Spatial patterns of stroke burden attributable to ambient PM$_{2.5}$ in 2019 by nation

At the national level, in 2019, the ASMR and ASDR of stroke attributable to ambient PM$_{2.5}$ varies considerably across the world, with the highest ASMR observed in Macedonia (47.0 per 100,000 population), followed by Mongolia (44.5 per 100,000 population) and Uzbekistan (39.4 per 100,000 population) (Table S1, Figure 2A-B). There were six countries (i.e., Macedonia, Mongolia, Uzbekistan, Iraq, Tajikistan, and Saudi Arabia) had an ASMR of stroke attributable to ambient PM$_{2.5}$ higher than 30 per 100,000 (Table S1, Figure 2A). Approximately 59% countries and territories had an ASMR of stroke less than 10 per 100,000, with the lowest ASMR in Iceland, followed by Sweden, Australia, New Zealand, Finland, and Norway. Similarly, the highest ASDR was observed in Mongolia (1124.0 per 100,000 population), followed by Iraq (915.6 per 100,000 population) and Uzbekistan (872.4 per 100,000 population). There were seven countries (i.e., Mongolia, Iraq, Uzbekistan, Macedonia, Turkmenistan, Saudi Arabia, Egypt) had an ASDR of stroke attributable to ambient PM$_{2.5}$ higher than 700 per 100,000 (Table S1). Approximately 21% countries or territories, had an ASDR of stroke less than 100 per 100,000, with the lowest ASDR in Iceland, followed by Sweden, Finland, New Zealand, Australia, and Norway.

Temporal trends of stroke burden attributable to ambient PM$_{2.5}$ from 1990 to 2019 by nation

Figure 2C-2D and Table S1 show the EAPCs in ASMR and ASDR of stroke burden attributable to ambient PM$_{2.5}$ at the national level. From 1990 to 2019, ASMR and ASDR of stroke burden attributable to ambient PM$_{2.5}$ showed an increasing trend in 87 and 84 out of 204 countries or regions, with the highest increase found in Equatorial Guinea (EAPC: 5.91, 95%CI: 5.59-6.23) for ASMR and in Timor-Leste for ASDR(EAPC: 5.85, 95%CI: 5.23-6.47), respectively. (Table S1 and Figure 2C-2D). Conversely, ASMR and ASDR of stroke burden attributable to ambient PM$_{2.5}$ showed a decrease trend in 103 and 104 out of 204 countries or regions, with the largest decrease found both in Estonia (EAPC: -9.08, 95%CI: -9.85- to -8.31 for ASMR; -8.5, 95%CI: -9.2 to -7.79 for ASDR, respectively) (Table S1 and Figure 2C-2D). For different subtypes, Timor-Leste had the most significant increase in ASMRs and ASDR of stroke burden due to ICH, while Equatorial Guinea had the most pronounced increase in ASMR and ASDR of stroke burden due to IS and SAH (eFigures 8-10). Conversely, Estonia had the most significant decrease both in ASMR and ASDR of stroke burden due to ICH and IS while Finland had the most pronounced decrease in both index of stroke burden due to SAH (eFigures 8-10).