

Appendix: The global burden of non-conflict related firearm mortality

Table 1 Reported firearm deaths by level of economic development and region

Economic level	% of total global 2000 population	% of population in		CFDR per 100000 population, where reported
		countries with reported firearm death data	Number of reported firearm deaths	
High income	15.3	99.3	41100	4.5
• East Asia & Pacific	3.4	99.3	600	0.3
• Europe & Central Asia	6.5	99.8	8400	2.2
• Latin America & Caribbean	0.0	0.0	*	*
• Middle East & North Africa	0.2	67.6	200	2.4
• North America	5.2	100.0	31900	10.2
• Southeast Asia	–	–	–	–
• Sub-Saharan Africa	–	–	–	–

Economic level	% of total global 2000 population	% of population in countries with reported firearm death data	Number of reported firearm deaths	CFDR per 100000 population, where reported
Upper middle income	8.2	83.0	62400	15.2
• East Asia & Pacific	0.4	100.0	100	0.3
• Europe & Central Asia	1.3	100.0	1200	1.6
• Latin America & Caribbean	6.0	86.2	61200	19.6
• Middle East & North Africa	0.5	1.2	†	1.8
• North America	–	–	–	–
• Southeast Asia	–	–	–	–
• Sub-Saharan Africa	0.1	29.5	†	0.2
Lower middle income	35.9	13.7	40700	13.6
• East Asia & Pacific	23.4	9.8	5400	3.9
• Europe & Central Asia	4.8	12.1	1000	2.8
• Latin America & Caribbean	2.4	47.9	22600	32.2

Economic level	% of total global 2000 population	% of population in countries with reported firearm death data	Number of reported firearm deaths	CFDR per 100000 population, where reported
• Middle East & North Africa	4.1	3.8	†	0.0
• North America	–	–	–	–
• Southeast Asia	0.3	0.0	*	*
• Sub-Saharan Africa	0.8	93.3	11700	27.0
Lower income	40.6	47.0	4000	0.4
• East Asia & Pacific	6.4	20.2	100	0.2
• Europe & Central Asia	1.8	4.0	100	1.6
• Latin America & Caribbean	0.2	0.0	*	*
• Middle East & North Africa	0.3	0.0	*	*
• North America	–	–	–	–
• Southeast Asia	22.4	75.6	3300	0.3
• Sub-Saharan Africa	9.9	10.9	500	0.8

Economic level	% of total global 2000 population	% of population in countries with reported firearm death data	Number of reported firearm deaths	CFDR per 100000 population, where reported
Other, not classed‡	0.0	0.0	*	*
Total	100	46.0	148200	5.3

– No countries fall into this category of region and economic development.

*No firearm data reported for countries in this category.

†Fewer than 10 reported deaths in this category.

‡Reunion, Guadeloupe, Martinique, French Guiana.

Table 2 Top 15 most populous countries not reporting firearm deaths

Country	Population in thousands	Region/economic level	Qualitative assessment of firearm homicide (H) and suicide (S) levels	Intentional death rate/100000 reported or estimates (est), by region and level*	Estimated firearm deaths, based on qualitative information extremely low=0.1, low (Q1)=0.68, medium (Q2)=2.05, high (Q3)=4.16
China	1275133	E Asia & Pacific/lower middle	H: Likely extremely low;† S: Likely extremely low‡	15.5	1200
Indonesia	212092	E Asia & Pacific/low	H: Likely low—regional armed conflicts§	22.8 ^{est}	1500
Russian	145491	Europe & Central Asia/lower	H: Likely medium, increasing homicides	53.7	3000

Federation		middle	and % involving firearms;¶ S: Likely low, total suicides high and increasing		
Pakistan	141256	South Asia/low	H: Likely high in Karachi**	21.8 ^{est}	5900
Bangladesh	137439	South Asia/low	H: Likely high in selected areas††	22.8 ^{est}	5800
Nigeria	113862	Sub-Saharan Africa/low	H: Likely medium, armed conflicts‡‡	60.9 ^{est}	2300
Iran	70330	Middle East & N Africa/lower middle	H: Likely low in Tehran;§§ S: Likely low¶¶	21.8 ^{est}	500
Egypt	67884	Middle East & N Africa/lower middle		21.8 ^{est}	500–2900
Turkey	66668	Europe & Central Asia/lower middle	H & S: Likely medium, and growing¶¶,†††	49.6 ^{est}	1400
Ethiopia	62908	Sub-Saharan Africa/low		60.9 ^{est}	400–2600
Democratic Republic of Congo	50948	Sub-Saharan Africa/low	Significant armed conflict, H: Likely high‡‡‡	60.9 ^{est}	2100
Ukraine	49568	Europe& Central Asia/low	H: Likely low§§§	36.9	300
Myanmar	47749	E Asia & Pacific/lower middle		22.8 ^{est}	300–2000
Sudan	31095	Sub-Saharan Africa/low	Significant armed conflict, H: likely high¶¶¶	21.8 ^{est}	1300

Kenya	30669	Sub-Saharan Africa/low	H: Likely high¶¶¶¶	60.9 ^{est}	1300
Total	2503093				27800–34100

The literature review for these estimates used electronic search engines, followed by hand searches of bibliographic references or web page content. Sources included: ISI;¹ SafetyLit;² PubMed;³ WHO and UN regional reports/databases; Small Arms Survey;⁴ Franklin;⁵ and SAFER Network.⁶

*Intentional death rates reported in Table A7 of the statistical annex of the WHO WRVH and estimated rates based on region and economic estimates in appendix table 2.⁷

†Zhao reports of a very low percentage of reported traumatic brain injury from firearm injury through a community survey.⁸ These low levels, coupled with very low reported homicides rates for selected urban and rural areas suggest that firearm homicide levels are likely to be extremely low.⁷

‡He et al. compiles regional studies of suicide methods in China find range of 0–4% of suicides used firearms, with the majority of regional studies reporting 0%.⁹ The highest proportions of firearm suicides are reported for Inner Mongolia.

§United Nations crime reports indicate low overall homicide rates (1.05/100000). Medical providers in East Timor report few gunshot wounds in the period following arrival of peacekeeping forces.¹⁰

¶Chervyakov found that 4.7% of reported homicide deaths were by firearm for sample of vital statistics coded to ICD10 and a transition to high homicide rates for the country as a whole.¹¹ An unpublished analysis by WHO, reported in Krug, of youth homicide identified rapid increases following collapse of communism, accompanied by a rise in the proportion involving firearms.⁷

**Agba reports that key informant interviews estimate 3000 firearm deaths in Karachi per year.¹² Ambulance data estimate a firearm homicide rate of 9.8/100000 for Karachi.¹³

††Community participatory research conducted with residents of a slum area of Dhaka and a border village suggest extremely high annual firearm mortality rates for these small communities.¹⁴

‡‡Trauma care research reports that the number of gunshot cases seen in their hospitals has shifted from few to common during the 1990s. These cases were primarily interpersonal (62% of cases shot by armed robbers, 27% during civil strife).¹⁵ The numbers of firearm injuries treated is not high, but long prehospital delays suggest that many deaths are not likely to be seen by hospitals.^{16–18} A pathology review finds that 28% of homicides in the city of Jos were by firearm.¹⁹ Increasing involvement of firearms in homicides and regional estimates of overall homicides suggests a medium level of firearm homicides.

§§Analysis of a Tehran trauma center registry reveals few gunshot injuries and reports low general exposure to firearms in the country.²⁰

¶¶¶Older data on Tehran autopsies from the period 1964–74 reported 25.5% of all suicide deaths by shooting. A study of the city of Shiraz indicated a total suicide rate of 5.6/100000.²¹

***Autopsy data on firearm mortality extrapolate to a firearm death rate of 5/100000, with a rate of 3/100000 for firearm homicides and 1.5/100000 for firearm suicides for Diyarbakir.²² Updates to the UN small firearm database for Turkey report the same rate.

†††Azmak *et al* found 23.5% of firearm autopsies in Edirne (n=85) between 1984–97 were firearm suicides, with an overall incidence of 1.58/100000.²³

‡‡‡Field hospitals report firearm cases, but firearm homicide rates cannot be estimated due to significant armed conflict in region.²⁴

§§§Police reported firearm homicide rate of 0.4/100000. Crime data may be underreported.²⁵

¶¶¶Rates cannot be estimated due to significant armed conflict; however, field hospital data and key informant interviews of bordering regions suggest high rates of firearm homicides.²⁴ Recent survey and health center data suggest high firearm homicide rates.²⁶

****Key informant interviews identify significant firearm homicide rates (15/100000) that began increasing with, but are no longer specifically related to, armed conflict.²⁴

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