HEALTH MATTERS

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Firearm Involved Deaths and Injuries, Riverside County, CA

For more than a quarter-century firearm deaths and injuries have been recognized as both a critical public health issue in the United States and as a criminal justice issue, with many public health experts labeling gun violence an epidemic.[1] Gun violence is a leading cause of premature death in the United States. Guns are involved in almost 30,000 deaths and 80,000 injuries each year, nationwide.[1, 2] In addition to preventable loss of life, the societal costs of firearm injuries include missed work, medical follow-up, mental health care, police/criminal justice activities, employer costs and decreased quality of life. To assist fact-based policy solutions at the local level, this review summarizes the basic epidemiology of firearm involved deaths and injuries within Riverside County*.

KEY FINDINGS

- Firearm deaths have decreased since the early 1990's by nearly 70%.
- Overall, Riverside County is well below the Healthy People 2020 national goals for firearm related deaths and injuries.
- Significant disparities by age and race continue with some populations remaining above the Healthy People 2020 national goals.

MORTALITY

There was a precipitous decline in mortality from the high in 1994 which leveled in 2000 and resumed slowly in 2005 (Figure 1). Tough-on-crime measures, gun-control policies and other theories have been studied to explain the decline seen in the 1990's. Currently there is no consensus as to why it happened.[3]

An average of 159 people per year were killed with guns in Riverside County, including an average of 65 homicides, 91 suicides and 3 unintentional deaths each year, from 2005 – 2014. Unintentional injury deaths are those that are unplanned and typically are preventable and predictable. Of the 1,589 firearm deaths during this 10-year period, 87% were men and 13% women. Firearms are the most used method of suicide and homicide. From 2005 — 2014, firearms were used in 43% of suicides and 66% of homicides in Riverside County.

Figure 1. All cause firearm mortality, Riverside County and California, 1991 – 2014

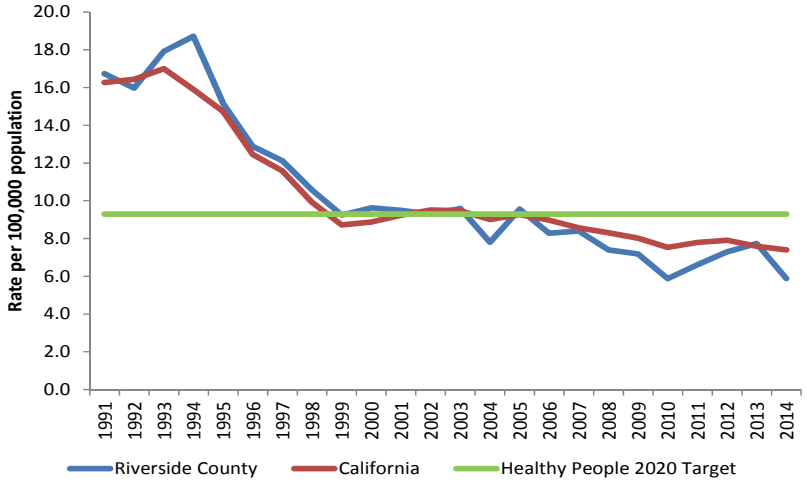


Table 1: 2014 Firearm Mortality			Healthy People 2020 Goal
	Total Number	Rate per 100,000	At or below 9.3 deaths per 100,000 population
United States	33,304	10.2	
California	2,935	7.4	
Riverside County	135	5.9	

*Analysis excludes deaths and non-fatal injuries due to legal intervention.

The average 10 - year death rate from firearms (7.4 per 100,000) ranks between motor vehicle related deaths (11.5 per 100,000) and deaths from falls (5.7 per 100,000). While Riverside County's overall firearm mortality rate has met the Healthy People 2020 national target of 9.3 or fewer deaths per 100,000, not all groups within the County share the same risk. Riverside County African Americans have a 10-year average firearm homicide rate nearly half that of the State (10.8 vs. 22.6 per 100,000) (Table 2), they remain above the Healthy People 2020 goal, and more than three times the County overall with a rate of 3.0 per 100,000.[4]

Racial and age disparities among gun involved suicides and homicides are dramatic, African Americans are 10 times more likely to die from a firearm-related homicide; while Whites are four times more likely to die from a suicide involving a firearm (Figures 4 & 5). Most deaths from firearm violence are suicides, not homicides (58.5% vs. 41.5%).

Figure 2. Firearm mortality by cause, Riverside County, 1991 - 2014

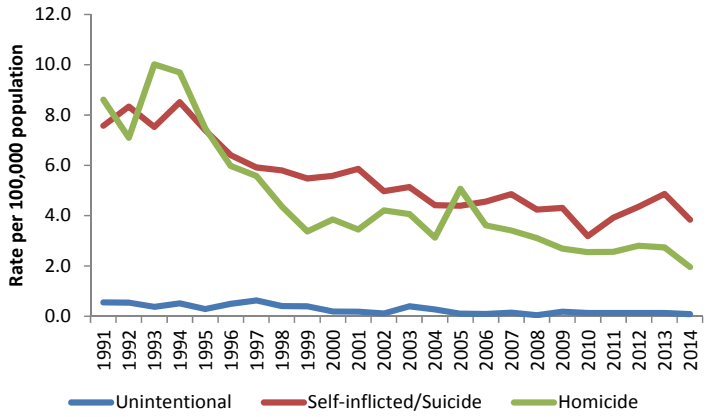


Figure 3. Average firearm homicide and suicide rates by age, Riverside County, 2005 - 2014

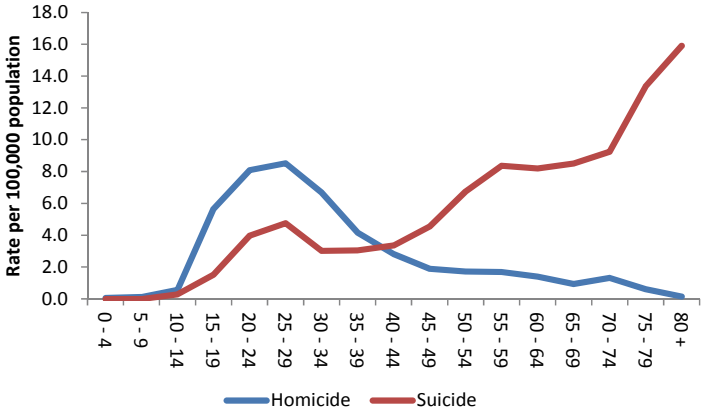


Figure 4. Average firearm homicide rates by race and age, Riverside County, 2005 - 2014**

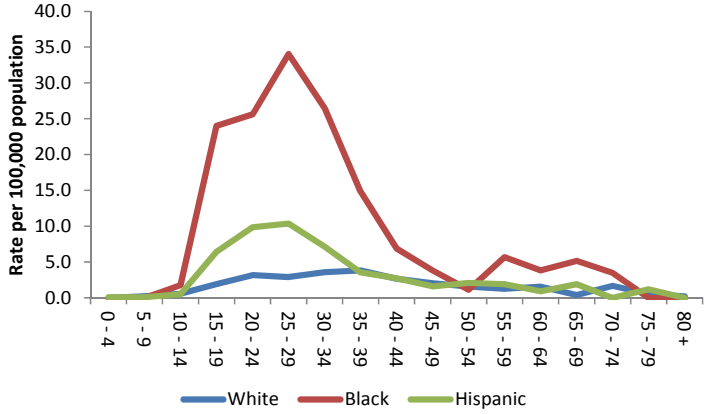


Figure 5. Average firearm suicide rates by race and age, Riverside County, 2005 - 2014**

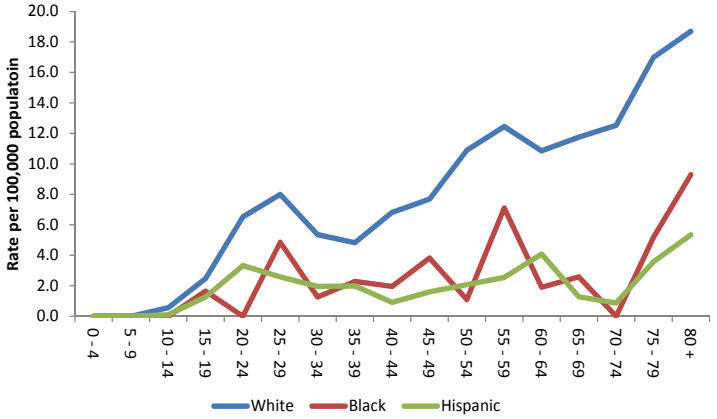


Table 2: Average rate per 100,000 population, firearm-involved homicides, suicides and unintentional injury deaths by race/ethnicity, Riverside County and California, 2005 - 2014**

	Homicide		Suicide		Unintentional	
	Riverside County	California	Riverside County	California	Riverside County	California
White	1.7	1.4	8.2	7.5	0.1	0.1
Black	10.8	22.6	2.0	2.7	0.2	0.4
Hispanic	3.6	5.4	1.4	1.3	0.1	0.1
All Race/Ethnicities	3.0	4.1	4.2	3.9	0.1	0.1

**Due to small numbers other race/ethnicities are not included.

MORBIDITY

Non-fatal Emergency Department Firearm Injury:

While gunshot wounds often result in death, nonfatal wounds can be similarly devastating and lead to permanent disability and psychological trauma. From 2006 – 2014 (the years that emergency department data is available), an average of 173 people were admitted to Riverside County emergency departments with firearm injuries per year, including an average of 94 assaults, 74 unintentional and five self-inflicted. Of the 1,560 people admitted to emergency departments for firearm injuries, 90% were men while 10% were women (2006 — 2014). Riverside County has remained below the Healthy People 2020 National Target of 18.6 firearm injuries per 100,000.[4]

Table 3: 2014 Non-fatal Firearm Emergency Department Visits			Healthy People 2020 Goal
	Total Number	Rate per 100,000	At or below 18.6 firearm injuries per 100,000 population
United States	81,034	25.4	
California	3,149	8.2	
Riverside County	164	7.1	

Most gun-involved injuries in Riverside County result from assaults followed by unintentional injuries (54% vs. 43%) with 3% intentionally self-inflicted. The risk of firearm injuries from both assault and unintentional is higher among young African Americans between 15 and 39 years old (Figures 8 & 9). The average rate of emergency department admittance for firearm assault among African Americans was three times the rate of Hispanics and eight times the rate of Whites in the same age range, from 2006 through 2014. The unintentional gun injury rate for African Americans is over three times the rate of both Hispanics and Whites.

Figure 6. Non-fatal firearm emergency department visits, Riverside County and California, 2006 - 2014

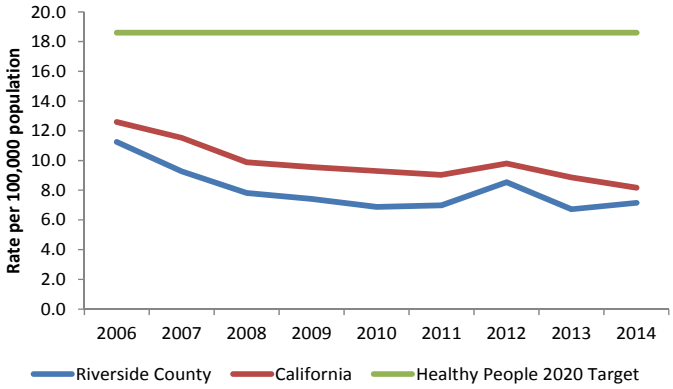


Figure 7. Non-fatal firearm emergency department visits by cause, Riverside County, 2006 - 2014

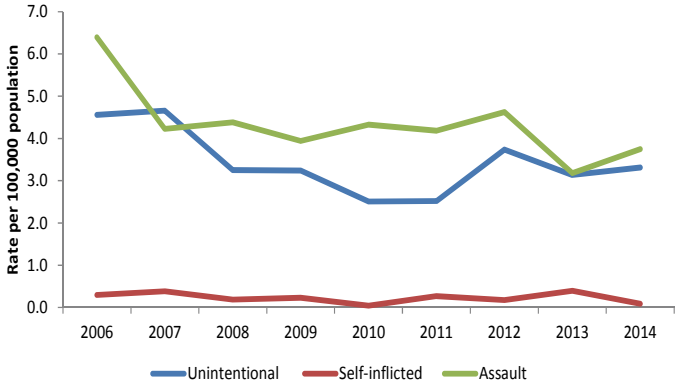


Table 4: Average rate per 100,000 population, firearm-involved assaults, self-inflicted and unintentional injury emergency department visits by race/ethnicity, Riverside County and California, 2006 - 2014**

	Assault		Self-Inflicted		Unintentional	
	Riverside County	California	Riverside County	California	Riverside County	California
White	1.5	1.7	0.3	0.2	2.1	2.1
Black	14.0	30.8	0.2	0.1	8.2	14.1
Hispanic	4.9	6.4	0.1	0.1	3.1	3.4
All	3.9	5.5	0.2	0.1	3.1	3.3

**Due to small numbers other race/ethnicities are not included.

Figure 8. Average rates of unintentional firearm emergency department visits by age and race, Riverside County, 2006 - 2014**

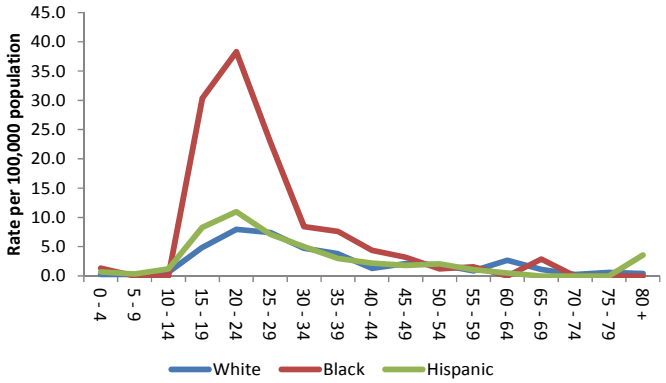
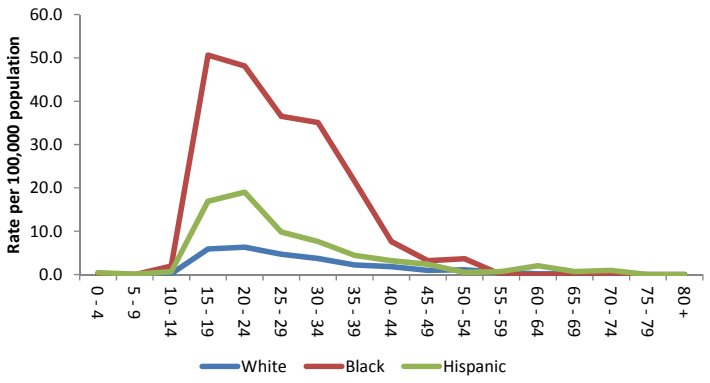


Figure 9. Average rates of assault firearm emergency department visits by age and race, Riverside County, 2006 - 2014**



CONCLUSION

With over 60,000 firearms sold in Riverside County per year, firearms are commonplace. However, the risk for firearm-involved violence is not evenly distributed across all populations.[5] Risk for gun violence varies considerably across different populations with patterns that are notably different for suicide and homicide. By understanding the epidemiological profile of firearm-related deaths and injury, we can inform public health interventions that may increase safety. Efforts should focus on groups showing the greatest disparities in death and injury, such as young men of color for assault and homicide and middle age and older white men for suicide. An important next step will be to further examine the data among these two groups in order to identify areas for public health intervention.

From the desk of Cameron Kaiser, MD, MPH, FAAFP — Public Health Officer

There is no dispute that safe handling and storage practices are an essential part of responsible gun ownership and reducing unintentional injury. However, firearm safety doesn't prevent willful suicide or homicide. The data in this report also shows intentional gun violence touches many of our populations in different and disproportionate ways. While Riverside County fortunately remains below the Healthy People 2020 threshold for gun deaths, even those relatively few deaths are too many. We need to also address the risk factors for suicide and homicide just as we are addressing them for unintentional gun injuries. This requires us to examine our mental health and criminal justice systems carefully to determine why some individuals lack the personal and community resilience for dealing with stressors that others are able to weather. A concerted effort now to help build those resilience factors could be a key in reducing intentional firearm violence in the future and helping to protect our most vulnerable populations from a severely understudied risk.

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