Global mortality from firearms, 1990-2016

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Key Points

Question: What is the burden of firearms mortality at the global, regional, and national level between 1990 and 2016 by sex and age?

Findings: Using a combination of de-identified, aggregated data from vital registration, verbal autopsy, census and survey data, and police records in models for 195 countries and territories, this study estimated 251,451 people died globally from firearm injuries in 2016, and there was an annualised decrease of 0.9% in age-standardised rates from 1990. The burden of firearms deaths was unevenly distributed between countries, ages, and by sex. Greater estimated levels of firearm access were associated with higher rates of firearm injury deaths.

Meaning: This study provides an estimate of the global burden of firearms deaths in 2016, change in this burden from 1990, and variation in levels and rates among countries.

Abstract

Importance: There is wide variation in firearm mortality rates worldwide, but comparative assessments are rare.

Objective: To estimate mortality due to firearm injury deaths from 1990 to 2016 in 195 countries and territories.

Design, Setting, Participants: This study used de-identified, aggregated data including 13,812 location-years of vital registration data to generate estimates of levels and rates of death by age-sex-year-location. The proportion of firearm suicides was combined with an estimate of per capita gun ownership in a revised proxy measure that was then used to evaluate the relationship between firearm access and firearm injury deaths.

Main outcomes and measures: Cause-specific deaths by age, sex, location, and year.

Results: Worldwide, 251,451 people died from firearm injuries in 2016, with six countries – Brazil, United States, Mexico, Columbia, Venezuela, and Guatemala – accounting for 50.5% of those deaths. Globally, the majority (64.0%) of firearm injury deaths in 2016 were homicides – a total of 160,975 deaths; there were 67,522 firearm suicide deaths and 22,954 unintentional firearm deaths. Over the period 1990 to 2016, age-standardized firearm homicide rates decreased globally (annualized rate of decrease 5.3%) but at a national level, increased or did not change significantly in 117 of 195 locations; firearm suicide rates also decreased globally at an annualized rate of 1.6%, but at a national level, no change or significant increases were estimated for 124 of 195 locations. Aggregate firearm injury deaths were higher for men (218,915 deaths) than for women (32,536 deaths) in 2016. Firearm access was associated with higher rates of firearm suicides and homicides, particularly after accounting for relative Socio-demographic Index (SDI) level – a combined measure of income per capita, fertility, and educational attainment – and for drug production and trafficking locations (based on a US State department assessment) in the case of firearm homicide.

Conclusions and relevance: This study estimated 251,451 firearm injury deaths globally in 2016, but with large variation among countries and across demographic subgroups. Regulation of firearm ownership was linked to lower firearms-related mortality in some locations, presenting a potential model for reducing mortality.

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Introduction

The Geneva Declaration on Armed Violence and Development (2006) estimated that 90% of violent deaths occurred outside of conflict situations.[1] Worldwide, firearms are frequently the lethal means in

cases of homicide, suicide, and unintentional injuries, representing an important public health problem with social and economic costs that extend beyond the immediate loss of life. Rates of firearm-related death vary between locations and the causal elements in these global disparities are related in a complex web of causation that differs by region and country – including the illegal drug trade,[2] substance use (including alcohol),[3] inadequate supports for mental health,[4] the social and intergenerational transmission of firearm violence,[5] and socioeconomic inequities[6] – that complicate efforts to generalize across settings. Access to firearms and level of firearm ownership have also been associated with firearm deaths at population, household, and individual levels; these are in turn influenced by both the strength of laws and regulations controlling firearms and their enforcement.[7]

Comparative studies of the magnitude of firearm violence are rare, but represent a critical opportunity to examine national, regional, and local patterns that may suggest public health strategies. Although national and even regional assessments of firearm deaths are available, no other assessment that evaluates firearm deaths among the 195 countries and territories included in this study has been identified. The primary objective of this study was to undertake a comprehensive assessment of patterns of firearm-related mortality by cause, age, sex, and location using the consistent methods and updated database of the Global Burden of Diseases, Injuries, and Risk Factors Study 2016 (GBD 2016), and to relate these patterns to what is known about national levels of availability of firearms.

Methods

The 2016 update of the GBD study incorporated additional data sources and refinements to modeling strategies that represent a substantive improvement over previous iterations.[8] International classification of Disease (ICD) codes providing definitions for causes of death included in this analysis are described in eTable 1. From the complete cause list developed for GBD 2016 this study presents detailed estimation for levels and rates of death for unintentional firearm deaths, self-harm (suicide) by firearm, and

interpersonal violence (homicide) by firearm, and sum these to estimate aggregate deaths from these causes. Deaths from war or state conflict – used here to provide comparison and context with non-state-conflict deaths – or deaths attributed to executions and police conflict include non-firearm causes and were estimated separately. Additional detailed results can be explored using online data visualization tools (www.healthdata.org/results/data-visualizations) and downloaded using a results query tool (http://ghdx.healthdata.org/gbd-results-tool).

The GBD study used de-identified aggregated data and was reviewed and approved by the University of Washington IRB, Application Number 46665. The cause of death database compiled for GBD 2016 contains 13,812 location-years of vital registration (VR) data on firearm related homicide, suicide, and unintentional injury and also include data from verbal autopsy (VA), census and survey data, and police records for some injuries. Specific data sources used in the estimation of firearm-related deaths are identifiable through the GBD data tool: http://ghdx.healthdata.org/gbd-2016/data-input-sources. The GBD study methodology incorporates data of varying completeness and quality using consistent methods for data standardization and adjustments for incomplete data; these methods are described in Appendix Section 2.2 and eTable 2 with additional details published elsewhere.[8] In brief, sources characterized as less than 50% complete in any given location were excluded to minimize the potential for selection bias in incomplete VR data; sources were characterized as non-representative where completeness was estimated to be between 50 and 70%. These completeness estimates were used to inform variance in statistical models, with lower completeness resulting in higher variance. Where data were incomplete, estimates were modeled and borrow strength from relationships in other year, age, location, or covariate data. Estimates from locations with high quality data were derived directly from those data. In this way, the GBD Study generates the most reliable series of estimates possible given the data available.

Separate Cause of Death ensemble models – an estimation approach where a large number of model specifications are systematically tested and models performing best on out-of-sample predictive validity

tests are incorporated into a weighted ensemble model – were developed for each of the three causes of death by firearm included in GBD 2016; covariates for these models (eTable 3) and additional details of model testing and construction are provided in Appendix section 2.3. Uncertainty bounds were estimated using 1,000 draws from the posterior distribution of cause-specific mortality for each age-sex-year-location and are represented as 95% uncertainty intervals (UIs) – these values are considered statistically significant if the UI does not include zero.. In general, in locations with high quality data – generally VR data that are extensive and complete – uncertainty is largely driven by sample sizes, whereas in locations with lower data quality, the sparsity of data, strength of the covariates used in modeling, or the extent of "garbage coded" death certificates contribute to greater estimated uncertainty. To maintain readability in the main text, mean values are reported, uncertainty intervals for reported results are available in comprehensive tables in the online appendix materials and through a web-based results tools (http://ghdx.healthdata.org/gbd-results-tool). Analyses were completed using Python version 2.7.3 and R version 3.2.2. The development and documentation of the GBD 2016 study follows the Guidelines for Accurate and Transparent Health Estimates Reporting (GATHER).[9]

Access to firearms is a necessary precondition for firearm injury to occur, however the strength of the relationship between access to firearms and variation in levels of firearm violence has not been evaluated at the scale of this study. Assessing the relationship between firearm deaths and availability of firearms is challenging, in part because data on the total number and distribution of both legal and illegal firearms within civilian populations are limited. Two measures have been extensively used: estimates from the Small Arms Survey[10] and a proxy measure based on the proportion of suicide where a firearm was the lethal means (FS/S) (Appendix section 3).[11] Each measure has distinct advantages and disadvantages: although estimates from the Small Arms Survey – last updated in 2007 – provides the most comprehensive set of firearm registry data (79 countries; eTable 4), estimates for other locations rely on interpolation from global regressions or independent expert estimation (Appendix section 3.2);[10] while

the proportion of suicides due to firearms includes the most recent data available for each location, it also circularly contains total suicide deaths as a variable, does not account for cultural variability in factors connecting firearm access to use as a means of suicide, and has been validated mostly for Western societies. To capture the advantages of each measure while addressing some of their separate limitations, a new proxy measure was created by transforming each on a scale from 0 to 100 and then averaging both measures (Appendix Section 3.4). The maximum value of this combined metric was an averaged score of 100 for the United States, while the minimum value was anchored by Japan with a score of 0.3 (eTable 5). This combined measure was used as a proxy for per capita access to firearms to evaluate the relationship between availability of firearms and firearm injury deaths (eTable 6).

Additionally, the GBD 2016 study developed and refined the Socio-demographic Index (SDI) as a means for comparing health progress between locations. The SDI score is a composite of the geometric mean of three components: lag-dependent income per capita, total fertility rate for the population, and the average educational attainment in the population over 15 years of age – which is subsequently rescaled between 0 and 1 (Appendix section 3.5.1). An SDI value was calculated for each location-year and assigned to a quintile category; this study uses SDI values and quintile assignments for the year 2016 to evaluate the contribution of the combined role of income, average fertility, and education to differences in firearm violence between locations.

Results

Levels and trends in aggregate firearm injury deaths

In 2016 there were an estimated 251,451 firearm injury deaths worldwide; a global age-standardized rate of 3.4 deaths per 100,000 (Table 1). Globally, the total number of firearm deaths were greater than those from conflict in almost all years between 1990 and 2016 (eFigure 1) by as much as 6:1; the exception was 1994 when deaths from the genocide in Rwanda contributed to a global conflict death total that

exceeded those from firearms. Among the leading countries in terms of firearm injury deaths in 2016, 50.5% of deaths occurred in countries that combined held less than 10% of the global population[12] in that year: Brazil, the United States, Mexico, Columbia, Venezuela, and Guatemala (Table 1). A plurality of these deaths (32.0%) occurred in Brazil and the United States. Nationally, age-standardized rates of firearm injury deaths in 2016 ranged from a low of 0.16 deaths per 100,000 in Singapore to 39.4 deaths per 100,000 in El Salvador.

Globally, rates of firearm injury deaths decreased since 1990 at an annualized rate of change (ARC) of 0.9% (Figure 1; a key to three-letter country codes used in this figure is available in eTable 7). Several locations with high age-standardised rates of firearm injury deaths in 1990 were also among the locations with large annualized rates of decrease between 1990 and 2016. These included Greenland – which had the highest age-standardized rate of firearm injury deaths in 1990 and an estimated annualized decrease in those rates of 3.2% between 1990 and 2016, and Columbia (ranked 2nd globally in age-standardized rate of firearm injury deaths in 1990), where age-standardized rates decreased by 3.0% annually over the same time period. Firearm death rates decreased in most countries, however rates were either constant or increased significantly over this same time period in 18 of 195 countries, of which 14 were in the GBD super-region of Latin-America and Caribbean. Although annualized rates of change provide a simple summary of trends that are easily compared between locations, this metric may mask important non-linearity in trends in some locations; age-standardized mortality rates for aggregate firearm injury deaths and for each firearm injury subcause, for the years 1990, 1995, 2000, 2005, and for each year 2010 to 2016, and by location are presented in eTables 8-11.

Patterns by age and sex

Globally, aggregate firearm injury deaths were higher for men than for women in each 5-year age bracket (Figure 2A), with the most firearm injury deaths globally for both men (an estimated 34,656 deaths in

2016) and women (3,584 deaths) aged 20 to 24 years, representing age-specific mortality rates from firearms for this age group of 11.2 deaths and 1.2 deaths per 100,000 respectively. The relative proportions of firearm injury deaths by subcause varied with both age and sex (Figure 2B). Globally, among children aged 0 to 14 years there were an estimated 3,024 deaths from a firearm-related injury in 2016, a rate of 0.2 deaths per 100,000, and there were 2.4 times more firearm deaths for boys than girls in this age group (eTable 12 and 13). As a component of deaths for children aged 0 to 14 years, firearm injury deaths constituted more than 1% of child deaths from all causes in 12 countries, the highest such fractions were in Greenland (2.6%) and El Salvador (3.4%) (eFigure 2).

National variation in firearm injury deaths by subcause

In 2016, unintentional firearm injuries represented a small fraction – 9.1% – of all firearm injuries globally representing 22,954 deaths in 2016, but with variability in relative contribution of these deaths at the national level (Table 1). In contrast, suicide by firearm resulted in an estimated 67,522 deaths worldwide in 2016, with a global age-standardized rate of suicide by firearm of 0.9 deaths per 100,000. Age-standardized rates were highest in Greenland at 22.0 deaths per 100,000 – representing 11 deaths in 2016 – and in the United States at a rate of 6.4 deaths per 100,000 or 23,846 deaths in 2016 (Table 1) and lowest in Singapore at a rate of 0.1 deaths per 100,000. With 4.3% of the global population in 2016,[12] firearm suicides in the United States were 35.3% of global firearm suicides. Globally, rates of firearm suicide decreased between 1990 and 2016 at an annualized rate of 1.6% with the fastest decreases in the Philippines (6.0%) and Australia (5.1%); however at a national scale, statistically significant decreases were estimated in fewer than half – 71 of 195 – of countries and territories in this study with no change or statistically significant increases estimated for the majority of locations. The highest annualized increases in firearm suicide rate between 1990 and 2016 were estimated for Jamaica (4.4%), Zimbabwe (2.1%) and Bosnia and Herzegovina (1.7%).

Globally, the majority (64.0% [54.2-68.0]) of firearm injury deaths were homicides – a total of 160,975 deaths – and firearms were the lethal means in more than 50% of all homicides in 49 of 195 countries in 2016 (eTable 14). In 2016, the highest national age-standardized rate of death from physical violence by firearm occurred in El Salvador (38.9 deaths per 100,000); the lowest firearm homicide rate in 2016 was estimated for Singapore at 0.03 deaths per 100,000 (Table 1). Over the period 1990 to 2016, age-standardized firearm homicide rates decreased globally (annualized rate of 2.1%). However, at a national level, significant increases in firearm homicide rates were estimated in 60% (117 of 195) of countries and territories, with the largest annualised increases estimated in Botswana (6.4%), Sudan (5.0%), and Zimbabwe (4.3%). The largest annualized decreases in firearm homicide rates over this time period were estimated in Estonia (6.2%), Taiwan (6.1%), and Tonga (5.4%).

Firearm mortality profiles

To identify locations with similar profiles of firearm injury deaths, we used the global median age-standardized mortality rate of firearm homicide and firearm suicide estimated by this study in 2016 to establish quadrants defined by the relationship between these two rates. From these quadrants, countries with a 2016 estimate and uncertainty interval entirely within each quadrant (high firearm suicide, high firearm homicide, high overall firearm violence, low overall firearm violence) were identified. Figure 3 highlights the 12 locations where rates of firearm suicide were high (significantly greater than the median firearm suicide rate for all countries of 0.7 deaths per 100,000) but where rates of firearm homicide were comparatively low (significantly lower than the median firearm homicide rate of 1.0 deaths per 100,000). These relative ratios of rates of firearm suicide to firearm homicide were highest in 2016 in Iceland (firearm suicide, 1.3 deaths per 100,000; firearm homicide, 0.1 deaths per 100,000), Austria (firearm suicide, 1.9 deaths per 100,000; firearm homicide, 0.1 deaths per 100,000), and Switzerland (firearm suicide, 2.5 deaths per 100,000; firearm homicide, 0.2 deaths per 100,000). More broadly, deaths from suicide by firearm were the largest fraction of all firearm injuries in 47 of 195

224 countries in 2016 (eTable 14 – most of these locations were in the GBD regions of Western Europe, High-
225 income North America, Australasia, and Eastern Europe.

226 Homicides were the dominant fraction of all firearm injuries in 113 countries in 2016 eTable 14. There
227 were 13 countries where firearm homicide rates were estimated to be significantly greater than the
228 national median rate but where firearm suicide rates were below the median firearm suicide rate (Figure
229 3) including El Salvador (firearm homicide rate of 38.9 deaths per 100,000 and a firearm suicide rate of
230 0.2 deaths per 100,000), Jamaica (firearm homicide rate 16.0 deaths per 100,000; firearm suicide rate 0.4
231 deaths per 100,000), and Panama (firearm homicide rate 10.5 deaths per 100,000; firearm suicide rate of
232 0.3 deaths per 100,000).

233 Of the 17 countries where rates of both firearm homicide and firearm suicide were greater than median
234 values (Figure 3) including: the United States (firearm homicide rate of 4.0 deaths per 100,000 and a
235 firearm suicide rate of 6.4 deaths per 100,000), Uruguay (firearm homicide rate 3.0 deaths per 100,000;
236 firearm suicide rate 4.2 deaths per 100,000), and Argentina (firearm homicide rate 3.3 deaths per
237 100,000; firearm suicide rate 2.7 deaths per 100,000). Rates of both firearm suicide and firearm homicide
238 were significantly less than the median rate in 29 countries including Singapore (firearm homicide rate
239 0.03 deaths per 100,000; firearm suicide rate 0.07 deaths per 100,000), Japan (firearm homicide rate 0.03
240 deaths per 100,000; firearm suicide rate 0.09 deaths per 100,000), and China (firearm homicide rate 0.05
241 deaths per 100,000; firearm suicide rate 0.08 deaths per 100,000).

242 Relationship between firearm access and firearm injury deaths

243 Evaluated against a combined proxy measure of firearm access, rates of firearm injury death were larger
244 where the firearm access proxy was also large (Figure 4). The inclusion of countries identified by the US
245 State Department as major illicit drug producing or transporting countries[13] as a factor reduced
246 unexplained variation in a multiple linear regression and was positively associated with firearm homicides

but not firearm suicides (appendix section 3.5; eTable 6). Similarly, the inclusion of each location's Socio-development Index (SDI) level – a composite measure of years of education, per capita income, and fertility rate – improved model fit and was negatively associated with both firearm homicides and firearm suicides.

Discussion

This study estimated that deaths from the use of firearms in non-state forms of violence exceeded those from war and conflict between 1990 and 2016 by as much as 6:1, despite the recent increase in global deaths[14] arising from conflicts in Syria, Yemen, South Sudan and other locations. The majority of these firearm-related deaths were homicides and suicides, unintentional firearm injuries accounted for a minor fraction of global firearm mortality. The wide range in rates of firearm mortality provides an opportunity to use comparisons between locations to explore differences and commonalities in underlying risk factors.

Firearm mortality by age and sex

As with many components of health, illness, and injury, the burden of mortality from firearms is not distributed symmetrically between the sexes or by age. Globally, boys aged 0 to 14 years were over twice as likely to die from firearm injuries compared to girls; a difference that increased in young adolescence and adulthood when male to female rate ratios peak at over 9 times greater rates for men. These sex differences persist across types of firearm violence, although they were highest in the case of firearm homicides. Males are at higher risk of unintentional death while playing with firearms at a young age as well as a higher risk of being involved in homicide involving firearms during adolescence and young adulthood, and from the greater use of firearms by men as a means in suicide throughout adulthood.[15] While men are most often the targets of firearm violence, they are also the most likely perpetrators, often in the context of domestic and relationship violence;[16] The gendered nature of firearm violence

across causes highlights the need for targeted forms of intervention that address cultural components of firearm use by and against men.

Firearm mortality profiles

Comparisons of levels and trends in firearm injury deaths are complicated by differences in the factors underlying firearm violence, hindering efforts to find relationships between locations that could suggest effective public health responses. Identifying locations with similar profiles of firearm violence can provide opportunities to examine how risk factors, histories, cultures, economies, or legal frameworks may have produced similar outcomes. Although public perception is frequently focused on the use of firearms in homicides, particularly mass shootings,[17] in many countries, suicides involving firearms greatly outnumber firearm homicides. Countries that shared this distinctive pattern of firearm injury deaths, where firearm suicide rates are high but without commensurate rates of firearm homicide deaths, included Iceland, Austria, Switzerland, Finland and other countries at high levels of the Socio-development Index (SDI). Suicide was the dominant fraction of firearm injury deaths in these and many higher SDI countries where firearm availability was also high, a pattern supported by the assessment here. Among these countries, the presence of firearms in the home appears directly linked to their greater use as a means of suicide[18] as well as to increases in unintentional firearm injury deaths.[19] Readily available firearms both facilitate unplanned suicide attempts[20] and increase the probability of an injury being lethal; self-directed attempts at harm are more frequently fatal than other firearm-involved violence resulting in death for as much as 91% of attempts for suicide by firearm, 19% for physical violence by firearm, and 5% for unintentional firearm injuries;[21,22] and greater than other methods commonly used in suicide attempts.[23] Efforts to reduce the number of firearms in homes and supporting secure storage of existing firearms can reduce unintentional deaths – particularly for children[24] – while limiting immediate access to a means of harm that generally does not allow opportunity for second thoughts. Access to firearms is not the sole factor determining means of suicide however, and some

component of the relationship between firearm availability, SDI level, and firearm suicide may be a reflection of regional and local variation in the cultural acceptability of suicide by different methods and for each gender,[25] as well as the availability of those means. A notable set of countries were estimated to have low rates of both firearm homicide and firearm suicide, including Singapore, Japan, China, the United Kingdom, and a number of countries in the GBD region of North Africa and the Middle East. The low availability of firearms or low access to firearms by civilian populations in these locations and strong regulatory frameworks,[32] together with differing cultural norms around suicide, are all possible explanations for this pattern. Understanding of the interaction between culture and opportunity can provide critical context for preventive strategies involving means restriction in the case of both firearm suicide and firearm homicide.

The set of countries with high levels of both firearm homicide and suicide included countries as diverse as the United States, Uruguay, Iraq, and Argentina. The United States in particular is globally exceptional in terms of the number of civilian owned firearms – an estimated 265 million firearms, both legal and illegal, with an estimated 4.8 firearms per gun-owning household[26] – and in terms of its level of firearm-related mortality. Among the countries with the highest levels of firearm homicide and comparatively low firearm suicide rates are many that are listed by the US State Department as drug producing or trafficking locations, including El Salvador, Panama, Nicaragua, Bolivia and other central American and Caribbean countries. The relationship between estimated firearm availability and rates of firearm homicide was strongest when accounting for countries with known drug production or trafficking in addition to SDI level. Most of the countries with higher levels of firearm-related mortality but fewer firearms than the highest level (estimated for the United States) were in this group (Figure 4) and in many of these countries the rate of firearm homicide was substantially higher than the rate of firearm suicide – as in El Salvador where the firearm homicide rate exceeded the rate for firearm suicides by 192 times in 2016. The high levels of firearm homicide in a belt extending from Mexico to Brazil (and including the

Caribbean) have been associated with drug cartels,[27] the manufacture and sale of firearms and their illegal trade from the United States,[28] and with post-conflict movement of firearms into civilian populations in some locations.[29] The stock of legal firearms in many of these countries is comparatively small; a recent survey of gun ownership in Mexico identified only 3% of urban households reporting firearm ownership and the majority (80%) of these reported owning just one firearm.[30] Difficulties with accounting for illegal firearm ownership,[31] and the impact of trafficking in firearms on rates of violence in locations with otherwise strong firearm control legislation, may explain some of the variability found in the relationship between firearm availability and associated mortality, particularly for firearm homicide. At the same time, the availability of firearms and the role played by illicit trade are only one dimension of the complex problem of firearm-related violence in the region, multiple structural factors have also been identified as contributors including, poverty, social inequalities and disintegration, alcohol and drug use, and young population age structure.[6,29] Violence at the intersection of these cultural factors, together with a high general availability of firearms, combine to produce high rates of mortality through the lethality inherent in the use of firearms.

Policy and interventions

Both suicide and homicide are defined as intentional behaviors, and thus it should be possible to develop strategies to reduce these forms of violence. The recent review of firearm legislation in the United States by Lee and colleagues[33] highlights the association of laws that strengthen background checks or that require a permit to purchase a firearm with reductions in firearm homicide rates and this general principal is supported by more stringent programs to remove firearms from civilian populations in other settings.[34] In the present study, Australia had one of the largest declines in age-standardized rates of suicide by firearm. The Australian National Firearms Agreement enacted following the 1996 Port Arthur massacre has been closely linked with declines in firearm deaths in Australia, particularly firearm suicides, and an absence of mass shootings.[35] The patterns documented in both South Africa and Brazil also

support a link between regulatory restrictions on firearm access and subsequent reductions in firearm death rates. In South Africa, rates of violent death decreased following the firearm control act of 2000;[36] in the present study, homicides by firearm were estimated to have decreased 54.9% since 2000, faster than non-firearm violence for the same period, a finding similar to that of Matzopolous and colleagues[37] who estimated the legislation may have prevented more than 4,500 deaths across five South African cities between 2001 and 2005. In Brazil, where much of the stock of civilian firearms are likely unregistered, large decreases in firearm homicide since the year 2000 in the state of São Paulo, and firearm suicides in the state of Rio de Janeiro, have been linked to more effective policing, firearm buy-back programs, and to enforcement of firearm control legislation passed in 2003.[38] The hypothesis that differences in levels of violence between countries reflect both the availability of firearms and the extent of firearm control at a national level is consistent with these findings, although more disaggregated data are needed to transfer the analysis to other settings.

Limitations

This study has several limitations: evaluating the burden of firearm deaths on a global scale is constrained by the limitations that apply to the GBD 2016 study generally,[8] but also by limitations specific to evaluating firearms-related deaths. First, many locations, particularly locations in sub-Saharan Africa, southeast Asia, and the region of North Africa and Middle East, have limited vital registration data and the quality of the available data was not evenly distributed. Using combinations of available sources and estimates for missing data results in a more comprehensive set of estimates, but with limits in precision. The GBD study both uses data standardization techniques and provides an evaluation of data completeness and the percent of data well-certified by location to evaluate and adjust for variation in data quality and completeness (Appendix section 2.2 and eTable 2). Due to the complexities involved in the statistical modeling as well as computational limitations the incorporation of uncertainty from the redistribution of “garbage codes” has not yet been possible in the GBD Study – this is an active area of

work and the next iteration of the GBD Study should incorporate garbage code redistribution in estimates of uncertainty. Second, method-specific suicide data were reported by only a subset of countries – estimates of firearm suicide were thus based on fewer data than estimates for all suicides and underestimation may have occurred in data-poor regions. Third, in many locations the incidence of firearm injury was very low, requiring statistical smoothing to ensure zeroes in vital registration data were incorporated into estimates. Fourth, unintentional firearm injury deaths – for children in particular – may be misclassified;[39] in other instances, homicides and suicides may be misclassified as unintentional firearm injury deaths where there are strong cultural pressures to mitigate legal implications of homicide or to avoid stigma associated with suicide,[40] particularly when intent is not clear. Fifth, a lack of direct measures of firearm ownership in most countries, and limitations associated with existing estimates or proxies, necessitated the development of a combination proxy measure which introduced additional uncertainty. Sixth, beyond the scarcity of reliable data on firearm ownership, the role of social or cultural factors that determine willingness to use firearms for suicide, and the extent to which homicide rates may be driven by illegal firearms and not legal ownership, are probable contributors to global variation in firearm-related mortality that were not directly incorporated into these estimates.

Conclusions

This study estimated a total of 251,451 deaths globally from firearm injuries in 2016, the majority of these deaths were firearm homicides. Despite a global decrease in rates of firearm injury deaths, disparities exist between countries in terms of the composition of firearm injury deaths and trends in rates of death.

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identified with a three-letter code adjacent to their respective data points. A key to these three-letter country codes is available in eTable 7. The relative position of each location on the Socio-demographic Index (SDI) – a composite measure of income per capita, fertility, and education level – is indicated by a color gradient from red (lowest=19.55) to blue (highest=93.58).

Table 1. Age-standardized rate of deaths in 1990 and in 2016 and number of deaths by firearm subcause, and the 1990 to 2016 annualized rate of change (ARC) in age-standardized rate as a percent by firearm subcause for 195 countries and territories. The GBD 2017 assessment of data quality used to develop estimates by location is indicated by a rating from 0 to 5 stars as described in the methods.

Table 1. Age-standardized rate of deaths in 1990 and in 2016 and number of deaths by firearm subcause, and the 1990 to 2016 annualized rate of change (ARC) in age-standardized rate as a percent by firearm subcause for 195 countries and territories. The GBD 2017 assessment of data quality used to develop estimates by location is indicated by a rating from 0 to 5 stars as described in the methods.

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	Data quality	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	1990	2016	1990	2016	1990	2016	1990	2016
Global	★★★☆☆	-0.86	4.2 [3.47-4.74]	3.36 [2.61-3.68]	-0.21	2.24 [1.55-2.77]	2.12 [1.41-2.4]	-1.57	1.39 [1.17-1.77]	0.92 [0.76-1.15]	-2.26	0.57 [0.45-0.62]	0.32 [0.25-0.34]	209022 [172152-235529]	251451 [194706-276025]	117320 [81981-143123]	160975 [107159-182479]	63709 [52954-81654]	67522 [55389-84130]	27992 [21994-30456]	22954 [18237-24756]
Afghanistan	★☆☆☆☆	0.04	14.02 [8.69-23.39]	14.16 [8.91-22.56]	0.26	9.98 [4.6-19.04]	10.68 [5.15-19.23]	-0.07	1.06 [0.36-2.8]	1.04 [0.44-2.41]	-0.77	2.98 [1.43-4.69]	2.44 [1.43-3.46]	1366 [819-2333]	4049 [2412-6640]	998 [451-1916]	3154 [1475-5778]	80 [21-231]	228 [77-583]	288 [137-454]	667 [395-945]
Albania	★★★☆☆	-1.6	4.87 [3.58-6.01]	3.22 [2.58-4.18]	-2.21	2.89 [1.76-4.02]	1.63 [1.24-2.49]	0.98	1.07 [0.86-1.72]	1.38 [0.83-1.88]	-5.76	0.91 [0.49-1.16]	0.2 [0.15-0.32]	158 [115-197]	100 [80-129]	95 [57-132]	50 [38-76]	34 [27-52]	44 [27-60]	30 [16-39]	6 [5-10]
Algeria	★☆☆☆☆	-1.73	1.5 [0.95-2.09]	0.95 [0.68-1.36]	-1.1	0.6 [0.23-1.18]	0.45 [0.22-0.83]	-1.13	0.28 [0.15-0.68]	0.21 [0.12-0.41]	-2.84	0.62 [0.42-0.99]	0.29 [0.19-0.47]	328 [209-476]	382 [269-545]	138 [52-276]	191 [95-351]	52 [26-134]	80 [47-155]	138 [94-219]	111 [72-178]
American Samoa	★★★☆☆	-3.03	4.2 [2.67-5.15]	1.91 [1.38-3.07]	-2.19	1.57 [0.78-2.33]	0.89 [0.54-1.86]	-2.79	1.37 [0.71-1.81]	0.66 [0.39-0.95]	-4.83	1.26 [0.68-1.58]	0.36 [0.28-0.55]	2 [1-2]	1 [1-2]	1 [0-1]	1 [0-1]	1 [0-1]	0 [0-1]	0 [0-1]	0 [0-0]
Andorra	☆☆☆☆☆	-1.47	1.11 [0.42-2.9]	0.76 [0.26-2.21]	-1.03	0.16 [0.07-0.42]	0.12 [0.04-0.34]	-1.49	0.85 [0.25-2.48]	0.58 [0.15-1.83]	-2.03	0.1 [0.07-0.16]	0.06 [0.04-0.1]	1 [0-2]	1 [0-2]	0 [0-0]	0 [0-0]	0 [0-1]	1 [0-2]	0 [0-0]	0 [0-0]
Angola	★☆☆☆☆	-2.08	4.35 [2.81-6.53]	2.53 [1.64-3.95]	-1.59	1.85 [0.77-3.38]	1.22 [0.58-2.36]	-2.05	1.23 [0.68-2.04]	0.72 [0.45-1.16]	-2.98	1.27 [0.86-1.79]	0.59 [0.39-0.85]	354 [223-542]	473 [292-779]	177 [74-318]	277 [130-536]	65 [33-115]	85 [53-142]	112 [73-163]	111 [73-161]
Antigua and Barbuda	★★★★☆	0.89	4.3 [3.45-6.23]	5.41 [3.57-6.8]	2.16	1.27 [0.72-2.97]	2.23 [0.91-3.2]	-0.43	0.16 [0.12-0.21]	0.14 [0.11-0.19]	0.22	2.86 [2.48-3.5]	3.04 [1.99-3.8]	3 [2-4]	5 [3-7]	1 [0-2]	2 [1-3]	0 [0-0]	0 [0-0]	2 [1-2]	3 [2-4]
Argentina	★★★★☆	-0.9	8.82 [7.28-11.34]	6.99 [5.4-8.8]	-0.5	3.8 [2.02-6.05]	3.34 [1.95-4.95]	-1.51	4.05 [3.16-5.28]	2.73 [2.06-3.76]	-0.23	0.97 [0.85-1.55]	0.91 [0.71-1.05]	2716 [2235-3496]	3116 [2420-3914]	1187 [631-1882]	1474 [860-2185]	1227 [959-1603]	1233 [930-1692]	302 [265-479]	408 [317-472]
Armenia	★★★★☆	-1.54	2.93 [2.16-3.7]	1.96 [1.31-2.51]	-1.97	1.24 [0.49-1.91]	0.74 [0.28-1.2]	1.42	0.34 [0.22-0.68]	0.48 [0.27-0.67]	-2.36	1.35 [1.06-1.6]	0.73 [0.55-0.86]	98 [72-126]	65 [44-83]	46 [18-70]	24 [9-39]	11 [7-23]	17 [10-23]	41 [33-49]	25 [18-29]
Australia	★★★★★	-4.86	3.43 [2.28-3.93]	0.97 [0.78-1.64]	-3.96	0.54 [0.25-0.78]	0.19 [0.12-0.38]	-5.11	2.7 [1.69-3.19]	0.71 [0.52-1.29]	-4.3	0.2 [0.18-0.22]	0.06 [0.06-0.09]	614 [407-702]	274 [222-451]	96 [44-139]	48 [31-97]	484 [303-571]	207 [151-361]	35 [30-38]	19 [16-26]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	**Data quality**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**
Austria	★★★★★	-2.68	4.14 [3.24-5.35]	2.06 [1.37-3.04]	-4.24	0.42 [0.21-0.6]	0.14 [0.1-0.26]	-2.53	3.59 [2.71-4.92]	1.86 [1.15-2.85]	-2.81	0.13 [0.12-0.15]	0.06 [0.05-0.08]	364 [280-460]	253 [160-351]	34 [17-49]	13 [9-25]	318 [237-424]	232 [137-329]	11 [10-13]	7 [5-9]
Azerbaijan	★★★☆☆	-1.77	4.4 [2.79-5.66]	2.77 [1.79-3.83]	-2.23	1.95 [0.43-3.08]	1.09 [0.32-1.86]	-0.42	0.39 [0.28-0.49]	0.35 [0.21-0.49]	-1.67	2.06 [1.68-2.66]	1.33 [1.01-1.78]	305 [181-404]	286 [178-403]	149 [30-240]	119 [34-205]	22 [16-29]	35 [20-51]	133 [107-175]	132 [98-178]
Bahrain	★★★☆☆	-1.34	1.24 [0.93-1.92]	0.87 [0.58-1.26]	-0.47	0.54 [0.34-1.04]	0.48 [0.29-0.81]	-1.64	0.31 [0.19-0.66]	0.2 [0.12-0.31]	-2.67	0.39 [0.28-0.5]	0.19 [0.11-0.27]	6 [4-8]	13 [8-19]	3 [2-5]	8 [5-14]	1 [1-2]	3 [2-5]	2 [1-2]	3 [1-4]
Bangladesh	★★☆☆☆	-3.37	1.78 [0.74-3.09]	0.74 [0.44-1.2]	-1.98	0.27 [0.16-0.59]	0.16 [0.08-0.26]	-3.79	1.36 [0.41-2.58]	0.51 [0.23-1.04]	-2.82	0.15 [0.11-0.25]	0.07 [0.05-0.09]	1698 [697-2881]	1174 [690-1899]	236 [138-512]	263 [136-446]	1350 [411-2475]	820 [377-1526]	112 [77-181]	91 [64-112]
Barbados	★★★★☆	1.26	3.27 [2.23-6.19]	4.54 [2.25-6.18]	1.54	2.45 [1.43-5.3]	3.65 [1.4-5.19]	0.66	0.28 [0.2-0.41]	0.33 [0.23-0.44]	0.06	0.55 [0.47-0.7]	0.55 [0.37-0.67]	9 [6-18]	13 [6-17]	7 [4-15]	10 [4-14]	1 [1-1]	1 [1-1]	1 [1-2]	2 [1-2]
Belarus	★★★★☆	-1.77	2.42 [1.77-3.32]	1.53 [1.05-2.21]	-2.29	0.9 [0.32-1.6]	0.5 [0.24-1.01]	-1.18	1.03 [0.69-1.58]	0.76 [0.44-1.19]	-2.24	0.49 [0.39-0.62]	0.27 [0.22-0.35]	254 [185-348]	169 [117-243]	93 [33-166]	51 [25-104]	110 [73-169]	87 [51-138]	51 [41-65]	31 [24-39]
Belgium	★★★★☆	-3.07	3.82 [3.02-4.91]	1.72 [1.24-2.4]	-3.23	0.81 [0.45-1.25]	0.35 [0.21-0.57]	-3.15	2.83 [2.14-4.0]	1.25 [0.79-1.89]	-1.45	0.18 [0.16-0.22]	0.13 [0.09-0.15]	428 [335-545]	250 [170-338]	84 [47-129]	41 [25-67]	323 [243-446]	188 [115-279]	21 [18-24]	20 [14-23]
Belize	★★★★☆	2.42	7.56 [5.59-12.98]	14.18 [7.55-19.83]	3.86	3.79 [2.13-9.08]	10.33 [3.94-15.49]	1.27	0.67 [0.42-0.97]	0.93 [0.59-1.33]	-0.24	3.1 [2.47-3.77]	2.91 [2.05-3.81]	12 [9-22]	52 [27-75]	6 [4-15]	39 [15-59]	1 [1-1]	3 [2-4]	5 [4-6]	10 [7-13]
Benin	★☆☆☆☆	0.15	4.37 [3.27-6.13]	4.55 [3.46-5.56]	1.63	1.17 [0.71-2.15]	1.8 [1.23-2.47]	0.06	1.43 [0.97-2.52]	1.45 [0.97-2.05]	-1.18	1.77 [1.21-2.52]	1.3 [0.83-1.88]	167 [116-237]	378 [286-473]	53 [31-95]	184 [125-256]	36 [23-69]	86 [55-126]	79 [47-113]	108 [67-159]
Bermuda	★★★★★	-2.13	2.75 [1.84-5.26]	1.58 [0.65-2.38]	-1.63	2.09 [1.24-4.57]	1.37 [0.42-2.1]	-4.02	0.26 [0.17-0.45]	0.09 [0.06-0.15]	-4.61	0.4 [0.34-0.61]	0.12 [0.1-0.16]	1 [1-3]	1 [0-2]	1 [1-2]	1 [0-2]	0 [0-0]	0 [0-0]	0 [0-0]	0 [0-0]
Bhutan	☆☆☆☆☆	-2.48	1.97 [1.16-2.9]	1.03 [0.63-1.69]	-2.09	0.33 [0.1-0.57]	0.19 [0.07-0.3]	-1.84	1.12 [0.36-2.12]	0.69 [0.33-1.32]	-4.77	0.53 [0.31-0.84]	0.15 [0.1-0.25]	8 [4-12]	8 [5-13]	2 [0-3]	2 [1-3]	5 [1-9]	6 [3-11]	2 [1-3]	1 [1-2]
Bolivia	★☆☆☆☆	-1.77	7.97 [5.87-10.37]	5.03 [3.28-6.8]	-1.1	5.09 [3.23-7.11]	3.82 [2.29-5.42]	-3.1	0.99 [0.53-1.47]	0.44 [0.27-0.64]	-3.45	1.9 [1.41-2.76]	0.77 [0.56-1.04]	495 [364-645]	535 [342-728]	315 [196-446]	413 [242-588]	52 [28-77]	41 [25-60]	128 [93-187]	81 [58-109]
Bosnia and Herzegovina	★★☆☆☆	-0.37	1.47 [0.87-2.22]	1.33 [0.74-1.76]	-1.69	0.92 [0.44-1.39]	0.6 [0.3-0.82]	1.72	0.43 [0.23-1.15]	0.66 [0.29-0.93]	-1.83	0.12 [0.08-0.19]	0.07 [0.05-0.11]	69 [41-104]	58 [33-77]	45 [21-68]	24 [12-33]	20 [11-54]	30 [13-43]	5 [3-8]	4 [3-5]
Botswana	☆☆☆☆☆	0.93	2.96 [1.9-4.7]	3.76 [1.63-6.12]	6.42	0.29 [0.13-0.55]	1.54 [0.24-3.01]	-0.3	1.68 [0.83-2.98]	1.55 [0.55-3.13]	-1.49	0.99 [0.5-1.73]	0.67 [0.29-1.14]	28 [18-47]	81 [34-131]	3 [1-6]	36 [5-72]	15 [7-30]	31 [10-66]	10 [5-18]	14 [6-23]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	Data quality	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	1990	2016	1990	2016	1990	2016	1990	2016
Brazil	★★★★☆	0.2	18.41 [14.04-27.22]	19.38 [11.16-22.63]	0.53	15.8 [11.19-24.83]	18.16 [9.77-21.41]	-2.91	1.73 [1.09-1.96]	0.81 [0.61-1.35]	-2.91	0.88 [0.64-0.96]	0.41 [0.34-0.49]	27265 [20951-39982]	43185 [24813-50426]	23833 [17226-36806]	40587 [21796-47842]	2174 [1342-2498]	1732 [1278-2922]	1259 [879-1386]	867 [698-1040]
Brunei	★★★☆☆	-1.95	1.13 [0.83-1.37]	0.68 [0.52-0.88]	-0.15	0.17 [0.09-0.25]	0.17 [0.09-0.24]	-1.56	0.44 [0.27-0.67]	0.29 [0.2-0.44]	-3.27	0.51 [0.37-0.63]	0.22 [0.18-0.26]	2 [2-3]	3 [2-3]	0 [0-1]	1 [0-1]	1 [0-1]	1 [1-2]	1 [1-1]	1 [1-1]
Bulgaria	★★★★☆	-0.37	1.84 [1.5-2.7]	1.67 [1.16-2.36]	-1.06	0.72 [0.39-1.31]	0.54 [0.28-1.03]	0.34	0.75 [0.54-1.27]	0.82 [0.45-1.29]	-0.74	0.37 [0.33-0.47]	0.3 [0.2-0.38]	167 [137-250]	142 [100-198]	64 [35-118]	43 [22-80]	71 [51-122]	74 [41-115]	32 [29-42]	25 [18-32]
Burkina Faso	★☆☆☆☆	-1.04	3.29 [2.13-5.63]	2.51 [1.63-4.06]	0.32	0.23 [0.11-0.84]	0.25 [0.13-0.81]	-0.94	2.23 [1.21-4.29]	1.75 [0.95-3.07]	-1.87	0.83 [0.65-1.02]	0.51 [0.4-0.63]	170 [110-303]	271 [177-473]	19 [8-67]	44 [22-138]	99 [51-201]	163 [84-300]	53 [40-68]	64 [45-82]
Burundi	★☆☆☆☆	-1.19	3.27 [1.9-5.42]	2.4 [1.61-4.66]	-0.27	0.2 [0.09-0.36]	0.19 [0.09-0.33]	-0.6	1.56 [0.64-3.35]	1.34 [0.59-3.4]	-2.09	1.51 [0.91-2.17]	0.88 [0.56-1.26]	112 [63-180]	176 [118-325]	10 [4-17]	20 [9-36]	46 [17-100]	86 [37-215]	57 [32-88]	70 [42-107]
Cambodia	★☆☆☆☆	-2.81	3.05 [1.98-3.95]	1.47 [0.96-2.5]	-2.17	1.6 [0.58-2.43]	0.91 [0.49-1.87]	-1.5	0.37 [0.15-0.66]	0.25 [0.15-0.44]	-4.83	1.08 [0.7-1.61]	0.31 [0.19-0.65]	225 [140-299]	230 [146-399]	127 [44-197]	154 [80-318]	24 [9-44]	35 [19-60]	75 [48-106]	41 [24-89]
Cameroon	☆☆☆☆☆	0.09	4.7 [3.73-5.88]	4.81 [3.11-6.34]	0.9	1.63 [0.88-2.28]	2.06 [1.01-3.01]	-0.46	1.46 [0.98-2.47]	1.29 [0.77-1.92]	-0.39	1.61 [1.21-2.06]	1.46 [0.78-2.07]	408 [323-507]	906 [562-1212]	172 [91-244]	476 [228-706]	88 [56-158]	164 [94-249]	148 [104-193]	266 [140-401]
Canada	★★★★★	-3.06	4.69 [3.19-5.59]	2.12 [1.64-2.82]	-1.63	0.75 [0.46-1.34]	0.49 [0.28-0.81]	-3.35	3.68 [2.2-4.48]	1.54 [1.1-2.23]	-4.31	0.25 [0.19-0.29]	0.08 [0.07-0.12]	1377 [942-1644]	893 [693-1182]	223 [135-396]	174 [100-279]	1084 [652-1316]	686 [497-987]	70 [52-79]	34 [30-47]
Cape Verde	★★☆☆☆	0.78	8.47 [6.13-11.27]	10.39 [6.24-13.46]	1.21	5.66 [3.47-7.63]	7.76 [3.93-10.44]	-0.49	1.89 [1.14-3.3]	1.66 [1.14-2.33]	0.17	0.93 [0.61-1.9]	0.97 [0.56-1.28]	24 [17-31]	56 [33-73]	17 [10-23]	45 [23-60]	4 [2-7]	7 [4-10]	3 [2-5]	4 [3-6]
Central African Republic	☆☆☆☆☆	0.09	4.83 [3.12-6.84]	4.94 [2.75-7.65]	0.32	2.25 [1.03-3.66]	2.45 [1.1-4.49]	0.49	1.29 [0.66-1.92]	1.46 [0.55-2.63]	-0.85	1.29 [0.84-1.83]	1.04 [0.54-1.6]	112 [70-161]	211 [116-337]	58 [27-95]	118 [53-217]	23 [11-34]	47 [16-86]	31 [19-45]	46 [23-74]
Chad	☆☆☆☆☆	0.36	5.0 [3.63-7.02]	5.5 [4.02-7.28]	1.54	1.11 [0.64-2.12]	1.65 [1.1-2.29]	0.01	1.55 [0.7-2.89]	1.55 [0.67-2.8]	-0.09	2.34 [1.58-3.22]	2.29 [1.44-3.18]	217 [156-314]	570 [435-714]	57 [32-107]	209 [140-295]	43 [20-78]	99 [43-174]	117 [76-167]	262 [159-369]
Chile	★★★★☆	-3.18	5.86 [4.5-8.17]	2.56 [1.66-4.0]	-1.62	2.41 [1.49-4.63]	1.58 [0.82-2.65]	-4.73	2.68 [1.68-3.5]	0.78 [0.5-1.25]	-5.28	0.77 [0.62-0.88]	0.19 [0.14-0.29]	738 [563-1045]	495 [325-772]	325 [200-635]	300 [155-507]	317 [193-419]	158 [100-254]	96 [77-111]	38 [27-57]
China	★★★☆☆	-5.2	0.82 [0.51-0.96]	0.21 [0.19-0.29]	-3.67	0.13 [0.07-0.22]	0.05 [0.04-0.1]	-2.93	0.18 [0.13-0.24]	0.08 [0.06-0.13]	-7.25	0.51 [0.21-0.61]	0.08 [0.07-0.09]	7947 [4715-9419]	2910 [2585-4083]	1494 [802-2465]	757 [507-1439]	1739 [1131-2453]	1245 [949-2042]	4715 [1876-5747]	908 [814-1155]
Colombia	★★★★☆	-3.02	56.72 [38.28-65.54]	25.86 [18.36-31.87]	-3.02	53.27 [34.14-62.22]	24.32 [16.72-30.36]	-2.25	2.16 [1.7-3.22]	1.2 [0.78-1.72]	-5.09	1.29 [1.1-1.71]	0.34 [0.28-0.56]	19137 [12917-21625]	13342 [9415-16261]	18029 [11558-20611]	12587 [8567-15511]	685 [527-1042]	595 [378-859]	423 [352-583]	160 [128-276]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	**Data quality**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**
Comoros	☆☆☆☆☆	0.07	3.21 [2.04-5.67]	3.26 [1.75-6.17]	2.15	0.93 [0.53-1.52]	1.63 [0.63-2.55]	-0.83	1.44 [0.63-3.74]	1.16 [0.44-3.56]	-2.22	0.83 [0.57-1.19]	0.47 [0.34-0.61]	9 [5-14]	19 [10-33]	3 [2-5]	11 [5-18]	3 [1-8]	5 [2-16]	2 [2-3]	2 [2-3]
Congo	☆☆☆☆☆	-1.79	3.89 [2.3-5.76]	2.45 [1.47-3.67]	-1.56	2.09 [0.76-3.62]	1.39 [0.61-2.46]	-1.47	0.94 [0.53-1.49]	0.64 [0.38-1.04]	-2.86	0.86 [0.53-1.32]	0.41 [0.26-0.61]	71 [41-108]	92 [52-142]	43 [15-74]	59 [26-105]	12 [7-20]	18 [10-29]	16 [9-24]	15 [9-23]
Costa Rica	★★★★★	0.91	4.68 [3.2-6.46]	5.92 [2.76-7.76]	1.69	3.03 [1.68-4.92]	4.7 [1.64-6.46]	-1.21	1.46 [0.89-1.88]	1.07 [0.68-1.43]	-0.69	0.19 [0.16-0.3]	0.16 [0.13-0.19]	131 [88-182]	307 [142-403]	90 [49-142]	245 [86-337]	37 [21-48]	54 [34-74]	5 [4-8]	8 [7-9]
Cote d'Ivoire	★☆☆☆☆	-0.08	5.09 [3.48-9.96]	4.98 [3.35-9.02]	0.69	0.95 [0.29-5.17]	1.14 [0.41-5.5]	0.06	1.94 [1.06-3.08]	1.97 [1.01-2.94]	-0.61	2.2 [1.64-2.88]	1.88 [1.13-2.44]	419 [276-921]	798 [514-1681]	101 [31-555]	241 [86-1167]	116 [59-202]	239 [116-361]	202 [142-275]	319 [185-430]
Croatia	★★★★☆	-2.47	4.96 [3.63-6.0]	2.6 [1.88-3.69]	-3.94	1.33 [0.66-1.72]	0.48 [0.33-0.87]	-1.66	3.06 [2.16-4.27]	1.98 [1.28-3.04]	-5.3	0.56 [0.34-0.66]	0.14 [0.12-0.19]	251 [185-305]	135 [97-192]	67 [34-87]	22 [15-41]	157 [110-221]	106 [68-156]	27 [17-32]	7 [6-10]
Cuba	★★★★★	-1.97	2.44 [1.91-4.04]	1.46 [1.19-2.27]	-3.08	1.16 [0.65-2.65]	0.52 [0.3-1.31]	-1.94	0.75 [0.53-1.09]	0.45 [0.35-0.68]	-0.33	0.54 [0.48-0.63]	0.49 [0.22-0.58]	279 [215-478]	205 [164-298]	138 [77-316]	62 [35-152]	82 [58-123]	67 [52-95]	58 [52-70]	76 [28-90]
Cyprus	★★☆☆☆	-1.8	2.79 [2.32-3.87]	1.75 [1.44-2.38]	-1.13	0.87 [0.56-1.16]	0.65 [0.42-0.88]	-1.82	1.47 [1.06-2.5]	0.91 [0.72-1.5]	-3.41	0.46 [0.35-0.56]	0.19 [0.15-0.22]	19 [15-26]	19 [15-25]	6 [4-8]	7 [4-9]	10 [7-17]	10 [8-16]	3 [2-4]	2 [2-2]
Czech Republic	★★★★☆	-0.85	1.9 [1.55-3.13]	1.52 [1.0-2.03]	-2.89	0.42 [0.29-0.84]	0.2 [0.12-0.36]	-0.09	1.15 [0.85-2.1]	1.12 [0.61-1.61]	-1.85	0.33 [0.29-0.52]	0.2 [0.16-0.24]	209 [171-346]	209 [130-275]	45 [31-90]	23 [14-42]	129 [94-237]	158 [84-229]	36 [32-55]	28 [21-32]
Democratic Republic of the Congo	★☆☆☆☆	-0.34	3.18 [2.1-4.15]	2.91 [1.89-3.88]	-0.33	1.61 [0.69-2.43]	1.47 [0.71-2.25]	0.14	0.81 [0.52-1.13]	0.84 [0.43-1.3]	-0.95	0.76 [0.58-0.97]	0.59 [0.43-0.78]	856 [551-1156]	1773 [1143-2402]	492 [210-750]	1039 [496-1577]	150 [96-223]	363 [176-569]	215 [148-291]	371 [248-513]
Denmark	★★★★☆	-3.16	2.64 [1.81-3.38]	1.16 [0.8-1.85]	-2.94	0.31 [0.16-0.5]	0.14 [0.08-0.25]	-3.23	2.25 [1.38-2.98]	0.97 [0.62-1.68]	-2.2	0.08 [0.08-0.11]	0.05 [0.04-0.06]	156 [106-200]	84 [59-131]	16 [9-27]	8 [5-15]	135 [82-178]	72 [47-120]	5 [4-6]	4 [3-4]
Djibouti	☆☆☆☆☆	0.65	2.43 [1.41-3.76]	2.87 [1.64-4.39]	2.71	0.76 [0.35-1.26]	1.54 [0.55-2.41]	-0.12	0.76 [0.23-1.61]	0.73 [0.28-1.66]	-1.61	0.91 [0.55-1.77]	0.6 [0.43-0.8]	10 [6-15]	23 [12-34]	4 [2-7]	14 [5-22]	2 [1-5]	5 [2-11]	4 [2-7]	4 [3-6]
Dominica	★★★★☆	2.95	1.92 [1.38-3.84]	4.14 [1.93-5.7]	3.67	1.32 [0.8-3.17]	3.42 [1.24-4.9]	1.19	0.13 [0.08-0.2]	0.17 [0.11-0.25]	0.55	0.48 [0.42-0.63]	0.55 [0.34-0.73]	1 [1-3]	3 [1-4]	1 [1-2]	3 [1-4]	0 [0-0]	0 [0-0]	0 [0-0]	0 [0-1]
Dominican Republic	★★★☆☆	1.05	8.11 [6.27-13.15]	10.64 [6.68-13.78]	1.21	6.27 [4.63-10.48]	8.6 [5.0-11.33]	-0.12	0.96 [0.72-1.57]	0.93 [0.6-1.24]	0.93	0.88 [0.67-1.74]	1.12 [0.63-1.47]	523 [397-879]	1110 [711-1438]	418 [306-718]	908 [542-1194]	51 [38-91]	89 [58-120]	54 [40-113]	112 [64-151]
Ecuador	★★★★☆	-0.91	11.69 [8.82-19.08]	9.23 [5.68-12.21]	-0.7	10.02 [6.84-17.58]	8.35 [4.85-11.48]	-2.29	0.95 [0.7-1.45]	0.53 [0.31-0.73]	-2.69	0.71 [0.63-0.81]	0.35 [0.28-0.4]	1082 [824-1720]	1521 [941-2012]	924 [634-1581]	1382 [807-1893]	84 [60-129]	82 [48-116]	74 [64-84]	57 [46-66]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	**Data quality**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**
Egypt	★★★☆☆	-0.58	0.75 [0.43-1.1]	0.64 [0.37-1.01]	0.63	0.26 [0.11-0.46]	0.3 [0.15-0.51]	-0.79	0.31 [0.08-0.7]	0.25 [0.07-0.67]	-2.69	0.19 [0.13-0.23]	0.09 [0.06-0.13]	346 [201-499]	543 [311-830]	126 [53-226]	270 [131-454]	129 [33-298]	197 [54-519]	92 [69-110]	77 [46-110]
El Salvador	★★★☆☆	-0.51	44.77 [34.82-52.89]	39.18 [27.53-47.43]	-0.43	43.39 [33.6-52.02]	38.85 [27.15-47.1]	-3.91	0.56 [0.28-0.74]	0.2 [0.14-0.33]	-7.1	0.82 [0.5-0.97]	0.13 [0.09-0.27]	2116 [1662-2508]	2504 [1745-3034]	2049 [1601-2453]	2483 [1711-3013]	26 [13-35]	13 [9-21]	40 [24-48]	8 [6-17]
Equatorial Guinea	☆☆☆☆☆	-4.4	5.3 [3.07-8.33]	1.69 [0.85-3.27]	-4.29	2.66 [1.11-4.8]	0.87 [0.29-2.08]	-3.95	1.38 [0.72-2.29]	0.5 [0.21-1.01]	-5.26	1.26 [0.7-1.85]	0.32 [0.15-0.58]	18 [10-29]	12 [6-23]	10 [4-18]	7 [2-16]	3 [2-6]	3 [1-5]	4 [2-7]	2 [1-4]
Eritrea	☆☆☆☆☆	-0.15	4.56 [3.37-5.99]	4.39 [2.84-5.91]	2.07	1.2 [0.7-1.93]	2.06 [0.76-3.45]	-1.17	1.89 [1.13-2.81]	1.39 [0.88-2.04]	-1.73	1.47 [1.13-2.01]	0.94 [0.72-1.19]	90 [63-122]	170 [101-243]	31 [18-50]	94 [35-160]	30 [16-45]	43 [26-66]	29 [20-43]	33 [24-43]
Estonia	★★★★★	-3.61	4.87 [3.32-6.53]	1.9 [1.31-3.06]	-6.18	2.22 [0.84-3.57]	0.44 [0.21-1.27]	-2.01	2.18 [1.45-3.12]	1.29 [0.74-2.12]	-4.02	0.48 [0.33-0.63]	0.17 [0.14-0.21]	79 [54-105]	29 [20-47]	35 [13-56]	6 [3-17]	36 [24-52]	21 [12-33]	8 [5-10]	3 [2-3]
Ethiopia	★★☆☆☆	-0.96	5.53 [3.43-11.17]	4.31 [3.16-6.48]	-0.5	2.72 [1.35-6.8]	2.38 [1.55-4.35]	-2.0	1.7 [0.9-2.7]	1.01 [0.65-1.73]	-0.73	1.1 [0.74-2.31]	0.91 [0.66-1.15]	1825 [1090-3895]	3268 [2299-5052]	1025 [507-2571]	2016 [1262-3797]	469 [225-752]	645 [409-1033]	331 [204-770]	607 [414-811]
Federated States of Micronesia	☆☆☆☆☆	-1.51	5.19 [2.83-7.29]	3.5 [1.95-5.46]	-0.23	1.64 [0.69-2.51]	1.54 [0.72-2.47]	-1.59	2.02 [0.74-3.49]	1.33 [0.47-2.57]	-3.46	1.53 [0.89-2.08]	0.62 [0.46-0.85]	4 [2-6]	3 [2-5]	1 [1-2]	2 [1-2]	2 [1-3]	1 [0-2]	1 [1-1]	1 [0-1]
Fiji	★★☆☆☆	-0.12	0.62 [0.44-0.9]	0.6 [0.4-0.88]	1.02	0.26 [0.14-0.49]	0.35 [0.18-0.57]	-0.98	0.16 [0.11-0.31]	0.13 [0.08-0.21]	-1.57	0.19 [0.13-0.25]	0.12 [0.09-0.16]	4 [3-6]	5 [3-7]	2 [1-3]	3 [2-5]	1 [1-2]	1 [1-2]	1 [1-1]	1 [1-1]
Finland	★★★★★	-3.47	6.77 [4.68-8.74]	2.74 [1.93-4.31]	-4.18	0.7 [0.27-1.03]	0.24 [0.14-0.36]	-3.35	5.83 [3.86-7.73]	2.44 [1.64-4.03]	-4.68	0.24 [0.17-0.27]	0.07 [0.06-0.08]	366 [252-475]	186 [134-298]	37 [14-54]	13 [8-20]	316 [212-424]	168 [116-282]	12 [9-14]	5 [4-6]
France	★★★★☆	-3.29	6.4 [5.09-7.84]	2.72 [2.03-4.04]	-3.0	0.72 [0.42-1.12]	0.33 [0.2-0.56]	-3.41	5.29 [3.92-6.82]	2.18 [1.52-3.49]	-2.47	0.39 [0.35-0.45]	0.21 [0.13-0.25]	3993 [3110-4777]	2329 [1715-3220]	424 [245-651]	222 [134-358]	3330 [2414-4170]	1935 [1324-2893]	239 [214-284]	172 [121-203]
Gabon	☆☆☆☆☆	-1.49	3.37 [2.1-4.62]	2.29 [1.39-3.57]	-1.15	1.71 [0.64-2.83]	1.27 [0.54-2.4]	-1.09	0.82 [0.5-1.29]	0.62 [0.35-1.09]	-2.84	0.84 [0.54-1.23]	0.4 [0.25-0.58]	25 [16-35]	35 [21-56]	14 [5-23]	22 [9-41]	5 [3-9]	7 [4-13]	6 [4-9]	6 [3-9]
Georgia	★★★★☆	-1.17	3.93 [2.71-5.28]	2.9 [2.03-4.55]	-1.56	2.53 [1.25-3.74]	1.69 [0.95-3.21]	0.12	0.42 [0.28-0.72]	0.44 [0.25-0.66]	-0.87	0.98 [0.71-1.23]	0.78 [0.56-0.98]	219 [151-295]	124 [88-194]	141 [69-210]	71 [40-136]	24 [15-40]	20 [11-30]	54 [39-68]	34 [25-43]
Germany	★★★★☆	-2.17	1.66 [1.3-2.47]	0.94 [0.7-1.31]	-3.54	0.26 [0.14-0.44]	0.1 [0.06-0.19]	-2.01	1.26 [0.94-2.12]	0.75 [0.52-1.13]	-1.61	0.14 [0.13-0.19]	0.09 [0.07-0.11]	1583 [1241-2316]	1224 [833-1591]	219 [117-379]	95 [58-162]	1236 [925-1974]	1001 [640-1365]	128 [115-171]	127 [80-146]
Ghana	★☆☆☆☆	-0.37	3.98 [2.81-8.31]	3.61 [2.62-7.08]	0.55	1.68 [0.75-5.73]	1.94 [1.06-5.54]	-1.03	0.66 [0.47-0.93]	0.51 [0.33-0.68]	-1.29	1.64 [1.3-2.3]	1.17 [0.81-1.43]	438 [288-1010]	835 [575-1761]	221 [99-745]	518 [283-1461]	53 [38-75]	87 [58-122]	163 [121-234]	230 [160-293]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	**Data quality**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**
Greece	★★★★☆	-0.85	1.6 [1.31-2.1]	1.28 [0.93-1.62]	-1.22	0.5 [0.23-0.72]	0.36 [0.16-0.5]	-0.18	0.85 [0.7-1.41]	0.81 [0.59-1.16]	-3.16	0.26 [0.19-0.28]	0.11 [0.09-0.13]	174 [141-221]	166 [116-204]	53 [24-75]	41 [17-58]	94 [78-152]	110 [76-145]	27 [21-30]	15 [13-17]
Greenland	★★★☆☆	-3.17	59.01 [40.43-75.38]	25.89 [19.33-36.7]	-2.77	6.16 [2.94-8.14]	3.0 [1.76-4.13]	-3.07	48.94 [32.87-65.3]	22.01 [15.86-32.63]	-5.71	3.91 [1.32-5.36]	0.89 [0.57-1.2]	29 [19-38]	13 [9-18]	3 [2-5]	2 [1-2]	24 [15-32]	11 [8-16]	2 [1-3]	0 [0-1]
Grenada	★★★★☆	0.79	2.08 [1.6-3.2]	2.55 [1.82-3.58]	3.94	0.42 [0.2-1.27]	1.17 [0.51-2.03]	0.71	0.1 [0.06-0.15]	0.12 [0.08-0.18]	-0.83	1.56 [1.26-2.09]	1.26 [0.95-1.62]	2 [1-3]	3 [2-4]	0 [0-1]	1 [1-2]	0 [0-0]	0 [0-0]	1 [1-2]	1 [1-2]
Guam	★★★☆☆	-1.83	5.06 [3.28-6.31]	3.14 [2.34-4.39]	-1.07	1.69 [0.89-2.28]	1.28 [0.84-2.0]	-2.1	2.66 [1.57-3.49]	1.54 [1.0-2.3]	-3.04	0.71 [0.42-0.93]	0.32 [0.24-0.51]	7 [4-8]	5 [4-8]	2 [1-3]	2 [1-3]	3 [2-5]	3 [2-4]	1 [0-1]	1 [0-1]
Guatemala	★★★★☆	1.67	20.94 [12.99-36.73]	32.32 [16.66-45.74]	1.76	17.7 [10.23-33.34]	27.96 [13.33-40.71]	-3.1	1.7 [0.99-2.35]	0.76 [0.47-1.46]	3.26	1.54 [1.23-2.74]	3.59 [0.87-5.02]	1490 [902-2662]	5087 [2654-7247]	1270 [710-2451]	4430 [2148-6478]	107 [64-153]	107 [63-216]	113 [89-223]	550 [138-775]
Guinea	★☆☆☆☆	0.53	4.36 [3.29-6.28]	5.01 [3.62-6.72]	2.32	0.98 [0.6-1.89]	1.79 [1.18-2.5]	0.36	1.42 [0.77-2.42]	1.56 [0.72-2.85]	-0.65	1.96 [1.48-2.63]	1.65 [1.11-2.19]	205 [153-306]	480 [355-638]	55 [33-106]	212 [143-297]	44 [24-83]	106 [47-196]	106 [74-158]	162 [110-217]
Guinea-Bissau	★☆☆☆☆	-0.01	7.43 [5.31-10.4]	7.42 [5.3-10.03]	0.88	2.5 [1.65-3.97]	3.15 [2.01-4.32]	0.02	2.01 [0.97-3.39]	2.02 [0.83-4.21]	-1.01	2.92 [2.03-3.94]	2.25 [1.4-2.93]	61 [42-85]	109 [79-145]	23 [15-37]	54 [35-76]	12 [6-21]	22 [9-46]	26 [16-37]	33 [20-44]
Guyana	★★★★☆	2.08	6.23 [4.11-13.53]	10.68 [6.03-14.23]	2.65	4.58 [2.52-11.7]	9.11 [4.49-12.57]	0.09	0.59 [0.46-0.84]	0.61 [0.37-0.77]	-0.37	1.06 [0.93-1.42]	0.96 [0.73-1.17]	46 [29-98]	79 [45-105]	35 [19-88]	68 [34-93]	3 [3-5]	4 [3-5]	7 [6-10]	7 [5-8]
Haiti	★☆☆☆☆	-2.03	11.2 [7.95-14.79]	6.61 [4.45-9.3]	-1.85	6.04 [2.62-9.17]	3.74 [2.23-5.87]	-1.94	1.16 [0.45-2.08]	0.7 [0.32-1.29]	-2.35	4.0 [2.45-5.99]	2.17 [1.34-3.3]	723 [506-959]	734 [486-1046]	399 [174-604]	434 [257-680]	64 [23-118]	67 [29-128]	261 [152-387]	233 [141-357]
Honduras	★★☆☆☆	-0.2	23.71 [16.7-34.86]	22.53 [14.38-33.48]	-0.1	22.14 [15.39-32.94]	21.58 [13.71-32.12]	-1.79	1.26 [0.71-1.93]	0.79 [0.4-1.33]	-2.57	0.32 [0.2-0.43]	0.16 [0.09-0.25]	919 [648-1342]	1775 [1116-2685]	864 [602-1275]	1712 [1077-2587]	41 [24-63]	51 [26-86]	14 [9-19]	13 [7-20]
Hungary	★★★★★	-1.71	1.11 [0.87-1.57]	0.71 [0.48-0.98]	-3.38	0.26 [0.16-0.52]	0.11 [0.07-0.2]	-1.16	0.74 [0.48-1.15]	0.54 [0.32-0.82]	-2.5	0.11 [0.1-0.13]	0.06 [0.04-0.07]	122 [96-173]	90 [60-124]	28 [17-56]	12 [8-23]	82 [53-130]	71 [42-104]	12 [11-14]	8 [5-9]
Iceland	★★★★★	-2.61	2.71 [2.03-3.63]	1.37 [1.0-2.07]	-3.56	0.18 [0.06-0.31]	0.07 [0.03-0.13]	-2.54	2.42 [1.7-3.3]	1.25 [0.87-1.97]	-2.69	0.11 [0.1-0.12]	0.05 [0.05-0.06]	7 [5-9]	5 [4-8]	0 [0-1]	0 [0-0]	6 [4-8]	5 [3-7]	0 [0-0]	0 [0-0]
India	★★☆☆☆	-1.42	2.98 [2.08-4.12]	2.06 [1.42-2.61]	-0.66	1.07 [0.5-1.38]	0.9 [0.48-1.19]	-1.67	1.55 [0.72-2.64]	1.0 [0.59-1.48]	-3.23	0.36 [0.24-0.46]	0.15 [0.13-0.18]	22509 [15336-31246]	26550 [18302-33913]	7885 [3747-10359]	11565 [6188-15424]	12463 [5908-20892]	13447 [7698-19834]	2161 [1379-2729]	1538 [1301-1758]
Indonesia	★★☆☆☆	-1.35	0.52 [0.36-0.71]	0.37 [0.27-0.5]	0.05	0.1 [0.06-0.19]	0.1 [0.07-0.17]	-1.23	0.3 [0.14-0.47]	0.22 [0.12-0.33]	-3.54	0.12 [0.08-0.14]	0.05 [0.04-0.06]	797 [546-1104]	890 [642-1206]	171 [108-322]	264 [194-464]	436 [190-708]	521 [293-791]	190 [124-223]	105 [95-123]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	Data quality	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	1990	2016	1990	2016	1990	2016	1990	2016
Iran	★★★☆☆	-0.88	1.37 [0.9-1.91]	1.09 [0.73-1.47]	-0.68	0.86 [0.44-1.27]	0.72 [0.42-1.03]	-2.29	0.44 [0.3-0.72]	0.24 [0.17-0.35]	2.23	0.07 [0.04-0.15]	0.13 [0.04-0.18]	614 [393-846]	945 [615-1276]	402 [206-595]	655 [368-925]	184 [122-283]	191 [132-281]	28 [16-70]	100 [34-142]
Iraq	★☆☆☆☆	-0.49	11.11 [8.37-14.11]	9.79 [6.66-13.32]	0.28	4.45 [3.01-6.28]	4.79 [2.91-7.15]	-0.21	1.96 [1.41-2.77]	1.86 [1.11-2.71]	-1.55	4.69 [3.13-6.58]	3.14 [1.89-4.47]	1518 [1165-1933]	3242 [2165-4412]	657 [445-922]	1687 [1018-2510]	231 [166-323]	549 [317-824]	630 [450-860]	1006 [612-1437]
Ireland	★★★★★	-2.31	1.32 [0.86-1.68]	0.72 [0.42-1.02]	-0.28	0.18 [0.07-0.28]	0.17 [0.04-0.27]	-2.65	0.96 [0.6-1.28]	0.48 [0.29-0.75]	-3.55	0.17 [0.11-0.2]	0.07 [0.05-0.08]	46 [30-58]	35 [21-49]	6 [3-10]	8 [2-12]	33 [21-44]	24 [14-36]	6 [4-7]	3 [3-4]
Israel	★★★★☆	-1.91	3.49 [2.58-4.38]	2.13 [1.26-2.95]	-0.03	1.0 [0.53-1.6]	0.99 [0.29-1.61]	-2.86	2.02 [1.43-2.95]	0.96 [0.64-1.46]	-3.85	0.47 [0.3-0.56]	0.17 [0.13-0.22]	149 [108-186]	169 [101-233]	43 [23-70]	77 [23-125]	85 [59-124]	77 [52-117]	21 [13-24]	14 [11-18]
Italy	★★★★★	-2.98	2.54 [1.63-3.06]	1.17 [0.83-1.52]	-4.77	1.25 [0.34-1.74]	0.36 [0.17-0.49]	-1.87	1.11 [0.85-1.85]	0.68 [0.44-1.1]	-1.38	0.18 [0.16-0.22]	0.13 [0.07-0.15]	1606 [1037-1932]	974 [620-1228]	746 [202-1037]	228 [106-304]	746 [578-1177]	621 [386-889]	114 [103-142]	124 [61-144]
Jamaica	★★★☆☆	1.86	11.15 [8.43-13.27]	18.09 [10.72-23.97]	1.79	10.08 [7.4-12.13]	16.03 [9.65-21.23]	4.43	0.13 [0.09-0.26]	0.4 [0.18-0.54]	2.18	0.94 [0.7-1.12]	1.66 [0.65-2.38]	249 [193-297]	533 [320-705]	226 [170-273]	473 [289-625]	2 [2-5]	12 [5-16]	21 [15-25]	49 [19-70]
Japan	★★★★☆	-1.39	0.26 [0.22-0.34]	0.18 [0.13-0.22]	-2.12	0.06 [0.03-0.1]	0.03 [0.02-0.06]	-1.95	0.15 [0.11-0.2]	0.09 [0.06-0.12]	0.21	0.06 [0.05-0.08]	0.06 [0.04-0.07]	346 [293-443]	455 [299-521]	73 [39-132]	49 [26-84]	200 [149-277]	211 [146-282]	73 [68-104]	195 [100-215]
Jordan	★★☆☆☆	-0.6	3.25 [2.55-4.57]	2.78 [1.74-3.83]	0.06	2.11 [1.54-3.0]	2.15 [1.16-3.07]	-1.57	0.35 [0.24-0.63]	0.23 [0.16-0.39]	-2.6	0.79 [0.58-1.27]	0.4 [0.31-0.52]	88 [68-121]	199 [125-279]	60 [42-82]	160 [86-231]	7 [4-14]	14 [9-25]	21 [15-34]	26 [19-34]
Kazakhstan	★★★★☆	-1.16	2.52 [1.83-3.82]	1.87 [1.3-3.01]	-1.36	1.22 [0.54-2.46]	0.86 [0.44-2.07]	-1.16	0.62 [0.4-0.97]	0.46 [0.3-0.69]	-0.82	0.68 [0.56-0.89]	0.55 [0.38-0.69]	403 [286-624]	337 [232-551]	203 [89-410]	158 [80-389]	91 [58-144]	82 [53-124]	109 [89-143]	97 [67-122]
Kenya	★☆☆☆☆	0.04	3.13 [1.85-4.87]	3.16 [2.29-4.25]	1.29	1.16 [0.56-2.18]	1.63 [1.0-2.89]	-0.08	0.65 [0.31-1.62]	0.64 [0.39-1.31]	-1.48	1.31 [0.71-3.21]	0.89 [0.58-1.61]	459 [273-720]	1086 [775-1551]	194 [94-379]	607 [375-1136]	67 [36-169]	170 [104-319]	198 [102-477]	309 [195-553]
Kiribati	★★☆☆☆	-2.34	2.19 [1.12-3.07]	1.19 [0.84-1.58]	-2.89	1.44 [0.26-2.32]	0.68 [0.29-1.06]	-1.11	0.3 [0.22-0.44]	0.22 [0.13-0.36]	-1.74	0.46 [0.37-0.7]	0.29 [0.2-0.46]	1 [1-2]	1 [1-2]	1 [0-2]	1 [0-1]	0 [0-0]	0 [0-0]	0 [0-0]	0 [0-0]
Kuwait	★★★★☆	-1.98	0.83 [0.48-1.18]	0.49 [0.29-0.86]	-2.36	0.58 [0.22-0.92]	0.31 [0.16-0.66]	-0.21	0.14 [0.1-0.23]	0.14 [0.07-0.22]	-3.28	0.11 [0.07-0.13]	0.05 [0.03-0.06]	15 [8-22]	19 [11-36]	11 [4-18]	14 [7-30]	2 [1-3]	4 [2-7]	1 [1-2]	1 [1-1]
Kyrgyzstan	★★★★☆	-2.49	2.61 [1.67-3.39]	1.36 [1.02-2.05]	-3.18	1.46 [0.51-2.26]	0.64 [0.33-1.34]	-2.57	0.55 [0.35-0.82]	0.28 [0.19-0.49]	-1.13	0.59 [0.5-0.76]	0.44 [0.31-0.53]	99 [63-133]	76 [54-117]	58 [21-92]	38 [19-80]	19 [12-28]	15 [9-25]	22 [18-28]	23 [17-28]
Laos	★☆☆☆☆	-3.68	3.05 [1.85-4.91]	1.17 [0.62-2.07]	-1.99	0.21 [0.09-0.33]	0.13 [0.07-0.25]	-2.51	1.21 [0.2-2.54]	0.63 [0.16-1.45]	-5.27	1.62 [0.86-2.88]	0.41 [0.25-0.98]	107 [62-162]	72 [37-126]	8 [3-13]	9 [5-18]	40 [6-83]	37 [9-86]	59 [29-95]	26 [15-61]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	Data quality	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	1990	2016	1990	2016	1990	2016	1990	2016
Latvia	★★★★★	-2.51	3.28 [2.19-4.43]	1.71 [1.23-2.36]	-4.46	1.33 [0.37-2.2]	0.42 [0.19-0.76]	-1.32	1.51 [1.0-2.23]	1.07 [0.67-1.73]	-2.68	0.44 [0.37-0.52]	0.22 [0.18-0.27]	91 [61-123]	41 [30-56]	36 [10-59]	9 [4-15]	43 [29-64]	27 [17-42]	12 [10-14]	6 [4-7]
Lebanon	★☆☆☆☆	-3.47	3.47 [1.98-5.62]	1.41 [0.8-2.24]	-3.28	2.85 [1.35-5.09]	1.21 [0.58-2.01]	-4.17	0.24 [0.09-0.52]	0.08 [0.04-0.19]	-4.78	0.38 [0.18-0.66]	0.11 [0.07-0.17]	90 [51-149]	91 [50-146]	75 [35-136]	80 [38-133]	6 [2-12]	5 [2-12]	9 [4-16]	6 [4-10]
Lesotho	☆☆☆☆☆	1.18	6.51 [3.19-10.62]	8.85 [3.24-14.83]	1.87	3.49 [1.09-6.26]	5.67 [1.31-10.8]	0.2	1.89 [0.61-4.57]	1.99 [0.7-4.91]	0.18	1.13 [0.56-2.02]	1.19 [0.66-1.77]	78 [39-125]	172 [62-288]	46 [14-85]	118 [26-227]	18 [6-41]	32 [13-71]	13 [6-25]	21 [12-33]
Liberia	★☆☆☆☆	-0.04	4.74 [3.75-6.13]	4.69 [3.13-6.18]	1.11	1.17 [0.71-1.71]	1.56 [0.76-2.18]	0.52	1.69 [0.93-2.94]	1.93 [0.88-3.28]	-1.76	1.88 [1.37-2.54]	1.19 [0.78-1.55]	75 [56-97]	148 [99-187]	23 [14-34]	67 [32-95]	16 [9-29]	42 [19-70]	36 [23-52]	39 [25-52]
Libya	★☆☆☆☆	-0.5	1.5 [1.07-2.11]	1.32 [0.84-1.88]	0.2	0.78 [0.38-1.37]	0.83 [0.4-1.36]	-0.59	0.26 [0.15-0.56]	0.22 [0.1-0.38]	-2.02	0.46 [0.32-0.64]	0.27 [0.13-0.39]	54 [38-78]	82 [51-119]	30 [15-53]	54 [26-90]	8 [4-18]	13 [6-22]	17 [11-23]	15 [7-22]
Lithuania	★★★★★	-2.16	2.68 [1.73-3.45]	1.53 [1.16-2.22]	-3.74	1.25 [0.45-1.97]	0.47 [0.27-1.1]	-0.64	0.97 [0.63-1.39]	0.82 [0.49-1.16]	-2.58	0.46 [0.32-0.57]	0.24 [0.21-0.28]	102 [66-132]	51 [39-71]	47 [17-75]	14 [8-31]	38 [24-54]	29 [18-40]	18 [12-22]	8 [7-10]
Luxembourg	★★★★☆	-3.51	3.05 [2.38-4.01]	1.23 [0.85-1.8]	-4.29	0.56 [0.28-0.8]	0.18 [0.1-0.28]	-3.38	2.31 [1.74-3.33]	0.96 [0.6-1.53]	-2.98	0.18 [0.16-0.2]	0.08 [0.07-0.1]	13 [10-17]	9 [6-13]	2 [1-3]	1 [1-2]	10 [8-14]	7 [4-11]	1 [1-1]	1 [1-1]
Macedonia	★★★☆☆	0.15	2.0 [1.57-2.54]	2.08 [1.25-2.5]	0.5	0.9 [0.56-1.27]	1.02 [0.49-1.29]	0.29	0.78 [0.57-1.22]	0.84 [0.44-1.08]	-1.47	0.33 [0.28-0.42]	0.22 [0.15-0.27]	40 [31-51]	49 [29-59]	19 [12-26]	24 [11-30]	15 [11-24]	20 [10-26]	6 [5-8]	5 [3-6]
Madagascar	★☆☆☆☆	-0.37	2.35 [1.81-3.12]	2.13 [1.51-2.92]	2.46	0.22 [0.13-0.35]	0.41 [0.15-0.67]	-0.63	1.18 [0.8-1.76]	1.01 [0.64-1.48]	-1.09	0.95 [0.69-1.28]	0.72 [0.51-1.0]	173 [133-238]	378 [256-533]	22 [13-34]	95 [33-159]	75 [50-116]	156 [96-232]	76 [51-109]	127 [85-189]
Malawi	★☆☆☆☆	0.02	2.41 [1.55-4.11]	2.42 [1.62-3.85]	0.92	0.43 [0.17-1.48]	0.54 [0.23-1.96]	0.38	1.13 [0.69-2.06]	1.25 [0.69-2.22]	-1.17	0.84 [0.56-1.25]	0.62 [0.39-0.88]	140 [85-268]	275 [178-478]	36 [16-122]	84 [37-284]	52 [30-97]	120 [64-210]	52 [33-81]	72 [42-108]
Malaysia	★★☆☆☆	-2.51	2.13 [1.78-2.67]	1.11 [0.88-1.51]	-0.63	0.5 [0.31-0.93]	0.42 [0.26-0.75]	-2.23	0.55 [0.4-1.02]	0.31 [0.21-0.48]	-4.04	1.08 [0.68-1.41]	0.38 [0.27-0.48]	285 [236-393]	321 [252-455]	88 [53-161]	142 [85-252]	73 [52-143]	87 [62-146]	125 [89-162]	92 [69-120]
Maldives	★★☆☆☆	-4.81	1.36 [0.84-1.78]	0.39 [0.26-0.53]	-0.62	0.14 [0.07-0.32]	0.12 [0.05-0.2]	-5.11	0.56 [0.26-0.95]	0.15 [0.08-0.22]	-6.57	0.65 [0.33-0.96]	0.12 [0.09-0.15]	2 [1-3]	1 [1-2]	0 [0-1]	0 [0-1]	1 [0-1]	0 [0-1]	1 [1-1]	0 [0-0]
Mali	★☆☆☆☆	-0.76	5.02 [3.36-7.34]	4.12 [2.82-6.44]	0.59	1.08 [0.59-2.04]	1.25 [0.78-1.87]	-0.62	1.56 [0.83-2.83]	1.33 [0.63-2.61]	-1.69	2.38 [1.58-3.52]	1.54 [0.88-2.78]	337 [210-505]	516 [367-730]	81 [43-153]	199 [121-304]	68 [36-130]	106 [48-214]	188 [110-290]	212 [119-354]
Malta	★★★★★	-1.86	1.76 [1.3-2.17]	1.08 [0.79-1.5]	-1.9	0.69 [0.32-1.04]	0.42 [0.21-0.67]	-1.89	0.78 [0.58-1.1]	0.48 [0.31-0.79]	-1.71	0.29 [0.25-0.34]	0.18 [0.14-0.23]	6 [5-8]	5 [4-7]	3 [1-4]	2 [1-3]	3 [2-4]	3 [2-4]	1 [1-1]	1 [1-1]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	Data quality	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	1990	2016	1990	2016	1990	2016	1990	2016
Marshall Islands	☆☆☆☆☆	-1.93	5.15 [2.66-6.89]	3.12 [1.67-4.67]	-0.79	1.75 [0.64-2.72]	1.42 [0.62-2.26]	-2.4	2.12 [0.83-3.46]	1.14 [0.4-2.44]	-3.21	1.28 [0.76-1.82]	0.56 [0.42-0.74]	2 [1-3]	2 [1-3]	1 [0-1]	1 [0-2]	1 [0-1]	1 [0-2]	0 [0-1]	0 [0-0]
Mauritania	☆☆☆☆☆	-1.24	3.75 [2.67-5.33]	2.72 [1.66-4.38]	0.13	1.07 [0.64-2.01]	1.11 [0.53-1.8]	-1.45	1.23 [0.7-2.1]	0.85 [0.38-1.99]	-2.46	1.44 [1.02-1.96]	0.76 [0.47-1.16]	53 [37-79]	85 [50-134]	20 [12-37]	44 [21-70]	12 [7-23]	19 [8-47]	21 [14-29]	23 [13-35]
Mauritius	★★★★☆	-2.23	0.72 [0.48-1.11]	0.4 [0.28-0.72]	-2.43	0.42 [0.18-0.83]	0.22 [0.12-0.5]	-1.02	0.17 [0.11-0.24]	0.13 [0.08-0.2]	-3.76	0.13 [0.12-0.16]	0.05 [0.04-0.08]	7 [4-11]	6 [4-10]	4 [2-9]	3 [2-7]	2 [1-2]	2 [1-3]	1 [1-1]	1 [0-1]
Mexico	★★★★☆	-1.14	15.88 [9.94-20.11]	11.81 [6.67-14.63]	-0.68	12.54 [6.4-16.83]	10.51 [5.31-13.29]	-1.76	1.11 [0.86-1.62]	0.7 [0.48-1.01]	-5.13	2.23 [1.55-2.45]	0.59 [0.52-0.8]	11715 [7484-14836]	15422 [8677-18923]	9249 [4803-12412]	13841 [6961-17293]	755 [603-1108]	841 [570-1236]	1710 [1163-1893]	740 [655-1013]
Moldova	★★★★★	-3.89	2.37 [1.47-3.57]	0.86 [0.64-1.32]	-4.83	1.15 [0.34-2.28]	0.33 [0.17-0.76]	-1.94	0.53 [0.33-0.75]	0.32 [0.2-0.46]	-4.49	0.69 [0.52-0.81]	0.21 [0.17-0.28]	102 [64-154]	40 [30-62]	50 [15-99]	15 [8-36]	23 [14-32]	15 [10-22]	29 [22-35]	10 [8-13]
Mongolia	★★☆☆☆	-1.79	1.8 [1.23-2.6]	1.13 [0.81-1.5]	-0.68	0.28 [0.1-0.57]	0.23 [0.09-0.42]	-0.86	0.88 [0.54-1.59]	0.71 [0.35-1.02]	-4.69	0.63 [0.4-0.86]	0.19 [0.14-0.31]	33 [22-47]	35 [24-48]	6 [2-12]	8 [3-14]	15 [8-27]	22 [10-32]	12 [7-17]	5 [4-9]
Montenegro	★★☆☆☆	-0.91	6.47 [5.54-8.23]	5.1 [4.16-6.48]	-0.97	2.08 [1.55-2.82]	1.62 [1.19-2.32]	-0.42	2.74 [2.17-4.24]	2.46 [1.67-3.62]	-1.83	1.64 [1.37-2.03]	1.02 [0.82-1.25]	40 [34-51]	36 [29-45]	13 [10-18]	11 [8-16]	17 [13-26]	18 [12-26]	10 [8-12]	7 [6-9]
Morocco	★☆☆☆☆	-0.52	1.09 [0.68-1.73]	0.95 [0.65-1.39]	2.91	0.21 [0.09-0.49]	0.46 [0.22-0.84]	-0.61	0.17 [0.05-0.38]	0.15 [0.05-0.3]	-2.7	0.71 [0.45-1.21]	0.35 [0.22-0.56]	240 [148-380]	327 [219-480]	51 [21-115]	167 [80-305]	30 [10-71]	46 [18-93]	159 [99-267]	114 [72-181]
Mozambique	★☆☆☆☆	-0.74	4.48 [3.3-5.61]	3.69 [2.14-5.05]	0.58	1.31 [0.86-2.29]	1.53 [0.69-2.42]	-1.13	1.58 [1.02-2.44]	1.18 [0.74-1.83]	-1.82	1.59 [0.63-2.24]	0.99 [0.36-1.52]	420 [288-539]	797 [419-1104]	152 [98-259]	390 [165-620]	115 [71-184]	199 [120-312]	153 [55-221]	208 [63-333]
Myanmar	★☆☆☆☆	-3.22	2.56 [1.86-3.24]	1.11 [0.78-1.67]	-2.84	1.11 [0.4-1.67]	0.53 [0.3-1.02]	-1.5	0.45 [0.14-0.73]	0.3 [0.14-0.46]	-4.96	1.0 [0.77-1.39]	0.28 [0.19-0.56]	961 [662-1248]	591 [411-898]	452 [155-694]	306 [166-589]	149 [44-249]	152 [67-240]	360 [267-493]	132 [90-277]
Namibia	☆☆☆☆☆	-1.98	6.52 [3.62-8.98]	3.9 [2.37-5.65]	-1.92	3.29 [0.97-5.68]	2.0 [0.65-3.56]	-2.01	2.14 [1.37-3.57]	1.27 [0.71-2.33]	-2.09	1.09 [0.53-2.3]	0.64 [0.37-0.96]	69 [36-98]	84 [49-126]	39 [11-69]	47 [14-85]	19 [12-36]	24 [12-49]	11 [5-24]	13 [8-20]
Nepal	★☆☆☆☆	-2.29	2.44 [1.42-3.96]	1.34 [0.81-2.09]	1.46	0.26 [0.11-0.39]	0.39 [0.1-0.65]	-3.03	1.75 [0.68-3.33]	0.8 [0.47-1.4]	-3.72	0.42 [0.24-0.74]	0.16 [0.11-0.24]	386 [211-632]	364 [211-576]	43 [17-66]	110 [27-188]	290 [111-545]	222 [128-386]	53 [30-92]	32 [22-49]
Netherlands	★★★★☆	-1.18	0.79 [0.56-0.96]	0.58 [0.33-0.73]	-1.77	0.32 [0.11-0.45]	0.2 [0.06-0.28]	-1.21	0.4 [0.3-0.6]	0.29 [0.18-0.41]	0.83	0.07 [0.06-0.09]	0.09 [0.04-0.1]	132 [94-160]	126 [71-157]	53 [18-74]	35 [11-47]	67 [52-102]	68 [41-91]	12 [11-14]	24 [9-28]
New Zealand	★★★★★	-3.74	2.83 [1.91-3.26]	1.07 [0.81-1.54]	-4.17	0.44 [0.19-0.66]	0.15 [0.09-0.28]	-3.51	2.14 [1.39-2.59]	0.86 [0.6-1.28]	-5.28	0.25 [0.17-0.28]	0.06 [0.05-0.09]	99 [67-114]	55 [41-79]	15 [7-23]	7 [4-13]	75 [48-91]	45 [31-66]	9 [6-10]	3 [3-4]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	Data quality	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	1990	2016	1990	2016	1990	2016	1990	2016
Nicaragua	★★★☆☆	-0.73	7.39 [5.23-9.04]	6.12 [4.18-8.14]	-0.29	5.59 [3.57-7.32]	5.18 [3.36-7.1]	-0.74	0.56 [0.33-0.75]	0.46 [0.28-0.66]	-3.7	1.24 [0.88-1.47]	0.48 [0.33-0.64]	267 [186-323]	382 [259-511]	201 [127-261]	328 [212-447]	17 [10-22]	26 [15-37]	49 [33-58]	29 [20-39]
Niger	★☆☆☆☆	-0.09	5.23 [3.74-7.56]	5.11 [3.5-7.44]	1.28	1.1 [0.59-2.17]	1.53 [0.99-2.23]	0.11	1.52 [0.72-2.61]	1.56 [0.7-2.68]	-0.99	2.62 [1.8-3.87]	2.02 [1.13-3.77]	338 [213-532]	691 [494-961]	79 [41-154]	248 [158-362]	54 [26-103]	144 [64-257]	205 [115-348]	299 [169-500]
Nigeria	★☆☆☆☆	-1.66	2.71 [1.73-4.5]	1.76 [1.17-2.97]	-0.23	0.33 [0.21-0.51]	0.31 [0.18-0.47]	-1.96	1.02 [0.35-2.38]	0.61 [0.25-1.28]	-1.86	1.36 [0.76-2.23]	0.84 [0.37-1.64]	1824 [1125-2626]	2285 [1483-3609]	300 [191-459]	565 [319-862]	414 [160-910]	502 [209-1092]	1109 [532-1712]	1218 [546-2205]
North Korea	☆☆☆☆☆	-0.54	0.58 [0.47-0.78]	0.51 [0.33-0.93]	0.6	0.11 [0.06-0.22]	0.13 [0.07-0.32]	0.49	0.2 [0.13-0.4]	0.23 [0.11-0.47]	-2.31	0.27 [0.18-0.38]	0.15 [0.11-0.24]	109 [86-148]	130 [82-243]	23 [13-45]	36 [18-87]	39 [23-78]	61 [29-125]	47 [29-69]	34 [23-57]
Northern Mariana Islands	★★★☆☆	-1.49	4.05 [2.75-5.34]	2.75 [1.99-3.8]	-0.73	1.59 [0.86-2.47]	1.31 [0.82-2.29]	-1.65	1.04 [0.53-1.7]	0.68 [0.37-1.0]	-2.4	1.42 [1.03-1.89]	0.76 [0.6-0.99]	2 [1-2]	3 [2-5]	1 [0-1]	2 [1-3]	0 [0-1]	1 [0-1]	0 [0-0]	0 [0-1]
Norway	★★★★★	-4.23	4.44 [2.87-5.43]	1.48 [1.01-2.24]	-3.99	0.36 [0.15-0.5]	0.13 [0.07-0.21]	-4.29	3.96 [2.49-4.91]	1.3 [0.84-2.04]	-3.32	0.12 [0.09-0.14]	0.05 [0.04-0.06]	204 [134-251]	93 [64-138]	16 [7-22]	7 [4-11]	183 [118-227]	82 [54-129]	6 [4-6]	4 [2-4]
Oman	★★☆☆☆	-2.43	0.42 [0.27-0.72]	0.22 [0.17-0.32]	-0.4	0.06 [0.02-0.15]	0.06 [0.03-0.12]	-2.21	0.24 [0.11-0.5]	0.13 [0.08-0.2]	-5.15	0.12 [0.06-0.26]	0.03 [0.02-0.04]	5 [3-10]	10 [7-15]	1 [0-2]	3 [2-7]	3 [1-6]	6 [3-10]	1 [1-3]	1 [1-1]
Pakistan	★☆☆☆☆	-0.2	1.59 [0.98-2.1]	1.51 [0.8-2.28]	0.63	0.73 [0.24-1.13]	0.86 [0.26-1.4]	-0.3	0.54 [0.25-0.94]	0.5 [0.22-0.82]	-2.9	0.32 [0.17-0.66]	0.15 [0.11-0.2]	1429 [863-1928]	2783 [1407-4280]	691 [212-1111]	1652 [467-2761]	501 [226-887]	931 [403-1535]	237 [132-481]	200 [146-269]
Palestine	★★☆☆☆	1.07	2.12 [1.58-2.97]	2.8 [1.71-3.49]	1.96	1.24 [0.79-1.94]	2.06 [0.97-2.77]	0.32	0.26 [0.19-0.48]	0.28 [0.17-0.45]	-1.19	0.62 [0.48-0.87]	0.46 [0.38-0.58]	36 [26-51]	121 [68-158]	23 [14-35]	99 [43-139]	3 [2-6]	9 [5-15]	9 [7-14]	13 [10-21]
Panama	★★★★☆	1.47	7.49 [4.82-11.06]	10.98 [4.1-16.07]	1.97	6.28 [3.49-9.81]	10.49 [3.58-15.54]	-3.07	0.7 [0.42-0.97]	0.32 [0.21-0.55]	-4.01	0.51 [0.41-0.58]	0.18 [0.13-0.31]	177 [109-252]	450 [165-660]	152 [82-228]	430 [145-640]	14 [8-19]	12 [8-21]	11 [9-13]	7 [5-12]
Papua New Guinea	★☆☆☆☆	-1.82	7.24 [4.07-11.48]	4.5 [2.81-6.93]	-0.77	1.93 [0.77-3.31]	1.58 [0.73-2.77]	-1.9	2.71 [0.5-6.25]	1.66 [0.36-3.66]	-2.76	2.59 [1.51-3.54]	1.26 [0.86-1.73]	250 [139-388]	315 [190-483]	73 [30-124]	121 [57-213]	95 [16-217]	118 [25-261]	83 [48-118]	76 [50-107]
Paraguay	★★★☆☆	1.18	7.91 [6.67-11.5]	10.74 [8.54-14.29]	1.48	6.07 [4.73-9.65]	8.92 [6.94-12.26]	0.75	1.15 [0.89-1.62]	1.4 [0.84-1.8]	-1.85	0.69 [0.51-0.87]	0.43 [0.3-0.53]	290 [242-429]	716 [566-965]	225 [173-365]	602 [463-835]	37 [28-49]	86 [50-111]	28 [20-35]	28 [19-35]
Peru	★★★☆☆	-1.32	4.08 [3.21-5.75]	2.9 [1.93-3.89]	-0.89	2.11 [1.4-3.19]	1.68 [1.05-2.41]	-3.07	0.35 [0.22-0.45]	0.16 [0.11-0.25]	-1.62	1.62 [1.24-2.82]	1.06 [0.59-1.5]	818 [637-1169]	925 [610-1245]	429 [283-651]	542 [342-782]	57 [36-73]	46 [32-75]	332 [250-588]	337 [183-479]
Philippines	★★★★☆	0.57	7.21 [4.53-11.24]	8.35 [3.44-11.38]	1.38	5.49 [3.08-9.62]	7.85 [2.81-10.92]	-5.98	1.01 [0.34-1.4]	0.21 [0.13-0.45]	-3.55	0.71 [0.45-0.81]	0.28 [0.23-0.35]	3730 [2441-5987]	8022 [3283-10979]	2938 [1761-5255]	7600 [2787-10568]	447 [158-667]	183 [111-383]	345 [225-395]	239 [193-299]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	Data quality	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	1990	2016	1990	2016	1990	2016	1990	2016
Poland	★★★★☆	-3.5	1.13 [0.9-1.55]	0.46 [0.37-0.7]	-4.41	0.43 [0.2-0.79]	0.14 [0.08-0.37]	-1.9	0.23 [0.15-0.37]	0.14 [0.08-0.2]	-3.73	0.47 [0.42-0.53]	0.18 [0.16-0.22]	438 [345-598]	217 [180-317]	170 [76-307]	59 [36-152]	89 [57-144]	68 [40-97]	179 [156-199]	89 [77-107]
Portugal	★★★★☆	-2.06	3.03 [2.5-4.21]	1.77 [1.23-2.13]	-3.55	1.03 [0.52-1.51]	0.41 [0.21-0.6]	-0.96	1.39 [1.09-2.41]	1.08 [0.68-1.45]	-3.02	0.61 [0.54-0.9]	0.28 [0.21-0.32]	320 [263-438]	248 [158-297]	105 [52-151]	45 [23-65]	152 [115-253]	160 [88-200]	64 [57-94]	43 [31-49]
Puerto Rico	★★★★☆	-0.49	19.4 [13.28-24.32]	17.07 [9.84-22.38]	-0.36	17.06 [10.66-22.11]	15.52 [8.09-20.84]	-2.92	1.96 [1.31-2.57]	0.92 [0.68-1.76]	1.97	0.37 [0.31-0.72]	0.62 [0.33-0.87]	687 [466-856]	637 [371-833]	607 [376-778]	575 [301-774]	67 [45-88]	39 [29-71]	13 [11-25]	23 [13-32]
Qatar	★★☆☆☆	-4.96	1.29 [0.73-1.77]	0.36 [0.23-0.59]	-3.45	0.36 [0.13-0.53]	0.14 [0.08-0.27]	-4.46	0.39 [0.19-0.56]	0.12 [0.07-0.25]	-7.02	0.54 [0.27-0.75]	0.09 [0.06-0.14]	6 [3-8]	8 [5-15]	2 [1-3]	4 [2-8]	1 [1-2]	3 [2-6]	2 [1-3]	2 [1-3]
Romania	★★★★☆	-3.23	0.67 [0.52-0.85]	0.29 [0.23-0.41]	-3.28	0.2 [0.1-0.35]	0.08 [0.05-0.21]	-1.59	0.12 [0.08-0.19]	0.08 [0.05-0.11]	-3.95	0.35 [0.22-0.41]	0.13 [0.09-0.15]	156 [122-201]	61 [49-88]	46 [23-82]	17 [10-43]	28 [18-45]	18 [11-26]	82 [52-94]	26 [20-31]
Russia	★★★★★	-0.78	3.22 [2.25-5.39]	2.63 [1.6-4.8]	-1.05	1.39 [0.77-3.45]	1.06 [0.45-3.02]	-0.39	1.23 [0.75-1.88]	1.11 [0.63-1.79]	-1.01	0.6 [0.45-0.89]	0.46 [0.32-0.66]	4967 [3452-8323]	4380 [2687-7888]	2128 [1157-5335]	1673 [708-4760]	1916 [1161-2927]	1923 [1104-3106]	922 [688-1378]	785 [542-1107]
Rwanda	★☆☆☆☆	-2.02	3.76 [2.5-5.77]	2.23 [1.57-3.62]	-1.93	1.22 [0.49-1.85]	0.74 [0.4-1.27]	-1.71	1.5 [0.52-3.53]	0.96 [0.51-2.23]	-2.63	1.04 [0.73-1.44]	0.53 [0.37-0.68]	170 [117-244]	195 [136-302]	75 [28-116]	86 [43-148]	49 [16-119]	66 [34-152]	46 [30-69]	43 [29-60]
Saint Lucia	★★★★☆	1.37	6.43 [4.74-11.8]	9.17 [4.66-11.97]	1.85	4.94 [3.25-10.38]	8.0 [3.29-10.77]	-0.96	0.3 [0.19-0.42]	0.23 [0.14-0.35]	-0.89	1.19 [1.03-1.54]	0.94 [0.57-1.12]	8 [6-15]	18 [9-23]	6 [4-13]	16 [6-21]	0 [0-0]	0 [0-1]	1 [1-2]	2 [1-2]
Saint Vincent and the Grenadines	★★★★☆	2.39	5.51 [4.1-10.18]	10.25 [5.25-13.55]	3.7	3.34 [2.01-8.16]	8.74 [3.66-12.07]	-1.92	0.38 [0.29-0.52]	0.23 [0.16-0.34]	-1.3	1.79 [1.55-2.15]	1.28 [1.06-1.65]	6 [4-10]	12 [6-16]	4 [2-8]	10 [4-14]	0 [0-0]	0 [0-0]	2 [1-2]	1 [1-2]
Samoa	☆☆☆☆☆	-2.05	4.07 [2.27-6.33]	2.38 [1.5-3.65]	-1.02	1.19 [0.51-1.88]	0.92 [0.39-1.63]	-2.24	1.67 [0.62-3.28]	0.93 [0.46-1.59]	-3.12	1.2 [0.64-1.85]	0.53 [0.32-0.8]	5 [3-9]	4 [2-6]	2 [1-3]	2 [1-3]	2 [1-4]	2 [1-3]	1 [1-2]	1 [0-1]
Sao Tome and Principe	★☆☆☆☆	-0.59	5.11 [3.9-6.67]	4.39 [2.6-5.91]	0.51	2.38 [1.34-3.6]	2.72 [1.24-4.06]	-0.22	0.31 [0.21-0.55]	0.3 [0.17-0.47]	-2.18	2.41 [1.91-3.03]	1.37 [0.91-1.86]	5 [4-7]	7 [4-10]	2 [1-4]	5 [2-8]	0 [0-0]	0 [0-1]	3 [2-3]	2 [1-3]
Saudi Arabia	★★☆☆☆	-3.81	2.58 [1.58-5.09]	0.96 [0.53-1.23]	1.97	0.08 [0.04-0.14]	0.13 [0.06-0.18]	-1.44	0.25 [0.14-0.52]	0.17 [0.08-0.3]	-4.74	2.25 [1.14-4.83]	0.65 [0.32-0.85]	363 [228-684]	274 [147-357]	11 [6-23]	39 [19-53]	29 [16-63]	48 [22-87]	322 [169-656]	187 [85-249]
Senegal	★☆☆☆☆	-0.31	4.31 [3.28-5.65]	3.98 [2.95-5.26]	0.07	0.79 [0.46-1.1]	0.8 [0.48-1.11]	0.05	1.77 [1.08-2.97]	1.8 [1.14-2.76]	-0.92	1.75 [1.28-2.47]	1.38 [0.88-2.08]	218 [168-284]	413 [309-534]	51 [30-73]	116 [68-163]	64 [37-120]	142 [86-236]	103 [71-147]	156 [98-236]
Serbia	★★★☆☆	-1.42	5.72 [4.23-6.9]	3.95 [3.27-5.13]	-1.89	1.92 [0.9-2.52]	1.17 [0.74-1.47]	-0.9	3.02 [2.27-4.43]	2.38 [1.77-3.54]	-2.66	0.79 [0.62-0.93]	0.39 [0.34-0.53]	550 [409-672]	397 [328-519]	184 [87-241]	106 [68-137]	292 [221-435]	249 [180-371]	75 [59-89]	41 [36-52]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	**Data quality**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**
Seychelles	★★★☆☆	-3.16	4.87 [2.84-6.16]	2.14 [1.4-3.23]	-2.74	2.54 [1.05-3.61]	1.25 [0.69-2.12]	-3.9	0.82 [0.39-1.35]	0.3 [0.16-0.53]	-3.58	1.5 [0.9-2.0]	0.59 [0.3-0.87]	3 [2-4]	2 [1-3]	2 [1-2]	1 [1-2]	0 [0-1]	0 [0-1]	1 [1-1]	1 [0-1]
Sierra Leone	★☆☆☆☆	-0.3	4.11 [3.09-5.52]	3.8 [2.81-4.83]	0.45	0.75 [0.46-1.1]	0.84 [0.49-1.19]	0.42	1.17 [0.57-2.09]	1.31 [0.61-2.26]	-1.08	2.19 [1.53-2.94]	1.65 [1.08-2.18]	127 [88-172]	181 [133-233]	27 [17-40]	54 [31-77]	24 [12-47]	44 [20-79]	76 [45-111]	83 [51-117]
Singapore	★★★★★	-4.52	0.47 [0.38-0.59]	0.15 [0.11-0.22]	-4.43	0.08 [0.03-0.13]	0.03 [0.02-0.05]	-4.42	0.22 [0.15-0.32]	0.07 [0.05-0.12]	-4.71	0.17 [0.15-0.2]	0.05 [0.04-0.07]	13 [10-16]	7 [5-10]	3 [1-4]	1 [1-2]	6 [4-9]	3 [2-6]	4 [3-5]	2 [2-3]
Slovakia	★★★☆☆	-2.45	3.11 [2.24-3.68]	1.65 [1.3-2.09]	-3.21	0.89 [0.48-1.13]	0.39 [0.27-0.65]	-3.02	1.66 [0.83-2.13]	0.76 [0.47-1.09]	-0.45	0.57 [0.45-0.98]	0.51 [0.34-0.62]	166 [118-196]	107 [82-137]	48 [26-61]	24 [16-40]	88 [43-113]	50 [31-71]	30 [23-52]	34 [22-42]
Slovenia	★★★★☆	-2.11	3.18 [2.34-4.34]	1.84 [1.21-2.57]	-3.59	0.5 [0.32-0.81]	0.2 [0.12-0.35]	-1.69	2.44 [1.66-3.71]	1.57 [0.98-2.33]	-4.87	0.24 [0.19-0.27]	0.07 [0.05-0.08]	69 [51-94]	51 [32-71]	11 [7-17]	4 [3-8]	53 [36-81]	45 [26-64]	5 [4-6]	2 [2-3]
Solomon Islands	☆☆☆☆☆	-1.49	6.33 [3.68-9.31]	4.29 [2.54-6.36]	-0.07	1.49 [0.6-2.67]	1.47 [0.62-2.38]	-1.61	2.6 [0.59-5.0]	1.71 [0.43-3.37]	-2.68	2.24 [1.37-3.16]	1.11 [0.77-1.53]	14 [8-22]	22 [12-32]	4 [2-7]	8 [3-13]	6 [1-12]	9 [2-17]	4 [3-6]	5 [3-7]
Somalia	☆☆☆☆☆	0.76	3.78 [2.57-5.24]	4.61 [3.02-6.32]	2.61	1.05 [0.62-1.71]	2.07 [0.84-3.2]	-0.08	1.41 [0.63-2.26]	1.38 [0.63-2.62]	-0.5	1.32 [0.95-1.87]	1.16 [0.88-1.48]	162 [109-229]	338 [217-468]	56 [33-91]	175 [72-275]	49 [23-82]	81 [38-158]	57 [38-86]	81 [58-108]
South Africa	★★☆☆☆	-2.39	12.81 [6.06-16.91]	6.88 [4.71-9.83]	-2.54	10.72 [4.16-14.6]	5.54 [3.52-8.51]	-1.37	1.26 [0.7-2.69]	0.88 [0.51-1.75]	-2.3	0.83 [0.57-1.06]	0.46 [0.32-0.54]	4457 [2066-5909]	3739 [2483-5343]	3807 [1492-5225]	3055 [1920-4627]	378 [206-763]	447 [261-868]	272 [184-341]	237 [164-282]
South Korea	★★★☆☆	-1.02	0.51 [0.37-1.02]	0.39 [0.23-0.53]	-1.93	0.08 [0.04-0.13]	0.05 [0.02-0.07]	-0.24	0.2 [0.11-0.66]	0.19 [0.09-0.28]	-1.55	0.23 [0.19-0.3]	0.15 [0.09-0.2]	186 [129-404]	252 [140-341]	34 [19-59]	27 [13-42]	81 [39-284]	127 [54-187]	71 [58-98]	98 [59-132]
South Sudan	☆☆☆☆☆	0.49	3.19 [1.78-5.47]	3.63 [2.27-5.5]	2.92	0.52 [0.22-0.98]	1.12 [0.39-2.02]	0.24	1.1 [0.48-2.2]	1.17 [0.56-2.39]	-0.61	1.57 [0.72-3.49]	1.34 [0.69-2.42]	122 [71-205]	323 [200-480]	26 [11-49]	118 [42-214]	34 [16-69]	86 [41-177]	62 [28-136]	118 [59-229]
Spain	★★★★☆	-3.12	1.25 [1.04-1.68]	0.56 [0.38-0.72]	-3.0	0.27 [0.15-0.5]	0.12 [0.05-0.17]	-1.93	0.57 [0.44-0.99]	0.35 [0.2-0.52]	-5.99	0.41 [0.26-0.46]	0.09 [0.08-0.1]	517 [428-680]	330 [233-423]	108 [60-198]	64 [28-86]	242 [190-406]	212 [123-298]	167 [109-188]	55 [49-71]
Sri Lanka	★★★☆☆	-3.65	4.78 [2.74-6.16]	1.85 [1.24-2.75]	-3.25	3.16 [1.65-4.46]	1.36 [0.81-2.23]	-4.22	0.4 [0.22-0.54]	0.13 [0.09-0.21]	-4.68	1.23 [0.61-1.62]	0.36 [0.21-0.52]	839 [447-1101]	388 [258-584]	579 [290-817]	285 [170-471]	63 [32-89]	28 [18-44]	197 [87-272]	75 [42-109]
Sudan	☆☆☆☆☆	-0.47	2.0 [1.21-2.94]	1.77 [1.18-2.45]	4.96	0.16 [0.07-0.36]	0.59 [0.16-1.11]	-0.73	0.42 [0.14-0.95]	0.35 [0.19-0.64]	-2.08	1.41 [0.85-2.06]	0.82 [0.49-1.33]	336 [192-497]	633 [412-891]	28 [12-62]	230 [60-432]	61 [17-139]	110 [55-205]	248 [139-364]	293 [168-453]
Suriname	★★★☆☆	1.27	3.6 [2.93-5.7]	5.02 [3.26-6.15]	2.25	1.71 [1.15-3.27]	3.07 [1.61-4.07]	0.09	1.07 [0.83-1.78]	1.1 [0.73-1.56]	0.15	0.82 [0.69-1.14]	0.85 [0.56-1.08]	14 [11-23]	28 [18-34]	7 [5-14]	17 [9-23]	4 [3-6]	6 [4-8]	3 [3-5]	5 [3-6]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	Data quality	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	1990	2016	1990	2016	1990	2016	1990	2016
Swaziland	★☆☆☆☆	-1.0	6.58 [3.72-9.24]	5.07 [2.79-7.51]	-1.65	3.86 [1.26-6.42]	2.51 [0.86-4.2]	0.06	1.61 [0.91-2.75]	1.63 [0.87-2.84]	-0.69	1.11 [0.62-1.85]	0.93 [0.46-1.53]	40 [22-58]	59 [33-88]	26 [8-44]	32 [11-54]	8 [4-15]	17 [9-32]	6 [3-11]	10 [5-17]
Sweden	★★★★★	-2.5	2.47 [1.67-2.8]	1.29 [0.85-1.63]	-1.19	0.27 [0.14-0.44]	0.2 [0.08-0.27]	-2.69	2.08 [1.27-2.4]	1.03 [0.64-1.4]	-2.84	0.12 [0.1-0.13]	0.06 [0.05-0.07]	248 [165-281]	165 [108-208]	24 [13-39]	19 [8-27]	211 [128-243]	137 [85-182]	13 [10-15]	8 [7-10]
Switzerland	★★★★☆	-3.61	7.1 [4.97-9.24]	2.78 [1.79-4.43]	-4.01	0.64 [0.32-0.88]	0.23 [0.13-0.36]	-3.62	6.33 [4.29-8.48]	2.47 [1.49-4.14]	-1.73	0.13 [0.11-0.15]	0.08 [0.05-0.11]	543 [381-702]	308 [199-482]	46 [23-62]	21 [12-34]	488 [331-647]	279 [173-451]	9 [8-11]	9 [6-12]
Syria	★★★☆☆	-0.71	2.19 [1.67-2.76]	1.82 [1.08-2.37]	0.95	0.95 [0.56-1.34]	1.22 [0.55-1.74]	-1.64	0.39 [0.26-0.67]	0.26 [0.18-0.35]	-3.45	0.84 [0.61-1.17]	0.34 [0.25-0.41]	201 [152-266]	292 [169-390]	105 [61-144]	214 [95-304]	30 [18-53]	35 [24-50]	67 [50-96]	43 [33-54]
Taiwan	★★★☆☆	-4.53	0.98 [0.46-1.42]	0.3 [0.21-0.39]	-6.14	0.67 [0.16-1.11]	0.14 [0.06-0.21]	-1.48	0.14 [0.09-0.24]	0.1 [0.06-0.13]	-3.42	0.17 [0.14-0.21]	0.07 [0.06-0.09]	193 [80-292]	87 [62-112]	145 [31-246]	37 [17-57]	25 [16-43]	28 [18-38]	23 [18-29]	21 [18-26]
Tajikistan	★★★☆☆	-2.6	2.57 [1.56-3.56]	1.31 [0.96-1.84]	-3.56	1.38 [0.4-2.21]	0.55 [0.3-1.04]	-2.37	0.51 [0.34-0.79]	0.27 [0.17-0.5]	-1.31	0.69 [0.46-1.19]	0.49 [0.31-0.83]	111 [67-153]	105 [75-149]	60 [18-96]	49 [26-92]	18 [13-29]	19 [12-35]	32 [22-52]	37 [24-62]
Tanzania	★☆☆☆☆	-0.46	3.16 [2.38-4.61]	2.81 [2.07-4.03]	0.29	1.39 [0.88-2.57]	1.5 [0.96-2.49]	-0.6	1.07 [0.67-1.8]	0.91 [0.63-1.33]	-2.22	0.7 [0.56-0.88]	0.39 [0.31-0.5]	576 [424-829]	1141 [803-1615]	314 [194-549]	717 [441-1154]	139 [90-230]	280 [193-417]	123 [95-158]	143 [107-190]
Thailand	★★★☆☆	-2.22	9.21 [5.31-11.45]	5.17 [3.47-6.44]	-2.31	7.44 [3.41-9.66]	4.08 [2.55-5.23]	-2.28	1.27 [0.71-1.65]	0.7 [0.39-0.91]	-0.94	0.5 [0.33-1.09]	0.39 [0.25-0.49]	5238 [2971-6651]	3831 [2593-4744]	4293 [1985-5698]	3003 [1916-3826]	675 [364-898]	541 [288-707]	270 [182-552]	286 [189-362]
The Bahamas	★★★★☆	0.6	11.6 [8.38-18.66]	13.57 [6.21-19.2]	0.7	10.89 [7.68-17.94]	13.07 [5.78-18.64]	-0.33	0.25 [0.15-0.47]	0.23 [0.14-0.33]	-2.05	0.46 [0.4-0.56]	0.27 [0.21-0.32]	31 [23-49]	58 [26-82]	30 [21-47]	56 [25-80]	1 [0-1]	1 [1-1]	1 [1-1]	1 [1-1]
The Gambia	★☆☆☆☆	-0.56	3.13 [1.83-6.85]	2.71 [1.57-5.66]	0.33	0.69 [0.19-3.6]	0.75 [0.25-3.82]	-0.65	1.16 [0.35-2.48]	0.98 [0.31-1.86]	-1.03	1.27 [0.94-1.88]	0.97 [0.57-1.5]	20 [12-47]	36 [22-89]	6 [2-30]	14 [5-69]	5 [2-10]	9 [3-17]	9 [6-14]	14 [8-20]
Timor-Leste	☆☆☆☆☆	-3.04	2.59 [1.77-3.58]	1.18 [0.59-2.2]	-1.99	1.18 [0.48-1.94]	0.7 [0.26-1.57]	-2.55	0.51 [0.18-1.03]	0.26 [0.1-0.58]	-5.61	0.91 [0.48-1.74]	0.21 [0.11-0.52]	18 [12-25]	11 [6-22]	9 [3-15]	7 [3-16]	3 [1-6]	2 [1-5]	6 [3-10]	2 [1-5]
Togo	☆☆☆☆☆	0.37	4.51 [3.54-6.32]	4.96 [3.64-6.38]	2.14	1.29 [0.82-2.32]	2.24 [1.43-3.24]	-0.16	1.49 [0.99-2.43]	1.43 [0.81-2.08]	-1.13	1.73 [1.35-2.23]	1.29 [0.81-1.69]	123 [93-174]	283 [204-371]	43 [28-77]	156 [100-225]	27 [17-49]	58 [31-88]	52 [38-69]	70 [42-94]
Tonga	★☆☆☆☆	-3.66	4.12 [2.07-6.06]	1.59 [0.99-2.79]	-5.35	2.63 [0.92-4.48]	0.66 [0.27-1.98]	-0.9	0.65 [0.27-1.04]	0.51 [0.21-0.86]	-2.65	0.83 [0.43-1.55]	0.42 [0.25-0.62]	3 [2-5]	2 [1-3]	2 [1-4]	1 [0-2]	1 [0-1]	0 [0-1]	1 [0-1]	0 [0-1]
Trinidad and Tobago	★★★★★	2.45	6.7 [4.66-11.39]	12.69 [4.96-17.93]	2.8	5.83 [3.69-10.52]	12.07 [4.25-17.35]	-0.14	0.26 [0.17-0.38]	0.25 [0.16-0.36]	-2.05	0.61 [0.54-0.73]	0.36 [0.29-0.51]	82 [57-139]	183 [71-259]	72 [47-129]	174 [62-250]	3 [2-4]	4 [2-5]	7 [6-8]	5 [4-7]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	Data quality	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	ARC (%)	1990	2016	1990	2016	1990	2016	1990	2016	1990	2016
Tunisia	★☆☆☆☆	-1.26	1.1 [0.84-1.51]	0.8 [0.56-1.12]	0.01	0.38 [0.19-0.68]	0.38 [0.22-0.66]	-0.74	0.2 [0.11-0.51]	0.17 [0.1-0.29]	-2.89	0.52 [0.38-0.71]	0.25 [0.17-0.36]	82 [61-114]	93 [66-133]	30 [15-55]	46 [26-80]	13 [7-35]	19 [11-34]	39 [28-53]	27 [19-40]
Turkey	★★★☆☆	-2.51	5.68 [4.09-7.1]	2.96 [1.89-3.83]	-2.07	2.18 [1.01-3.02]	1.27 [0.7-1.73]	-1.91	1.17 [0.66-1.69]	0.71 [0.43-0.98]	-3.37	2.34 [1.53-3.17]	0.97 [0.52-1.32]	2794 [2038-3484]	2433 [1523-3167]	1139 [529-1592]	1061 [573-1449]	562 [306-804]	580 [348-797]	1093 [719-1503]	792 [406-1083]
Turkmenistan	★★★★☆	-2.24	2.4 [1.23-3.3]	1.34 [0.85-2.42]	-2.19	1.73 [0.54-2.56]	0.98 [0.49-2.04]	-2.41	0.6 [0.33-0.96]	0.32 [0.17-0.58]	-2.0	0.08 [0.07-0.1]	0.05 [0.04-0.06]	77 [38-106]	77 [48-144]	57 [18-83]	58 [29-124]	17 [9-28]	17 [9-30]	3 [2-3]	2 [2-3]
Uganda	★☆☆☆☆	-0.97	3.99 [2.3-7.04]	3.1 [1.8-4.55]	0.3	1.31 [0.57-2.04]	1.41 [0.6-2.11]	-2.05	1.59 [0.35-4.48]	0.93 [0.34-2.18]	-1.43	1.09 [0.76-1.52]	0.75 [0.5-1.01]	418 [270-620]	853 [495-1163]	193 [78-306]	497 [192-758]	109 [34-264]	167 [84-302]	117 [77-174]	189 [118-275]
Ukraine	★★★★★	-1.48	2.38 [1.71-3.4]	1.62 [1.03-2.67]	-2.06	1.15 [0.47-2.12]	0.67 [0.3-1.38]	-0.8	0.81 [0.53-1.35]	0.65 [0.39-1.07]	-1.43	0.42 [0.35-0.52]	0.29 [0.21-0.39]	1261 [917-1813]	847 [544-1378]	591 [245-1100]	332 [149-679]	447 [293-757]	360 [219-590]	224 [185-276]	155 [112-205]
United Arab Emirates	★☆☆☆☆	-1.5	1.74 [1.1-2.7]	1.17 [0.73-1.72]	-0.6	0.52 [0.17-1.04]	0.44 [0.24-0.8]	0.12	0.36 [0.16-0.89]	0.37 [0.15-0.73]	-3.34	0.86 [0.46-1.26]	0.36 [0.2-0.53]	33 [19-52]	135 [79-208]	11 [4-23]	56 [30-101]	6 [2-17]	43 [16-88]	15 [7-23]	37 [20-59]
United Kingdom	★★★★★	-3.09	0.71 [0.45-0.78]	0.32 [0.25-0.39]	-3.04	0.15 [0.05-0.19]	0.07 [0.04-0.11]	-3.33	0.47 [0.26-0.54]	0.2 [0.14-0.27]	-2.17	0.1 [0.09-0.11]	0.05 [0.05-0.06]	444 [286-485]	248 [191-307]	89 [32-112]	45 [24-71]	294 [164-342]	157 [108-218]	62 [56-70]	45 [39-50]
United States	★★★★★	-0.95	13.6 [10.56-14.69]	10.64 [8.26-11.68]	-1.29	5.57 [2.64-6.57]	3.98 [2.14-4.85]	-0.55	7.36 [6.14-9.26]	6.39 [4.97-7.54]	-3.54	0.67 [0.48-0.74]	0.27 [0.24-0.37]	35786 [27716-38587]	37171 [28989-41200]	14447 [6851-17054]	12415 [6720-15145]	19662 [16306-24620]	23846 [18479-27868]	1676 [1214-1840]	909 [833-1229]
Uruguay	★★★★☆	-0.83	11.86 [9.96-13.92]	9.55 [7.01-11.32]	0.66	2.48 [1.35-4.13]	2.95 [1.19-4.01]	-0.78	5.18 [4.26-7.22]	4.23 [3.03-5.52]	-2.19	4.19 [2.87-4.64]	2.37 [1.68-2.77]	372 [313-436]	357 [264-422]	75 [41-125]	101 [40-137]	166 [137-231]	168 [119-215]	131 [90-144]	88 [63-103]
Uzbekistan	★★★★☆	-3.8	1.72 [0.88-2.36]	0.64 [0.49-1.01]	-4.59	0.82 [0.13-1.31]	0.25 [0.14-0.52]	-3.21	0.4 [0.25-0.59]	0.17 [0.12-0.3]	-3.19	0.5 [0.35-0.86]	0.22 [0.18-0.3]	280 [136-389]	186 [138-300]	149 [23-239]	81 [44-172]	53 [32-84]	47 [30-83]	78 [55-127]	58 [48-84]
Vanuatu	☆☆☆☆☆	-2.02	4.79 [2.64-7.28]	2.84 [1.67-4.21]	0.02	0.3 [0.15-0.48]	0.3 [0.16-0.49]	-1.71	2.35 [0.6-4.75]	1.51 [0.42-2.75]	-2.83	2.14 [1.23-3.2]	1.03 [0.76-1.35]	5 [3-8]	7 [4-10]	0 [0-1]	1 [0-1]	3 [1-5]	4 [1-7]	2 [1-3]	2 [2-3]
Venezuela	★★★★☆	3.14	17.12 [13.26-27.83]	38.73 [21.93-54.89]	3.39	13.63 [9.98-24.27]	32.93 [15.15-48.82]	1.34	2.08 [1.49-2.89]	2.95 [1.73-4.89]	2.71	1.41 [1.16-2.48]	2.85 [1.12-4.68]	3218 [2548-4859]	12828 [7216-18276]	2589 [1895-4243]	10932 [4935-16278]	359 [243-504]	959 [553-1627]	269 [222-438]	937 [351-1566]
Vietnam	★☆☆☆☆	-2.38	1.0 [0.7-1.35]	0.54 [0.39-0.71]	-1.82	0.22 [0.12-0.38]	0.14 [0.08-0.25]	-2.37	0.48 [0.27-0.79]	0.26 [0.16-0.41]	-2.87	0.3 [0.18-0.42]	0.14 [0.09-0.19]	573 [393-778]	520 [369-699]	136 [74-234]	143 [80-262]	257 [142-424]	246 [155-398]	180 [103-254]	132 [82-180]
Virgin Islands, U.S.	★★★☆☆	0.53	18.58 [14.67-25.34]	21.34 [13.1-27.79]	0.72	15.71 [12.22-22.54]	18.96 [11.26-24.95]	-0.6	2.03 [1.46-2.71]	1.73 [1.13-2.45]	-1.02	0.84 [0.67-1.07]	0.64 [0.42-0.85]	19 [15-26]	23 [15-29]	16 [13-23]	20 [12-26]	2 [1-3]	2 [1-3]	1 [1-1]	1 [1-1]

		Age-standardized rate												Number of deaths							
		Aggregate Firearm death			Homicide by firearm			Suicide by firearm			Unintentional firearm death			Aggregate Firearm death		Homicide by firearm		Suicide by firearm		Unintentional firearm death	
Location	**Data quality**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**ARC (%)**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**	**1990**	**2016**
Yemen	☆☆☆☆☆	-1.0	3.51 [2.11-4.94]	2.71 [1.78-3.91]	0.41	1.36 [0.64-2.45]	1.51 [0.75-2.54]	-0.74	0.49 [0.15-1.2]	0.4 [0.16-0.73]	-2.84	1.66 [0.9-2.51]	0.79 [0.48-1.41]	335 [192-481]	670 [433-984]	129 [58-236]	401 [196-685]	37 [10-93]	83 [31-155]	170 [83-245]	186 [110-325]
Zambia	★☆☆☆☆	1.44	2.92 [2.07-4.01]	4.25 [2.79-5.91]	3.06	0.76 [0.48-1.32]	1.68 [0.88-2.73]	1.38	1.0 [0.64-1.71]	1.43 [0.79-2.26]	-0.09	1.16 [0.74-1.93]	1.14 [0.82-1.54]	166 [120-227]	512 [325-724]	58 [36-93]	244 [121-385]	39 [25-71]	130 [68-207]	69 [45-113]	138 [94-197]
Zimbabwe	★★☆☆☆	2.69	3.1 [1.69-4.76]	6.25 [4.45-8.18]	4.31	0.56 [0.27-0.89]	1.72 [0.6-2.75]	2.07	1.81 [0.85-3.16]	3.09 [2.03-5.52]	2.59	0.74 [0.48-1.04]	1.45 [0.92-1.98]	159 [79-271]	632 [427-978]	46 [21-76]	250 [72-422]	82 [34-184]	283 [170-734]	31 [18-62]	99 [64-144]