

# 2020 Firearm Injuries Up More Than 70%—Worse in Black and Hispanic Young Men

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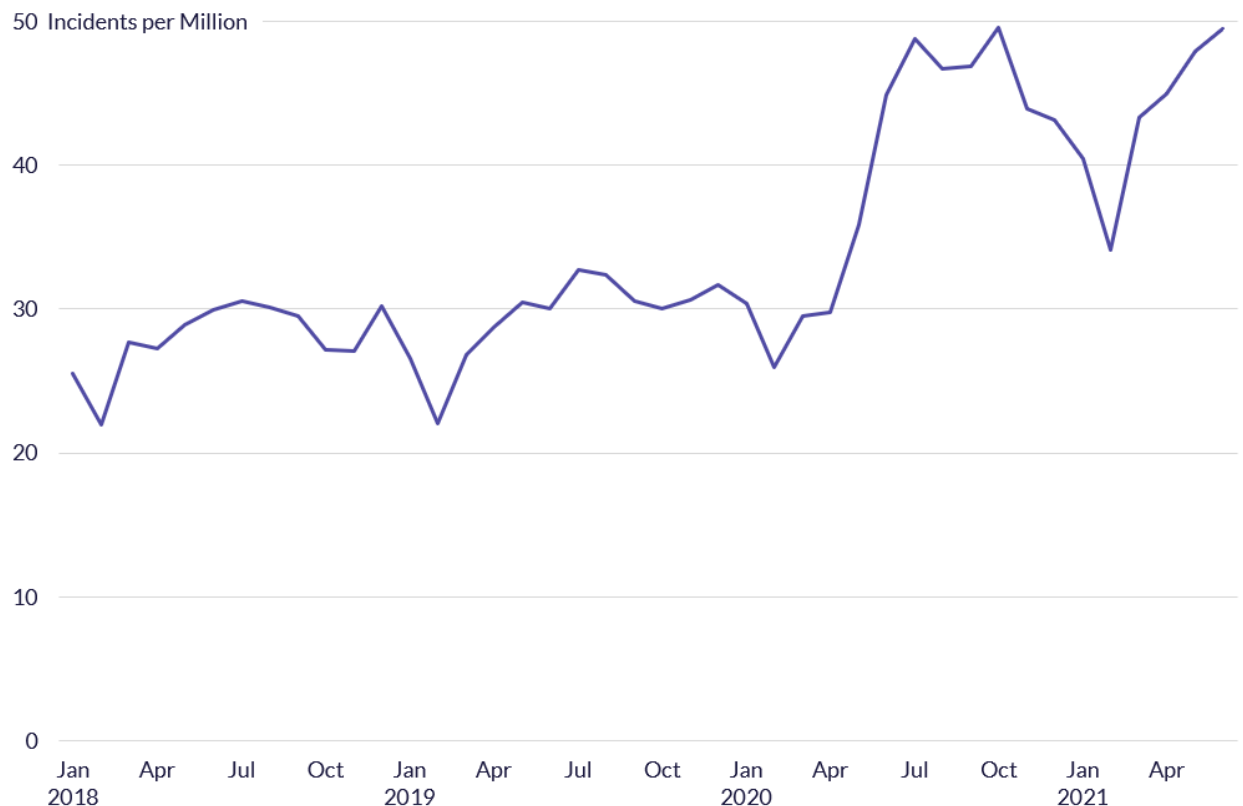
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*Abstract: Healthcare visits for firearm injuries increased significantly for all patients in 2020, particularly for non-White populations.*

According to both researchers and the media, reports of gun violence rose significantly in 2020.<sup>1,2</sup> We reviewed EHR data for patients who sought care for at least one new firearm incident. The data show a sharp increase in incidents starting in late spring 2020, with monthly incidents peaking in October 2020 at 73% higher than the monthly average in 2018 and 2019.

## Monthly Firearm Incidents per Million Active Patients

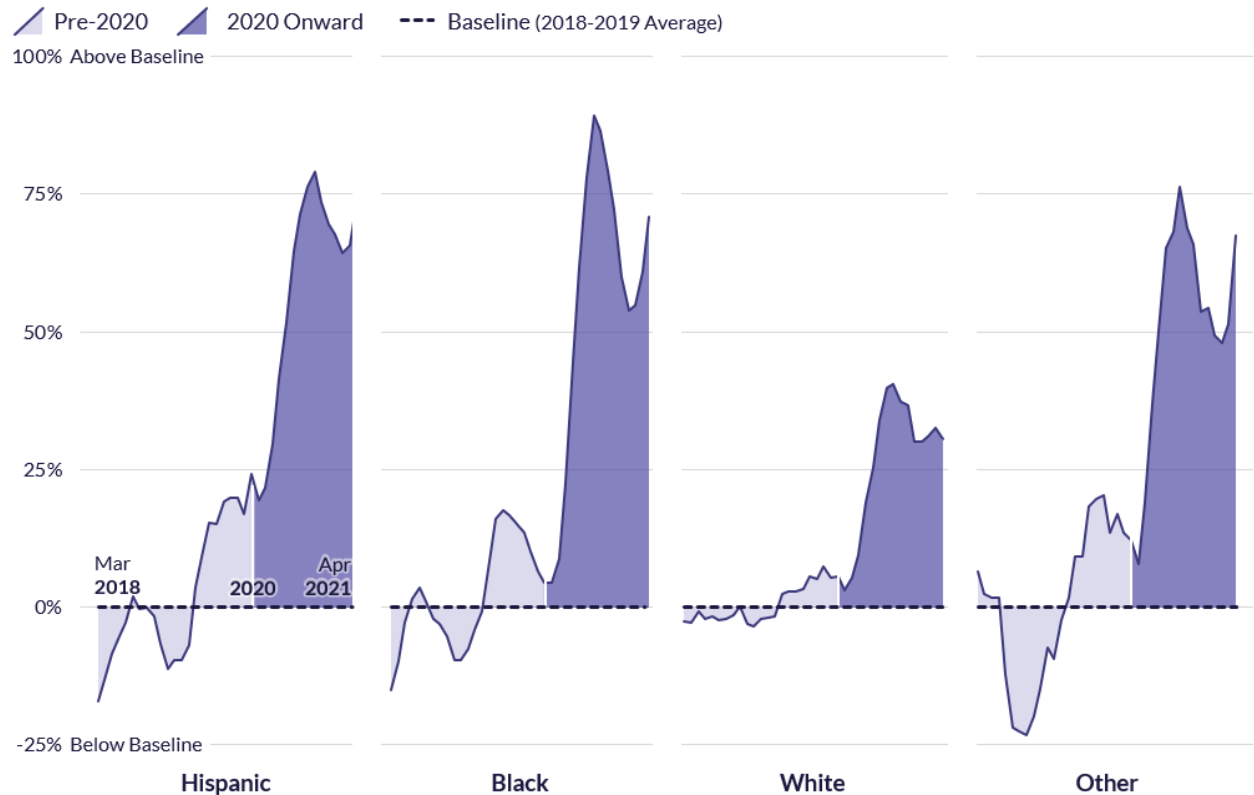


“Monthly Firearm Incidents per Million Active Patients,” 2021. Epic Health Research Network (EHRN.org)

Figure 1. Monthly firearm incidents per million active patients between January 2018 and June 2021.

Firearm incidents increased for patients of all races and ages, as shown in Figure 2 and Figure 3 below, but the increase was not proportional across races. To smooth month-to-month variation, we calculated 5-month rolling averages and found that incidents increased for non-White populations by between 76% and 89% while they increased for the White population by 40%.

## Percent Change in Firearm Incidents Over Time by Race or Ethnicity



"Percent Change in Firearm Incidents Over Time by Race or Ethnicity," 2021. Epic Health Research Network (EHRN.org)

Figure 2. Five month rolling average of the percent change in firearm incidents from March 2018 to April 2021 above or below the baseline historical average from January 2018 to December 2019, stratified by race or ethnicity. The "Other" category includes any race or ethnicity outside of Hispanic, Black, or White.

When broken down by sex, 85% of all new firearm incidents between January 2018 and June 2021 were for male patients compared to 15% for female patients. We further stratified new firearm incidents by race or ethnicity and age, as shown in Figure 3. Black male patients ages 18-34 have historically had more firearm incidents than patients from other groups. Black female patients ages 18-34 have also had more firearm incidents than other female groups.

# Firearm Incidents per Million Active Patients

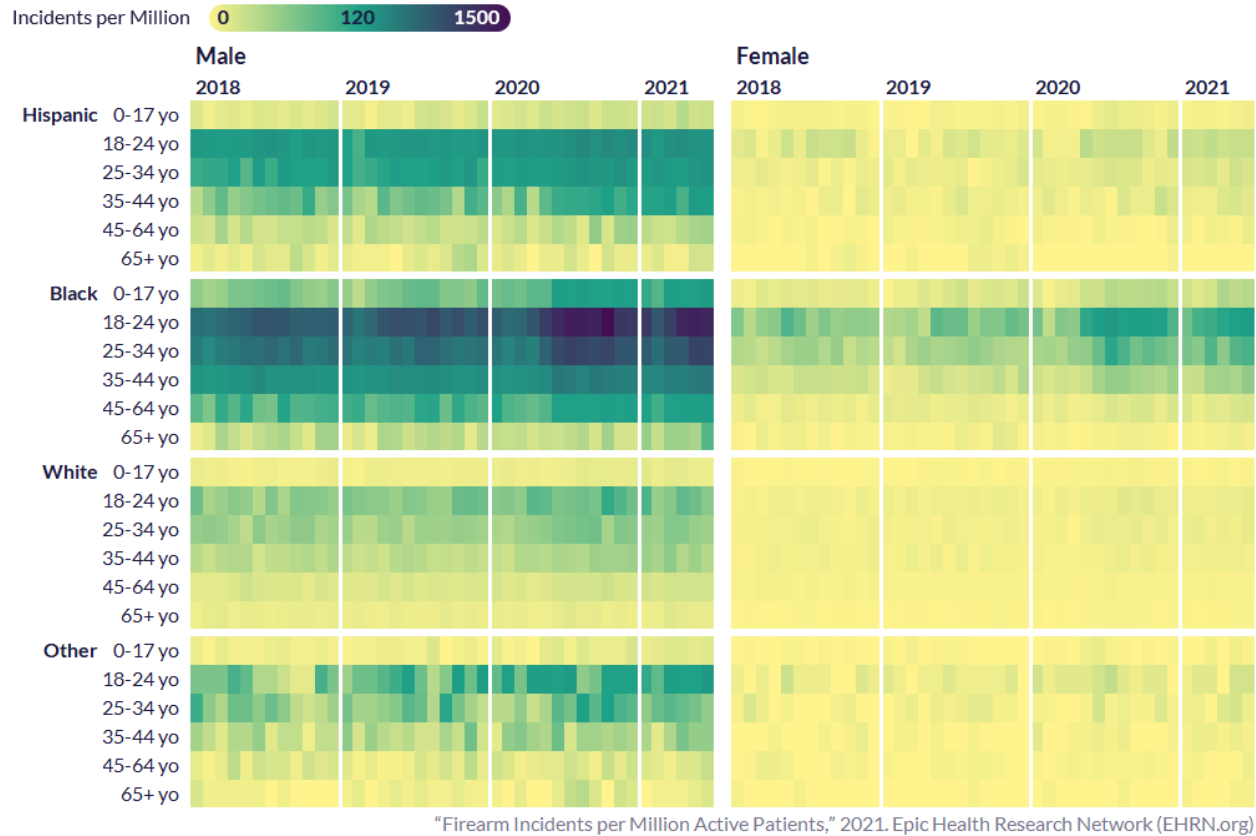


Figure 3. Monthly firearm incidents per million active patients by sex, age group, and race between January 2018 and June 2021.

At a time when other interactions with the healthcare system decreased,<sup>3</sup> visits for new firearm incidents increased, particularly for non-White patients.

*These data come from Cosmos, a HIPAA-Limited Data Set of more than 118 million patients from 136 Epic organizations including 705 hospitals and 12,172 clinics, serving patients in all 50 states. This study was completed by two teams, comprised of clinicians and data scientists, that independently acquired and analyzed data. Both teams were involved in the interpretation of results and drafting of this brief. Overall, the two teams came to similar conclusions.*

## References

1. Rosenfeld R, Lopez E. Pandemic, Social Unrest, and Crime in U.S. Cities. University of California Press. <https://doi.org/10.1525/fsr.2020.33.1-2.72>. Published December 1, 2020. Accessed August 9, 2021.
2. Bates J. 2020 Ends as One of America's Most Violent Years in Decades. Time. <https://time.com/5922082/2020-gun-violence-homicides-record-year/>. Published December 30, 2020. Accessed August 9, 2021.

- Melnick G, Maerki S, Kolapelli N, Abudukadeer A, Zaniello BA. Hospital Utilization During the Pandemic: An Update. Epic Health Research Network. <https://ehrn.org/articles/hospital-utilization-during-the-pandemic-an-update>. Published May 28, 2021. Accessed August 17, 2021.

## Data Definitions

Term	Definition
<b>Active Patients</b>	Patients who have any documented encounter in a given year. Despite patients' decreased involvement with the health system during the COVID-19 pandemic, <sup>4</sup> the number of active patients from 2018 to 2021 remained stable.
<b>New Firearm Incident</b>	A hospital, urgent care, surgery, or office visit encounter with a firearm injury diagnosis that is at least 365 days after a previous encounter of this kind. Two firearm incidents for a patient within 365 days would be counted as one incident in this study. A patient who had only one firearm injury but had a subsequent encounter for follow-up care for the same injury more than 365 days later would be counted twice.
<b>Patient Race</b>	The patient's race as documented in their medical record. For patients with more than one race documented, the first entered race was used.
<b>Other Race</b>	This category applies to patients who are not of Hispanic ethnicity or of White or Black race, but have some other race documented. This does not apply to patients who have no race documented.
<b>ICD-10 Codes for Firearm Injury Diagnoses</b>	W32.0XXA, W32.1XXA, W32.1XXD, W33.00XA, W33.00XD, W33.01XA, W33.01XD, W33.02XA, W33.02XD, W33.03XA, W33.03XD, W33.09XA, W33.09XD, W33.10XA, W33.10XD, W33.11XA, W33.11XD, W33.12XA, W33.12XD, W33.13XA, W33.13XD, W33.19XA, W33.19XD, W34.00XA, W34.00XD, W34.09XA, W34.09XD, W34.10XA, W34.10XD, W34.19XA, W34.19XD, X72.XXXA, X72.XXXD, X73.0XXA, X73.0XXD, X73.1XXA, X73.1XXD, X73.2XXA, X73.2XXD, X73.8XXA, X73.8XXD, X73.9XXA, X73.9XXD, X74.8XXA, X74.8XXD, X74.9XXA, X74.9XXD, X93.XXXA, X93.XXXD, X94.0XXA, X94.0XXD, X94.1XXA, X94.1XXD, X94.2XXA, X94.2XXD, X94.8XXA, X94.8XXD, X94.9XXA, X94.9XXD, X95.8XXA, X95.8XXD, X95.9XXA, X95.9XXD, Y22.XXXA, Y22.XXXD, Y23.0XXA, Y23.0XXD, Y23.1XXA, Y23.1XXD, Y23.3XXA, Y23.3XXD, Y23.8XXA, Y23.8XXD, Y23.9XXA, Y23.9XXD, Y24.8XXA, Y24.8XXD, Y24.9XXA, Y24.9XXD, Y35.001A, Y35.001D, Y35.002A, Y35.002D, Y35.003A, Y35.003D, Y35.009A, Y35.009D, Y35.011A, Y35.011D, Y35.012A, Y35.012D, Y35.013A, Y35.013D, Y35.019A, Y35.019D, Y35.021A, Y35.021D, Y35.022A, Y35.022D, Y35.023A, Y35.023D, Y35.029A, Y35.029D, Y35.031A, Y35.031D, Y35.032A, Y35.032D, Y35.033A, Y35.033D, Y35.039A, Y35.039D, Y35.091A, Y35.091D, Y35.092A, Y35.092D, Y35.093A, Y35.093D, Y35.099A, Y35.099D