

Supplementary Table 1. Excess mortality per country in the Western World (n=47 countries)

Country	2020					2021					2022*					Total excess deaths
	Projected deaths	Reported deaths	Excess deaths	P-score	95% CI	Projected deaths	Reported deaths	Excess deaths	P-score	95% CI	Projected deaths	Reported deaths	Excess deaths	P-score	95% CI	
Albania	21,793	27,605	5,812	26.7%	25.2% to 28.2%	21,737	30,580	8,843	40.7%	39.1% to 42.3%	21,683	22,900	1,217	5.6%	4.2% to 7.0%	15,872
Australia	165,157	161,713	-3,444	-2.1%	-2.6% to -1.6%	166,651	170,781	4,130	2.5%	2.0% to 3.0%	168,170	189,737	21,567	12.8%	12.3% to 13.3%	22,253
Austria	82,025	89,196	7,171	8.7%	8.0% to 9.5%	82,351	89,674	7,323	8.9%	8.2% to 9.6%	82,684	91,143	8,459	10.2%	9.5% to 10.9%	22,952
Belgium	108,909	125,991	17,082	15.7%	15.0% to 16.3%	108,818	111,949	3,131	2.9%	2.3% to 3.5%	108,729	115,901	7,172	6.6%	6.0% to 7.2%	27,385
Bosnia and Herzegovina	36,207	42,803	6,596	18.2%	17.1% to 19.3%	35,976	48,503	12,527	34.8%	33.6% to 36.0%	35,745	39,665	3,920	11.0%	9.9% to 12.1%	23,043
Bulgaria	107,527	122,946	15,419	14.3%	13.7% to 15.0%	107,221	148,533	41,312	38.5%	37.8% to 39.2%	106,904	119,118	12,214	11.4%	10.8% to 12.1%	68,945
Canada	293,062	305,510	12,448	4.2%	3.9% to 4.6%	298,846	311,045	12,199	4.1%	3.7% to 4.4%	280,509	299,695	19,186	6.8%	6.5% to 7.2%	43,833
Croatia	51,461	56,416	4,955	9.6%	8.7% to 10.5%	51,104	62,689	11,585	22.7%	21.7% to 23.6%	50,735	57,135	6,400	12.6%	11.7% to 13.5%	22,941
Cyprus	6,185	6,481	296	4.8%	2.2% to 7.3%	6,287	7,203	916	14.6%	11.9% to 17.2%	6,391	7,375	984	15.4%	12.8% to 18.0%	2,195
Czechia	113,007	127,976	14,969	13.2%	12.6% to 13.9%	113,731	139,899	26,168	23.0%	22.4% to 23.7%	114,475	119,542	5,067	4.4%	3.8% to 5.0%	46,205
Denmark	54,963	54,219	-744	-1.4%	-2.2% to -0.5%	55,478	57,023	1,545	2.8%	1.9% to 3.6%	55,998	59,161	3,163	5.6%	4.8% to 6.5%	3,964
Estonia	15,586	15,689	103	0.7%	-0.9% to 2.2%	15,647	18,500	2,853	18.2%	16.5% to 19.9%	15,704	17,365	1,661	10.6%	8.9% to 12.2%	4,617
Faeroe Islands	426	366	-60	-14.1%	-23.0% to -5.4%	433	428	-5	-1.2%	-10.6% to 8.7%	442	486	44	10.0%	0.2% to 19.8%	-21
Finland	54,637	55,060	423	0.8%	-0.1% to 1.6%	54,999	57,421	2,422	4.4%	3.5% to 5.3%	55,368	62,772	7,404	13.4%	12.5% to 14.3%	10,249
France	604,059	649,970	45,911	7.6%	7.3% to 7.9%	609,057	641,458	32,401	5.3%	5.1% to 5.6%	614,159	654,375	40,217	6.5%	6.3% to 6.8%	118,528
Germany	951,407	975,907	24,500	2.6%	2.4% to 2.8%	958,522	1,022,412	63,891	6.7%	6.5% to 6.9%	965,770	1,057,036	91,266	9.5%	9.2% to 9.7%	179,656
Greece	124,304	130,283	5,979	4.8%	4.2% to 5.4%	125,228	143,043	17,816	14.2%	13.6% to 14.8%	126,169	140,557	14,388	11.4%	10.8% to 12.0%	38,182
Greenland	544	519	-25	-4.6%	-12.9% to 3.5%	560	531	-29	-5.1%	-13.2% to 2.8%	574	526	-48	-8.4%	-16.2% to -0.5%	-102
Hungary	129,771	139,751	9,980	7.7%	7.1% to 8.3%	129,766	155,181	25,415	19.6%	19.0% to 20.2%	129,761	136,411	6,650	5.1%	4.6% to 5.7%	42,044
Iceland	2,284	2,298	14	0.6%	-3.5% to 4.7%	2,294	2,324	30	1.3%	-2.8% to 5.4%	2,310	2,681	371	16.1%	11.7% to 20.5%	415
Ireland	31,370	32,673	1,303	4.2%	3.0% to 5.3%	31,630	34,249	2,619	8.3%	7.1% to 9.4%	31,890	34,875	2,985	9.4%	8.2% to 10.5%	6,907
Italy	640,908	740,524	99,616	15.5%	15.3% to 15.8%	640,077	707,567	67,490	10.5%	10.3% to 10.8%	639,229	710,781	71,552	11.2%	10.9% to 11.5%	238,658
Kosovo	9,657	12,987	3,330	34.5%	32.2% to 36.8%	9,952	13,019	3,067	30.8%	28.6% to 33.1%	10,249	9,137	-1,112	-10.8%	-12.7% to -9.0%	5,285
Latvia	28,010	28,573	563	2.0%	0.8% to 3.2%	27,887	34,511	6,624	23.8%	22.4% to 25.1%	27,768	30,195	2,428	8.7%	7.5% to 10.0%	9,615
Liechtenstein	269	319	50	18.6%	5.8% to 31.6%	271	271	0	-0.1%	-12.2% to 11.8%	205	211	6	3.1%	-10.8% to 18.2%	56
Lithuania	37,533	42,979	5,446	14.5%	13.4% to 15.6%	36,717	47,823	11,106	30.2%	29.1% to 31.4%	35,890	42,322	6,432	17.9%	16.8% to 19.0%	22,985
Luxembourg	4,451	4,569	118	2.7%	-0.3% to 5.6%	4,548	4,466	-82	-1.8%	-4.7% to 1.1%	4,652	4,445	-207	-4.4%	-7.2% to -1.6%	-170
Malta	3,791	4,055	264	7.0%	3.7% to 10.3%	3,877	4,130	253	6.5%	3.3% to 9.8%	3,961	4,197	236	6.0%	2.8% to 9.2%	754
Moldova	35,574	40,716	5,142	14.5%	13.3% to 15.6%	34,826	45,386	10,560	30.3%	29.1% to 31.5%	34,077	36,554	2,477	7.3%	6.2% to 8.4%	18,179
Monaco	495	521	26	5.2%	-3.8% to 13.9%	485	593	108	22.4%	12.6% to 32.3%	347	384	37	10.8%	-0.3% to 22.1%	171
Montenegro	6,628	7,184	556	8.4%	5.9% to 10.9%	6,684	9,111	2,427	36.3%	33.5% to 39.1%	4,589	4,938	349	7.6%	4.6% to 10.6%	3,332
Netherlands	154,083	167,167	13,084	8.5%	8.0% to 9.0%	155,450	170,484	15,034	9.7%	9.2% to 10.2%	156,838	168,916	12,078	7.7%	7.2% to 8.2%	40,196
New Zealand	34,726	32,522	-2,204	-6.3%	-7.4% to -5.3%	35,394	34,850	-544	-1.5%	-2.6% to -0.5%	36,075	38,378	2,303	6.4%	5.3% to 7.4%	-445
North Macedonia	20,057	25,723	5,666	28.2%	26.7% to 29.8%	19,985	28,516	8,531	42.7%	41.0% to 44.3%	19,912	22,375	2,463	12.4%	10.9% to 13.8%	16,659
Norway	40,529	40,363	-166	-0.4%	-1.4% to 0.6%	40,514	41,831	1,317	3.3%	2.3% to 4.2%	40,498	45,353	4,855	12.0%	11.0% to 13.0%	6,006
Poland	415,951	473,829	57,878	13.9%	13.6% to 14.2%	421,005	516,934	95,929	22.8%	22.5% to 23.1%	426,159	449,508	23,350	5.5%	5.2% to 5.8%	177,156
Portugal	113,045	122,594	9,549	8.4%	7.8% to 9.1%	113,923	125,182	11,259	9.9%	9.3% to 10.5%	114,817	124,414	9,597	8.4%	7.8% to 9.0%	30,405
Romania	260,380	294,380	34,000	13.1%	12.6% to 13.5%	260,370	335,453	75,083	28.8%	28.4% to 29.3%	260,365	270,661	10,296	4.0%	3.6% to 4.3%	119,379
San Marino	259	343	84	32.2%	18.1% to 46.0%	262	312	50	19.2%	6.1% to 32.6%	264	263	-1	-0.5%	-12.5% to 14.1%	133
Serbia	101,183	116,850	15,667	15.5%	14.8% to 16.1%	100,822	135,901	35,079	34.8%	34.1% to 35.5%	100,460	110,839	10,379	10.3%	9.7% to 11.0%	61,125
Slovakia	53,605	58,218	4,613	8.6%	7.7% to 9.5%	53,692	73,518	19,826	36.9%	35.9% to 37.9%	53,775	59,311	5,536	10.3%	9.4% to 11.2%	29,975
Slovenia	20,867	23,745	2,878	13.8%	12.3% to 15.2%	21,101	23,255	2,154	10.2%	8.8% to 11.6%	21,340	22,325	985	4.6%	3.2% to 6.0%	6,017
Spain	419,662	489,332	69,670	16.6%	16.3% to 16.9%	420,529	447,451	26,922	6.4%	6.1% to 6.7%	421,418	462,713	41,295	9.8%	9.5% to 10.1%	137,888
Sweden	89,799	97,220	7,421	8.3%	7.6% to 8.9%	89,529	91,899	2,370	2.6%	2.0% to 3.3%	89,258	94,129	4,870	5.5%	4.8% to 6.1%	14,662
Switzerland	67,347	75,235	7,888	11.7%	10.9% to 12.5%	67,571	70,976	3,405	5.0%	4.3% to 5.8%	67,805	74,015	6,210	9.2%	8.4% to 9.9%	17,504
United Kingdom	607,496	685,124	77,628	12.8%	12.5% to 13.0%	608,618	667,438	58,820	9.7%	9.4% to 9.9%	609,757	655,843	46,086	7.6%	7.3% to 7.8%	182,533
United States	2,907,671	3,353,341	445,670	15.3%	15.2% to 15.5%	2,946,563	3,469,627	523,064	17.8%	17.6% to 17.9%	2,986,224	3,277,830	291,606	9.8%	9.6% to 9.9%	1,260,340
<b>Total (n = 47)</b>	<b>9,028,663</b>	<b>10,061,785</b>	<b>1,033,122</b>	<b>11.4%</b>	<b>11.4% to 11.5%</b>	<b>9,096,988</b>	<b>10,353,930</b>	<b>1,256,942</b>	<b>13.8%</b>	<b>13.7% to 13.9%</b>	<b>9,140,101</b>	<b>9,948,493</b>	<b>808,392</b>	<b>8.8%</b>	<b>8.8% to 8.9%</b>	<b>3,098,456</b>

\*Preliminary and incomplete all-cause mortality reports are available for 2022.