	-13.327837	-0.000116*	-0.003366
	GDP	-0.012419	-5e-06*	-3e-06*	-0.056885*	-6e-06*	-3e-06*	-0.045688	-1.2e-05*	-9e-06*	-0.159479	-1.2e-05*	-0.000008
	AIC	1260.9626	Inf	446.471**	1489.264	Inf	678.162**	1366.3943	Inf	773.812**	1549.6182	Inf	667.476**

Table I: Models coefficients and goodness of fit based on the AIC criteria for each stroke measure by age groups in males.

* denotes significant coefficient ($p < 0.05$).

** indicates the selected model (lowest AIC).

Abbreviations: AIC, Akaike information criterion; and GDP, gross domestic product per capita adjusted for purchasing power parity in 2011 US Dollars.

Age Group	Parameter	Incidence			Prevalence			Death			DALYs		
		Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
0-19	Years	-0.333107*	-0.011659*	-0.011018*	-2.537525*	-0.012284*	-0.010465*	-0.051215*	-0.049019*	-0.052263*	-3.83362*	-0.025722*	-0.026004*
	GDP	-8.7e-05*	-3e-06*	-2e-06*	0.00026*	1e-06*	2e-06*	-4e-06*	-4e-06*	-3e-06*	-0.000923*	-7e-06*	-6e-06*
	AIC	527.4975	Inf	-101.752**	887.5231	Inf	777.472**	108.7079**	Inf	841.917	784.0906	Inf	45.98**
20-24	Years	-0.012107*	-0.001021	-0.001329*	-0.019087	0.000181	0.000107	-0.032003*	-0.036438*	-0.040967*	-1.985734*	-0.021608*	-0.023194*
	GDP	-6.3e-05*	-0.000008	-7e-06*	-0.00094	-0.000008	-0.000006	-1e-05*	-1.3e-05*	-1e-05*	-0.000957*	-1.3e-05*	-1e-05*
	AIC	243.5325	Inf	-906.509**	741.415	Inf	16.091**	45.5829**	Inf	583.825	697.3852	Inf	7.045**
25-29	Years	-0.003475	0.00027	-0.000102	0.07088	0.000635	0.000433	-0.05027*	-0.037117*	-0.043028*	-2.847673*	-0.022431*	-0.025061*
	GDP	-0.000126	-0.00001	-0.000008	-0.001228	-0.000007	-0.000006	-1.5e-05*	-1.3e-05*	-9e-06*	-0.001376*	-1.3e-05*	-1e-05*
	AIC	334.1322	Inf	-750.617**	762.5498	Inf	-288.446**	104.6761**	Inf	489.445	747.7216	Inf	-2.738**
30-34	Years	-0.091098*	-0.003259*	-0.003463*	0.38743	0.001694*	0.001308	-0.079373*	-0.033346*	-0.038747*	-4.116911*	-0.021017*	-0.023831*
	GDP	-0.000169*	-7e-06*	-6e-06*	-0.002332	-9e-06*	-0.000007	-3.2e-05*	-1.7e-05*	-1.3e-05*	-0.002591*	-1.7e-05*	-1.3e-05*
	AIC	401.0426	Inf	-920.86**	812.4511	Inf	-417.603**	205.1058**	Inf	609.678	832.8022	Inf	184.807**
35-39	Years	-0.283276*	-0.006659*	-0.007013*	0.221467	0.000943*	0.000581	-0.150417*	-0.031882*	-0.038992*	-7.268494*	-0.021842*	-0.025922*
	GDP	-0.000176*	-5e-06*	-4e-06*	-0.00398	-9e-06*	-0.000008	-7.3e-05*	-2.1e-05*	-1.4e-05*	-0.004916*	-2e-05*	-1.4e-05*
	AIC	485.2766	Inf	-733.151**	864.7858	Inf	-668.988**	306.4725**	Inf	586.293	920.3755	Inf	276.613**
40-44	Years	-0.366346*	-0.004883*	-0.005628*	-0.287851	0.000101	-0.000293	-0.242791*	-0.024608*	-0.032446*	-10.64093*	-0.017522*	-0.02251*
	GDP	-0.000511*	-8e-06*	-7e-06*	-0.006228	-0.00001	-0.000008	-0.000188*	-3e-05*	-2e-05*	-0.010505*	-2.8e-05*	-1.9e-05*
	AIC	597.0921	Inf	-409.4**	934.5924	Inf	-650.831**	413.5503**	Inf	564.268	1011.2821	Inf	342.342**
45-49	Years	-0.366651*	-0.0026*	-0.003775*	-0.477491	0.000192	-0.000418	-0.373927*	-0.018722*	-0.028045*	-14.578784*	-0.013212*	-0.019559*
	GDP	-0.001132*	-1.2e-05*	-1e-05*	-0.01069	-0.000011	-0.000009	-0.000402*	-3.7e-05*	-2.3e-05*	-0.019647*	-3.4e-05*	-2.2e-05*
	AIC	694.9057	Inf	-166.532**	1019.6916	Inf	-458.428**	517.7485**	Inf	688.612	1097.8991	Inf	513.879**
50-54	Years	-0.400247*	-0.001208*	-0.002894*	-1.550938	-0.000038	-0.000908	-0.554508*	-0.013837*	-0.023869*	-19.074905*	-0.009285*	-0.016248*
	GDP	-0.002127*	-1.6e-05*	-1.3e-05*	-0.019008	-0.000013	-0.00001	-0.000784*	-4.6e-05*	-2.7e-05*	-0.033859*	-4.1e-05*	-2.5e-05*
	AIC	770.6347	Inf	-38.587**	1108.4757	Inf	-238.063**	617.4984**	Inf	831.042	1179.7727	Inf	679.122**
55-59	Years	-0.185381	0.001006*	-0.001485	-0.374178	0.001087*	-0.000363	-0.906354*	-0.011774*	-0.023915*	-26.616641*	-0.007088*	-0.015745*
	GDP	-0.00346	-2e-05*	-0.000016	-0.033126	-1.6e-05*	-0.000012	-0.001433*	-5.3e-05*	-3e-05*	-0.054458*	-4.7e-05*	-2.8e-05*
	AIC	831.9758	Inf	56.838**	1190.3113	Inf	-40.708**	707.336**	Inf	984.69	1250.7626	Inf	832.807**
60-64	Years	-0.096599	0.002049*	-0.000917	1.076533	0.001961*	-0.000122	-1.822079*	-0.014214*	-0.027678*	-45.729131*	-0.008706*	-0.018765*
	GDP	-0.005614	-2.3e-05*	-0.000017	-0.053772	-1.9e-05*	-0.000014	-0.002592*	-5.3e-05*	-3e-05*	-0.084553*	-4.8e-05*	-2.9e-05*
	AIC	893.6774	Inf	107.241**	1259.6859	Inf	97.46**	799.517**	Inf	1096.266	1319.6999	Inf	949.764**
65-69	Years	0.275382	0.003271*	-0.000063	9.546429	0.004091*	0.00132	-3.841461*	-0.016364*	-0.031565*	-79.860655*	-0.010472*	-0.022427*
	GDP	-0.008453	-2.4e-05*	-0.000018	-0.081081	-2.1e-05*	-0.000016	-0.005001*	-5.2e-05*	-3.1e-05*	-0.133992*	-4.9e-05*	-2.9e-05*
	AIC	951.3383	Inf	172.622**	1313.1884	Inf	187.319**	895.1313**	Inf	1094.388	1385.7901	Inf	971.709**
70-74	Years	-0.116798	0.002436*	-0.001328	20.275989*	0.005616*	0.002629*	-8.765941*	-0.020309*	-0.034421*	-149.732809*	-0.014579*	-0.026009*
	GDP	-0.012742	-2.4e-05*	-0.000018	-0.112791*	-2.3e-05*	-1.7e-05*	-0.009541*	-4.5e-05*	-2.8e-05*	-0.202503*	-4.4e-05*	-2.7e-05*
	AIC	1007.7853	Inf	140.071**	1355.0623	Inf	224.75**	994.5277**	Inf	1028.922	1449.3022	Inf	920.402**

75-79	Years	-0.98649	0.001507*	-0.002828*	41.058041*	0.007383*	0.004415*	-16.740892*	-0.01957*	-0.032219*	-222.25333*	-0.014798*	-0.025258*
	GDP	-0.0185	-2.3e-05*	-1.8e-05*	-0.141559*	-2.3e-05*	-1.7e-05*	-0.017705*	-3.9e-05*	-2.5e-05*	-0.286032*	-3.8e-05*	-2.5e-05*
	AIC	1067.1209	Inf	169.632**	1384.3943	Inf	177.325**	1085.8789	Inf	882.276**	1499.6231	Inf	781.471**
80-84	Years	-4.4926*	-0.001547*	-0.004349*	82.848716*	0.010245*	0.007567*	-25.642046*	-0.01604*	-0.025409*	-246.556231*	-0.01208*	-0.02012*
	GDP	-0.021*	-1.7e-05*	-1.4e-05*	-0.152068*	-1.9e-05*	-1.5e-05*	-0.028542*	-3.1e-05*	-2.1e-05*	-0.340289*	-3e-05*	-2.1e-05*
	AIC	1098.3412	Inf	-84.942**	1396.4612	Inf	45.998**	1163.1378	Inf	694.503**	1530.0356	Inf	601.981**
85-89	Years	-12.053649*	-0.005135*	-0.006498*	118.181585*	0.012048*	0.010389*	-31.266005*	-0.012001*	-0.017612*	-205.667088*	-0.008734*	-0.013594*
	GDP	-0.020506*	-1.2e-05*	-1e-05*	-0.133862*	-1.5e-05*	-1.2e-05*	-0.037598*	-2.2e-05*	-1.6e-05*	-0.320692*	-2.2e-05*	-1.6e-05*
	AIC	1132.9152	Inf	-286.482**	1393.9186	Inf	-116.766**	1222.8373	Inf	448.368**	1537.4938	Inf	357.571**
90-94	Years	-18.149367*	-0.006755*	-0.007912*	137.246856*	0.013572*	0.012705*	-39.408615*	-0.010657*	-0.014276*	-170.511348*	-0.007541*	-0.010532*
	GDP	-0.019773*	-9e-06*	-7e-06*	-0.103192*	-1.1e-05*	-9e-06*	-0.0449*	-1.7e-05*	-1.3e-05*	-0.262715*	-1.7e-05*	-1.3e-05*
	AIC	1152.7056	Inf	-402.471**	1388.9202	Inf	-162.056**	1270.4505	Inf	281.495**	1526.5578	Inf	178.986**
95+	Years	-15.220984*	-0.005016*	-0.006024*	174.132807*	0.01837*	0.016856*	-23.493619*	-0.003998*	-0.007044*	-43.465139	-0.001548*	-0.004225*
	GDP	-0.020062*	-8e-06*	-7e-06*	-0.083201*	-9e-06*	-8e-06*	-0.056322*	-1.5e-05*	-1.1e-05*	-0.2027	-1.5e-05*	-1.2e-05*
	AIC	1200.1054	Inf	-27.87**	1424.6332	Inf	311.252**	1328.5702	Inf	383.322**	1512.7313	Inf	319.679**

Table II: Models coefficients and goodness of fit based on the AIC criteria for each stroke measure by age groups in females.

* denotes significant coefficient ($p < 0.05$).

** indicates the selected model (lowest AIC).

Abbreviations: AIC, Akaike information criterion; and GDP, gross domestic product per capita adjusted for purchasing power parity in 2011 US Dollars.

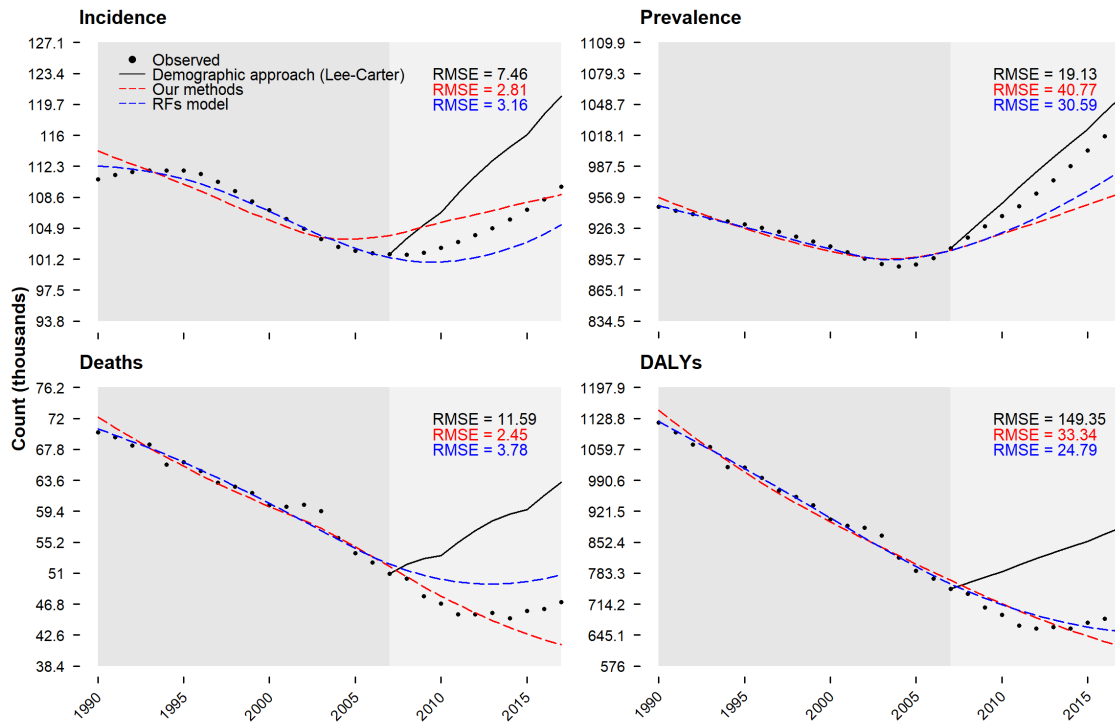


Figure I: Prediction performance of different models in the UK.

Demographic approach assumes constant age-specific rates and apply those to the corresponding populations in each prediction year. RFs model is a regression model adjusted for the changes in prevalence of hypertension, diabetes mellitus, and atrial fibrillation.

Abbreviations: RFs, risk factors; RMSE, root mean squared error; and DALYs, disability-adjusted life years.

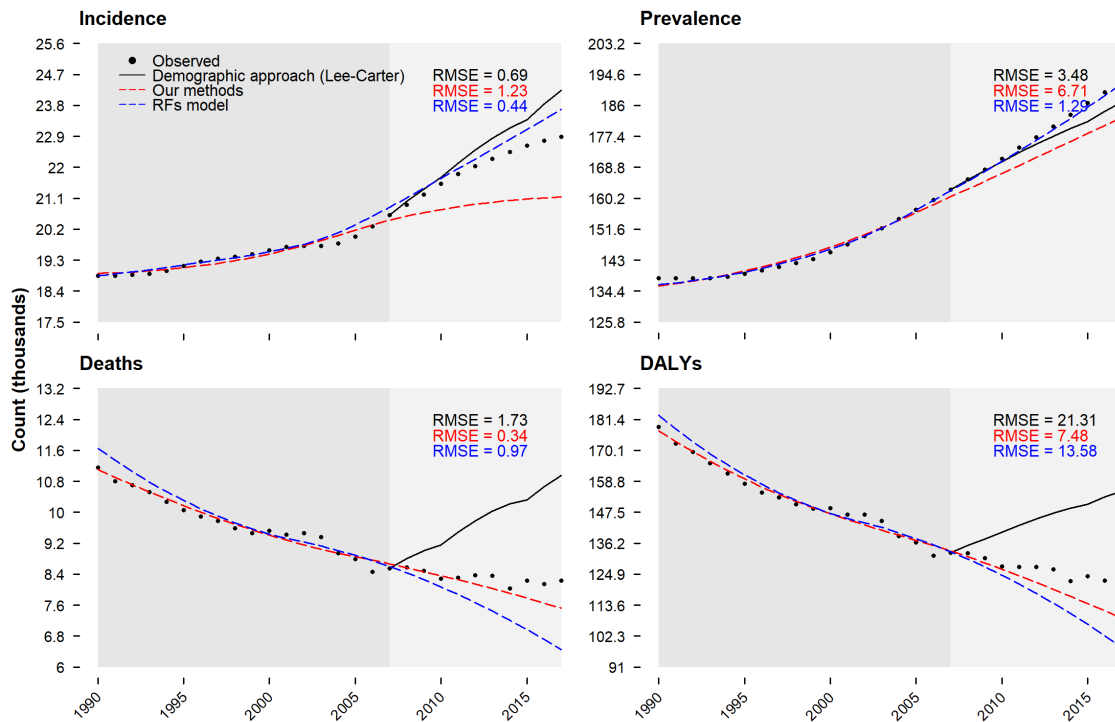


Figure II: Prediction performance of different models in Belgium.

Demographic approach assumes constant age-specific rates and apply those to the corresponding populations in each prediction year. RFs model is a regression model adjusted for the changes in prevalence of hypertension, diabetes mellitus, and atrial fibrillation.

Abbreviations: RFs, risk factors; RMSE, root mean squared error; and DALYs, disability-adjusted life years.

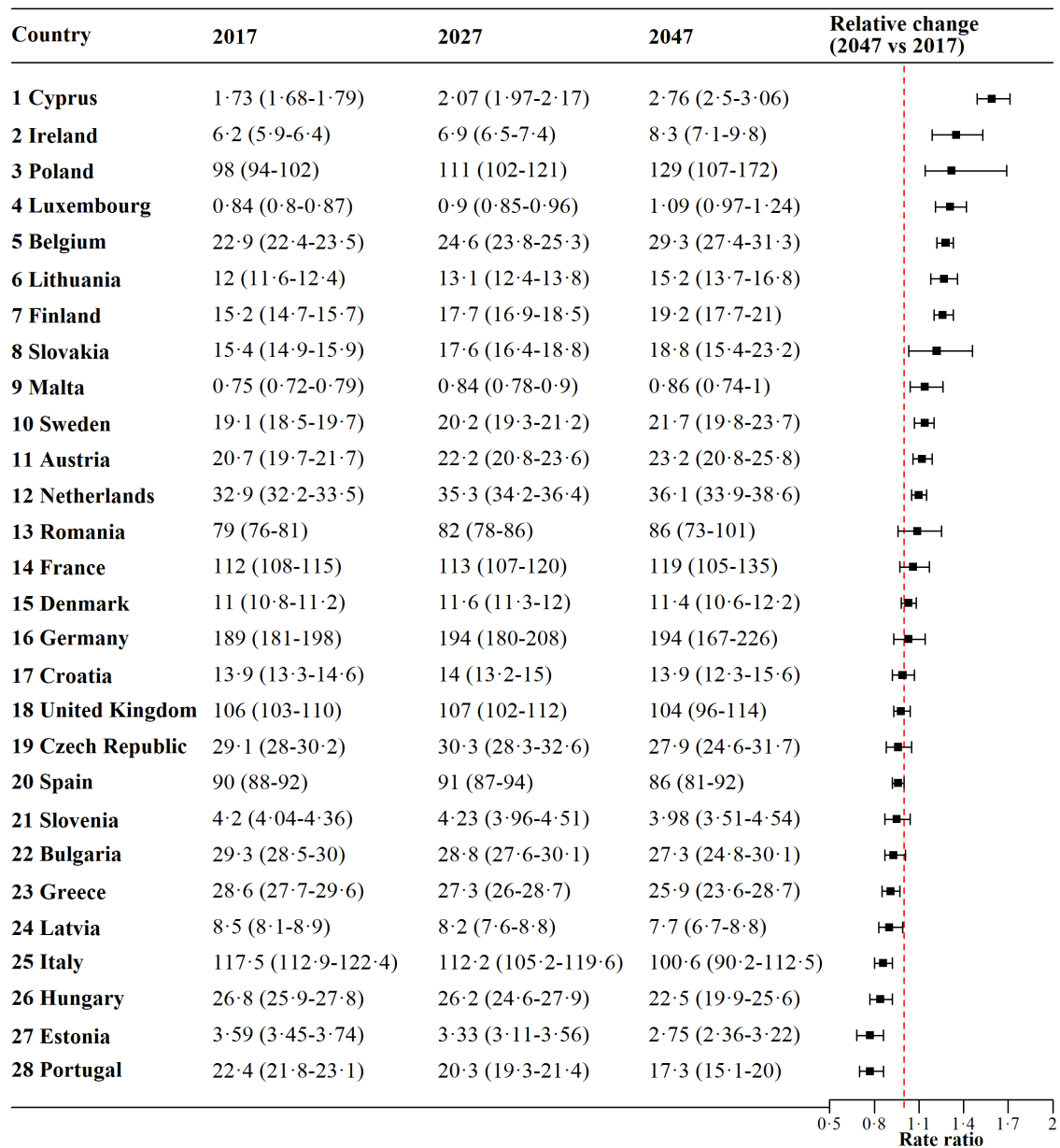


Figure III: Projected number of incident strokes (in thousands) between 2017 and 2047 in European countries.

Data are counts in thousands (95% CI) as obtained from models.

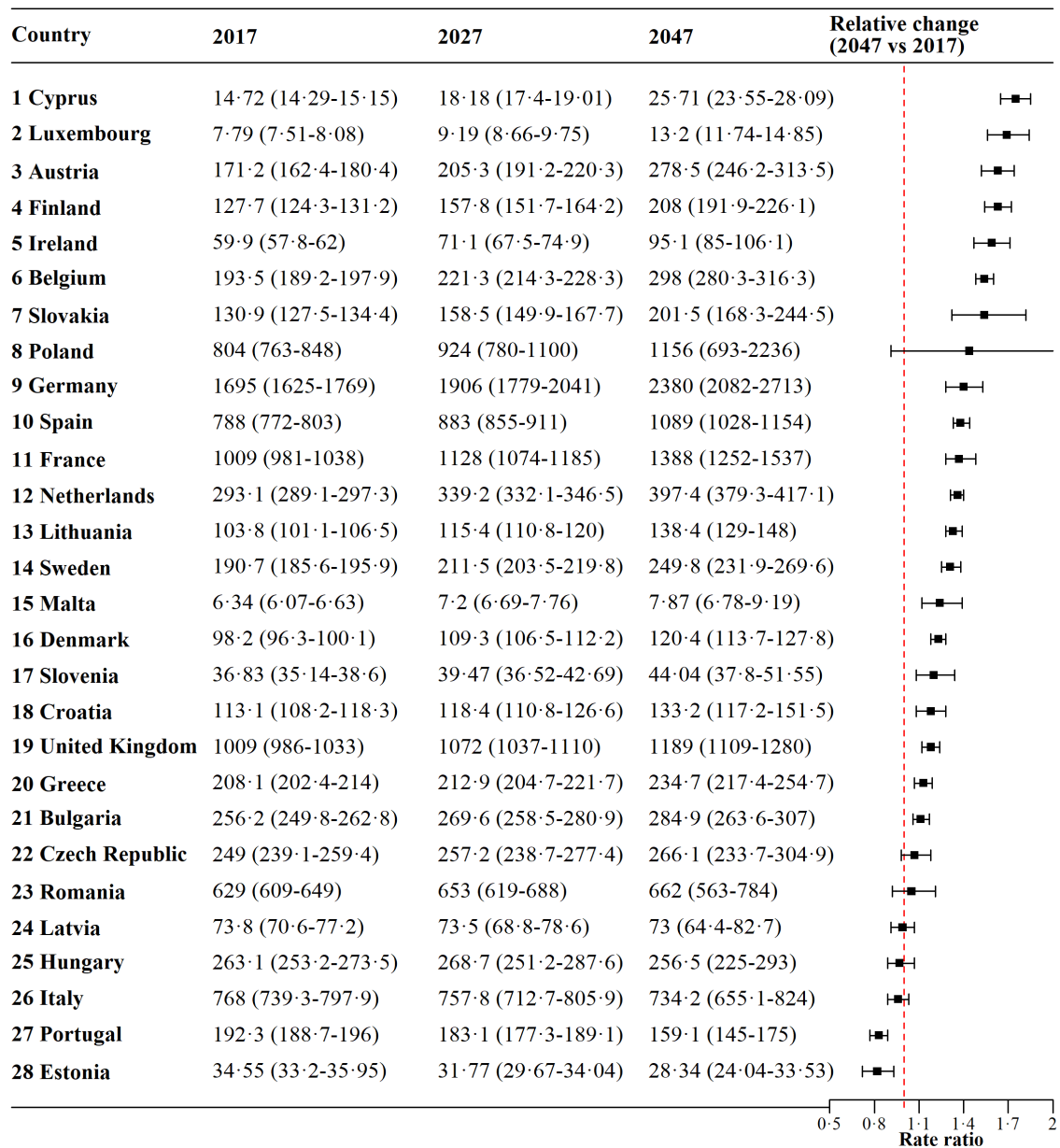


Figure IV: Projected number of prevalent strokes (in thousands) between 2017 and 2047 in European countries.

Data are counts in thousands (95% CI) as obtained from models.

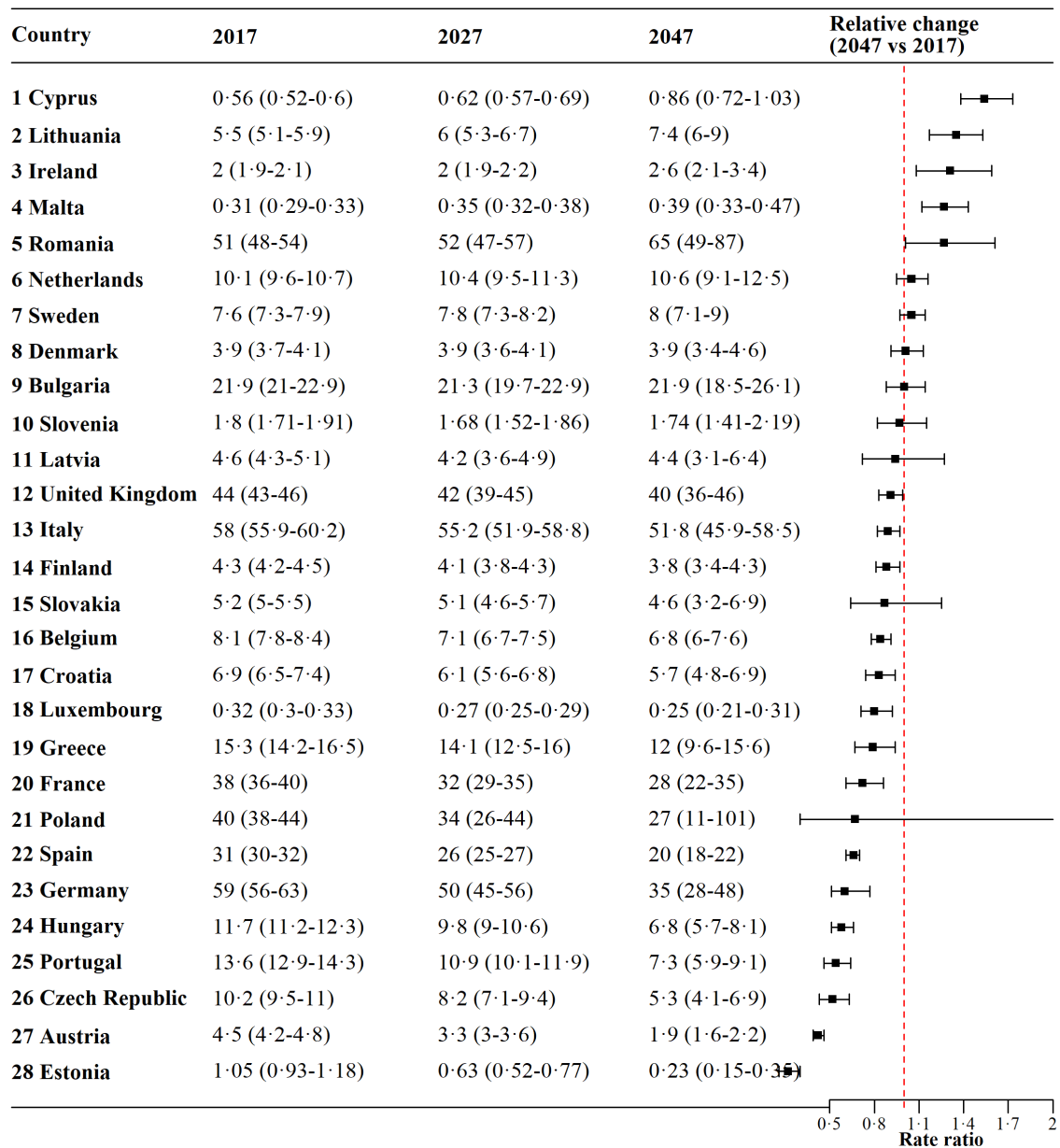


Figure V: Projected number of stroke deaths (in thousands) between 2017 and 2047 in European countries.

Data are counts in thousands (95% CI) as obtained from models.

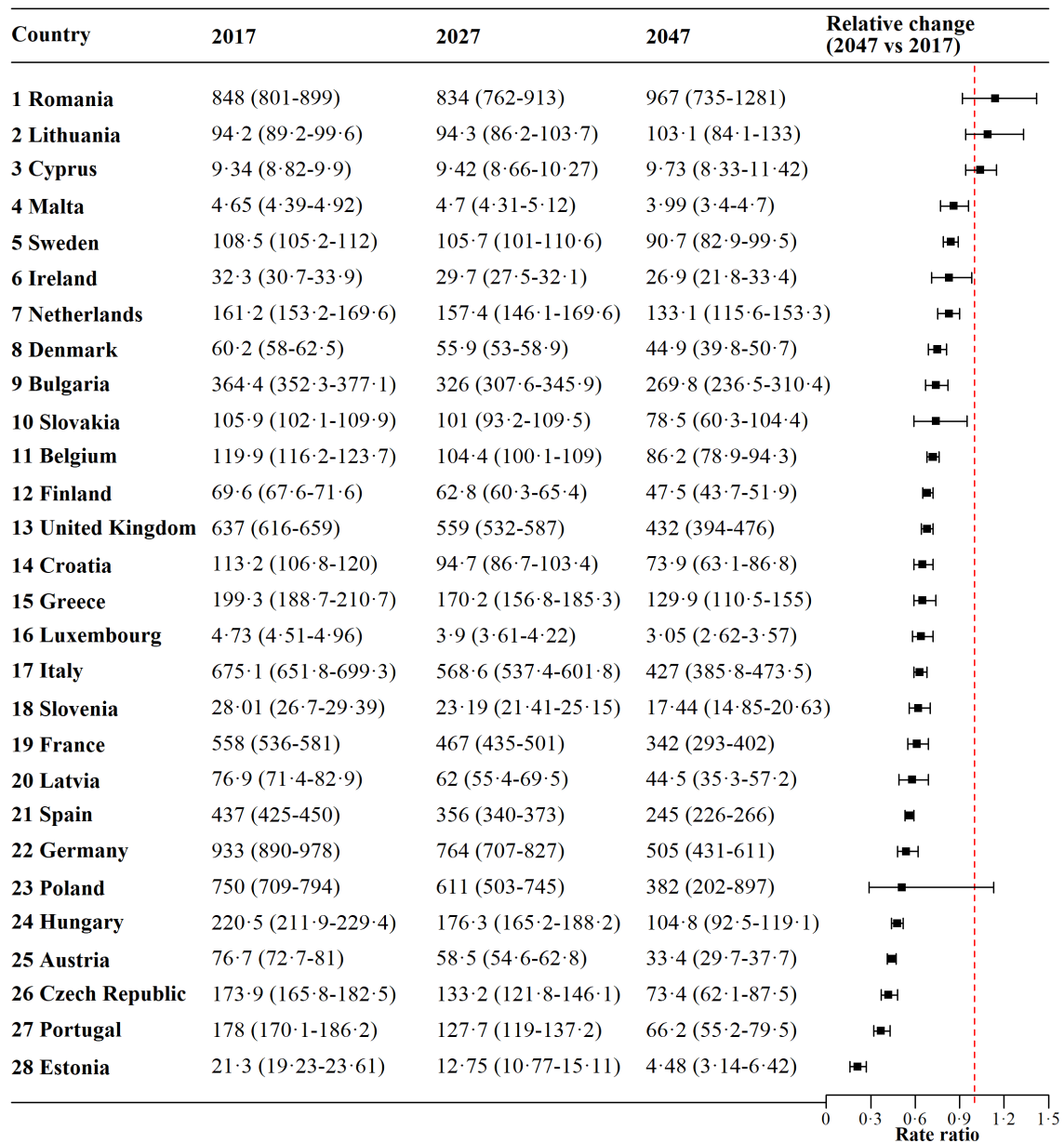


Figure VI: Projected number of stroke DALYs (in thousands) between 2017 and 2047 in EU countries.

Data are counts in thousands (95% CI) as obtained from models.

2017		2047		2047 vs 2017
Age-adjusted rate* (95% CI)	Country	Country	Age-adjusted rate* (95% CI)	% Change (95% CI)
428 (414-442)	1 Romania	1 Lithuania	467 (425-512)	14.4 (7.7 to 21.3)
421 (402-442)	2 Latvia	2 Romania	382 (326-450)	-10.6 (-21.2 to 1.9)
408 (395-422)	3 Lithuania	3 Latvia	368 (323-421)	-12.6 (-19.5 to -4.7)
406 (396-417)	4 Bulgaria	4 Bulgaria	356 (324-391)	-12.5 (-18 to -6.4)
348 (336-359)	5 Slovakia	5 Slovakia	278 (230-342)	-19.9 (-31.6 to -4.8)
326 (313-341)	6 Croatia	6 Croatia	270 (240-303)	-17.3 (-23.1 to -11)
293 (281-305)	7 Czech Republic	7 Poland	255 (214-327)	-12.1 (-23.1 to 8.5)
290 (279-301)	8 Poland	8 Finland	244 (223-266)	-7.9 (-12.6 to -2.9)
290 (279-301)	9 Hungary	9 Hungary	199 (177-224)	-31.3 (-36.4 to -25.6)
271 (260-282)	10 Estonia	10 Czech Republic	196 (175-221)	-33 (-37.9 to -27.4)
265 (256-274)	11 Finland	11 Austria	191 (172-213)	-17.5 (-22.2 to -12.4)
232 (225-239)	12 Greece	12 Estonia	181 (157-211)	-33 (-39.8 to -25.3)
232 (221-243)	13 Austria	13 Belgium	164 (155-175)	-17.9 (-20.9 to -14.7)
204 (195-213)	14 Germany	14 Germany	160 (140-184)	-21.5 (-28.2 to -13.8)
201 (195-208)	15 Cyprus	15 Cyprus	159 (145-175)	-21.1 (-25.5 to -16.2)
200 (196-205)	16 Belgium	16 Sweden	154 (141-168)	-20.2 (-24.5 to -15.5)
200 (196-204)	17 Netherlands	17 Greece	151 (139-164)	-35 (-38.1 to -31.4)
200 (192-208)	18 Slovenia	18 Netherlands	148 (139-157)	-26.1 (-28.8 to -23.3)
199 (195-203)	19 Denmark	19 Denmark	144 (135-155)	-27.5 (-30.9 to -23.9)
194 (188-200)	20 Portugal	20 Malta	132 (115-152)	-30.5 (-36.5 to -23.8)
193 (187-199)	21 Sweden	21 France	127 (115-142)	-23 (-28.6 to -16.7)
190 (182-199)	22 Malta	22 Slovenia	121 (108-137)	-39.4 (-43.9 to -34.3)
182 (177-186)	23 Spain	23 Ireland	119 (102-140)	-30.2 (-37.9 to -21.1)
174 (168-181)	24 Luxembourg	24 Spain	119 (112-127)	-34.3 (-36.9 to -31.6)
171 (165-178)	25 Ireland	25 Luxembourg	119 (105-134)	-32 (-37.2 to -26.1)
166 (161-171)	26 United Kingdom	26 United Kingdom	108 (100-116)	-35 (-37.9 to -31.8)
165 (161-170)	27 France	27 Portugal	103 (91-117)	-47.2 (-51.9 to -41.7)
162 (156-169)	28 Italy	28 Italy	92 (82-104)	-43.1 (-47.1 to -38.8)

Figure VII: Age- and sex-adjusted incidence rate of stroke (per 100,000) in 2017 and 2047.

* adjusted to the 2013 European Standard Population.

2017		2047		2047 vs 2017
Age-adjusted rate* (95% CI)	Country	Country	Age-adjusted rate* (95% CI)	% Change (95% CI)
367 (351-384)	1 Latvia	1 Lithuania	428 (401-456)	21 (16.3 to 25.7)
354 (345-363)	2 Lithuania	2 Bulgaria	385 (357-414)	11.1 (5.7 to 16.5)
346 (337-356)	3 Bulgaria	3 Latvia	353 (314-397)	-3.8 (-10.6 to 3.6)
336 (325-348)	4 Romania	4 Slovakia	301 (254-363)	3.9 (-10.1 to 21.5)
290 (282-298)	5 Slovakia	5 Romania	300 (257-353)	-10.7 (-21.1 to 1.7)
279 (268-291)	6 Hungary	6 Croatia	258 (228-292)	-2.1 (-9.4 to 5.9)
264 (252-276)	7 Croatia	7 Finland	258 (240-278)	16.1 (10.9 to 21.7)
261 (250-271)	8 Estonia	8 Poland	234 (141-430)	0.2 (-36.2 to 74.7)
246 (236-257)	9 Czech Republic	9 Hungary	227 (201-258)	-18.7 (-25.2 to -11.5)
233 (221-246)	10 Poland	10 Austria	211 (187-237)	9.8 (2.7 to 17.2)
222 (216-228)	11 Finland	11 Germany	187 (165-212)	1.8 (-6.3 to 10.4)
194 (189-199)	12 Sweden	12 Czech Republic	185 (163-211)	-24.8 (-30.8 to -17.9)
192 (182-202)	13 Austria	13 Sweden	181 (168-196)	-6.4 (-10.8 to -1.8)
184 (176-192)	14 Germany	14 Belgium	172 (163-182)	0.8 (-2.7 to 4.2)
177 (174-179)	15 Netherlands	15 Estonia	170 (146-199)	-34.7 (-41.7 to -26.6)
175 (172-179)	16 Denmark	16 Netherlands	163 (156-170)	-7.7 (-10.2 to -5)
174 (166-183)	17 Slovenia	17 Denmark	155 (146-165)	-11.6 (-14.9 to -8)
174 (169-179)	18 Greece	18 Cyprus	153 (141-166)	-6.4 (-11 to -1.5)
171 (167-174)	19 Belgium	19 France	148 (135-163)	-3.1 (-9.1 to 3.3)
170 (167-174)	20 Portugal	20 Spain	146 (138-155)	-9.8 (-13 to -6.5)
163 (158-169)	21 Cyprus	21 Luxembourg	146 (130-164)	-8.8 (-15.6 to -1.4)
162 (159-165)	22 Spain	22 Greece	145 (135-156)	-16.8 (-20.4 to -12.8)
160 (155-165)	23 Ireland	23 Ireland	138 (123-154)	-14 (-20.6 to -6.9)
160 (154-166)	24 Luxembourg	24 Slovenia	136 (119-157)	-21.7 (-28.6 to -13.8)
159 (155-162)	25 United Kingdom	25 Malta	133 (116-152)	-13.2 (-20.6 to -4.7)
153 (149-157)	26 France	26 United Kingdom	127 (120-136)	-19.8 (-22.6 to -16.6)
153 (146-160)	27 Malta	27 Portugal	103 (95-112)	-39.4 (-43.1 to -35.3)
109 (105-113)	28 Italy	28 Italy	73 (66-82)	-32.9 (-37.5 to -27.9)

Figure VIII: Age- and sex-adjusted prevalence rate of stroke (per 10,000) in 2017 and 2047.

* adjusted to the 2013 European Standard Population.

2017		2047		2047 vs 2017
Age-adjusted rate* (95% CI)	Country	Country	Age-adjusted rate* (95% CI)	% Change (95% CI)
321 (307-336)	1 Bulgaria	1 Bulgaria	267 (225-318)	-16.8 (-26.7 to -5.2)
290 (273-307)	2 Romania	2 Romania	267 (199-362)	-7.8 (-27.2 to 17.9)
233 (214-255)	3 Latvia	3 Lithuania	181 (148-219)	-2.5 (-14.7 to 10.2)
186 (173-199)	4 Lithuania	4 Latvia	166 (118-241)	-28.8 (-44.6 to -5.4)
164 (154-175)	5 Croatia	5 Croatia	88 (74-106)	-46.4 (-52.1 to -39.7)
135 (128-142)	6 Hungary	6 Slovakia	61 (43-90)	-54.6 (-66.3 to -35.9)
134 (128-141)	7 Slovakia	7 Hungary	53 (45-63)	-60.5 (-64.8 to -55.3)
124 (116-134)	8 Poland	8 Greece	53 (43-68)	-54.5 (-60.5 to -46.2)
117 (108-126)	9 Greece	9 Malta	46 (38-55)	-48.3 (-53.9 to -41.7)
113 (108-119)	10 Portugal	10 Poland	42 (18-146)	-65.9 (-84.5 to 9.2)
112 (104-121)	11 Czech Republic	11 Cyprus	42 (35-51)	-44.5 (-50.3 to -37.6)
89 (84-94)	12 Malta	12 Sweden	40 (35-45)	-46.5 (-50.5 to -41.9)
86 (82-91)	13 Slovenia	13 Slovenia	38 (31-47)	-56.2 (-62.4 to -48.5)
78 (69-88)	14 Estonia	14 Denmark	36 (31-42)	-51.1 (-55.9 to -45.7)
76 (71-81)	15 Cyprus	15 Italy	34 (30-38)	-53.7 (-57.3 to -49.7)
75 (72-78)	16 Finland	16 Finland	33 (29-37)	-56 (-59.3 to -52.2)
75 (72-78)	17 Sweden	17 Portugal	33 (26-40)	-71.3 (-75.5 to -66.1)
74 (71-78)	18 Denmark	18 Czech Republic	31 (24-40)	-72.3 (-76.7 to -66.8)
73 (70-76)	19 Italy	19 Ireland	30 (23-38)	-55.2 (-62.9 to -45.5)
69 (65-72)	20 Luxembourg	20 Netherlands	30 (25-35)	-54.2 (-58.7 to -49.2)
68 (65-71)	21 United Kingdom	21 United Kingdom	30 (26-34)	-56.4 (-59.7 to -52.4)
67 (64-70)	22 Belgium	22 Belgium	29 (26-33)	-56.6 (-59.6 to -53.2)
67 (63-70)	23 Ireland	23 Luxembourg	22 (18-26)	-68.2 (-72 to -63.6)
65 (61-69)	24 Netherlands	24 Germany	20 (16-27)	-67.6 (-72.2 to -59.4)
62 (58-66)	25 Germany	25 France	19 (16-23)	-62.3 (-67.5 to -55.7)
57 (55-58)	26 Spain	26 Spain	18 (17-20)	-67.8 (-69.8 to -65.6)
50 (48-53)	27 France	27 Estonia	11 (7-17)	-85.9 (-89.6 to -80.8)
50 (47-53)	28 Austria	28 Austria	10 (9-12)	-79.5 (-81.2 to -77.6)

Figure IX: Age- and sex-adjusted mortality rate of stroke (per 100,000) in 2017 and 2047.

* adjusted to the 2013 European Standard Population.

2017		2047		2047 vs 2017
Age-adjusted rate* (95% CI)	Country	Country	Age-adjusted rate* (95% CI)	% Change (95% CI)
502 (485-520)	1 Bulgaria	1 Romania	429 (323-575)	-7 (-25.9 to 17.8)
461 (436-488)	2 Romania	2 Bulgaria	346 (304-398)	-31 (-37.3 to -23.5)
382 (354-412)	3 Latvia	3 Lithuania	293 (243-367)	-8.7 (-20.1 to 8.4)
320 (304-339)	4 Lithuania	4 Latvia	199 (158-253)	-47.9 (-55.3 to -38.6)
264 (249-280)	5 Croatia	5 Croatia	129 (111-152)	-51 (-55.6 to -45.9)
241 (232-250)	6 Slovakia	6 Slovakia	114 (88-150)	-52.8 (-62.1 to -40.2)
238 (229-248)	7 Hungary	7 Hungary	91 (81-103)	-61.7 (-64.7 to -58.4)
218 (206-231)	8 Poland	8 Poland	74 (40-159)	-66.3 (-80.6 to -31.1)
178 (169-187)	9 Czech Republic	9 Greece	70 (61-82)	-56.2 (-60.1 to -51.5)
160 (145-178)	10 Estonia	10 Malta	56 (48-66)	-53.2 (-57.8 to -48)
160 (152-169)	11 Greece	11 Sweden	55 (50-60)	-49.4 (-52.3 to -46.4)
153 (146-160)	12 Portugal	12 Cyprus	53 (46-62)	-52.5 (-56.8 to -47.7)
133 (127-140)	13 Slovenia	13 Finland	52 (48-57)	-56.9 (-59 to -54.6)
121 (118-125)	14 Finland	14 Denmark	50 (44-56)	-54.6 (-58.2 to -50.7)
120 (114-127)	15 Malta	15 Czech Republic	49 (42-57)	-72.5 (-75.2 to -69.2)
112 (106-119)	16 Cyprus	16 Netherlands	47 (41-54)	-52.8 (-56.8 to -48.3)
110 (106-114)	17 Denmark	17 Belgium	46 (43-50)	-55.7 (-57.9 to -53.3)
109 (106-112)	18 Sweden	18 Slovenia	46 (39-54)	-65.5 (-68.9 to -61.5)
104 (101-108)	19 Belgium	19 United Kingdom	40 (36-44)	-60.1 (-62.3 to -57.6)
101 (96-106)	20 Luxembourg	20 Portugal	37 (31-44)	-75.8 (-78.8 to -72.3)
100 (95-105)	21 Germany	21 Germany	37 (32-44)	-63 (-66.7 to -58.1)
100 (95-105)	22 Netherlands	22 Italy	35 (31-39)	-62 (-64.5 to -59.3)
99 (96-103)	23 United Kingdom	23 Ireland	34 (28-43)	-63.4 (-68.8 to -56.7)
94 (89-99)	24 Ireland	24 France	34 (30-39)	-58.6 (-62.4 to -54.2)
92 (88-95)	25 Italy	25 Luxembourg	30 (26-35)	-70.1 (-73 to -66.7)
87 (85-90)	26 Spain	26 Spain	29 (27-32)	-66.3 (-67.9 to -64.5)
86 (81-91)	27 Austria	27 Estonia	26 (18-38)	-83.5 (-87.3 to -78.5)
82 (79-85)	28 France	28 Austria	23 (20-26)	-73.2 (-74.9 to -71.2)

Figure X: Age- and sex-adjusted rate of DALYs lost because of stroke (per 10,000) in 2017 and 2047.

* adjusted to the 2013 European Standard Population.