



Racial disparities in use of force at traffic stops

Matthew A. Graham, Scarlet Neath, Kim S. Buchanan,
Kerry Mulligan, Tracey Lloyd, and Phillip Atiba Solomon

Executive summary

This brief summarizes findings from original analyses conducted by the Center for Policing Equity (CPE) on police use of force following traffic stops. Drawing on findings from CPE's analyses of 24 local law enforcement agencies nationwide and a novel analysis of eight large agencies in California, this brief updates and extends findings on racial disparities in traffic stops and police use of force. We confirm prior findings that Black drivers are subjected to higher rates of non-safety stops and discretionary searches than are White drivers. We further find that non-safety stops are more likely to involve use of force than are stops

focused on dangerous driving. Taken together, these results suggest that officers' decisions to stop Black drivers for non-safety reasons—and to conduct discretionary searches during those stops—combine to exacerbate Black drivers' exposure to police use of force.

A significant share of the millions of traffic stops made annually are for low-level violations,ⁱ such as a single broken taillight or tinted windows, which do not have a clear relationship to traffic safety.ⁱⁱ Officers may pull over drivers for these reasons because they are incentivized to generate a high volume of stops through, for example, performance metrics or grant funding. Officers also use minor violations to conduct what are known as pretextual stops, or an effort to uncover evidence of a serious crime for which they lack reasonable suspicion.

Traffic stops have come under increasing scrutiny because of their role in fueling racial disparities in policing and associated harms, including distrust in police,ⁱⁱⁱ financial penalties,^{iv} and police violence.^v Evidence shows that Black drivers are more likely than White drivers to be pulled over, even though there is no evidence to show that they more frequently commit driving violations. Black drivers are also twice as likely to be searched once stopped—a common feature of a pretextual stop—despite the fact that they are less likely to be found in possession of contraband, such as drugs or weapons.^{vi}

This brief aims to shed light on one of the many risks to Black drivers posed by traffic enforcement: police use of force. We draw on data from two sources: CPE's existing portfolio of work providing agency-specific analyses to local law enforcement agencies

across the United States, and original analysis of data from eight agencies in California. Previous research using California data has revealed racial disparities in intrusive actions taken at police stops, but has not differentiated between use of force and other actions such as being asked to step outside the vehicle.^{vii}

Findings on Traffic Stops and Use of Force from Nationwide Jurisdictions

CPE has produced dozens of Justice Navigator Assessments for agencies of various sizes and jurisdiction types across the country (including some [assessments](#) which are publicly available). We examined use of force¹ and traffic stops using our current [methodology](#) in 24 of these jurisdictions.² We distinguish between two types of stops: “safety stops,” where the recorded reason for the stop was a moving violation, and “non-safety stops,” where the recorded reason for the stop was an equipment, license, or registration violation. Collectively, these data sets included 67,378 use of force incidents and more than 2.2 million traffic stops recorded between 2013 and 2022. We found that:

- 1. The share of police stops made for non-safety reasons was higher for Black drivers than for White drivers in all 16 jurisdictions for which data on stop**

¹ The types of force recorded by agencies varies widely. Among the various types of force reported by agencies, CPE includes any reported physical force used to coerce or gain control of a person beyond handcuffing, including things like control holds and takedowns, as uses of force.

² In most jurisdictions, stops data and use of force data are collected separately and not linkable in a way that allows researchers to determine the characteristics of traffic stops that are associated with increased likelihood of use of force. As a result, this section reports findings from separate analyses of (a) use of force and (b) traffic stops data sets. The following section presents findings from a unique statewide stops data set that contains use of force indicators.

reasons were available. The share of police stops made for safety reasons was higher for White drivers than Black drivers.

2. Once stopped, police searched Black drivers at disproportionately high rates relative to White drivers in all 18 jurisdictions for which data on traffic stop search rates were available. The disparity at which Black drivers were searched ranged from 1.2 to 5.1 times as often as White drivers across the 18 jurisdictions for which data on traffic stop search rates were available, depending on the jurisdiction.
3. Overall, police searched drivers in 4.5% of all traffic stops across 15 jurisdictions for which data on search outcomes were available, and found contraband in 23.1% of those searches. In 11 of those 15 jurisdictions (73%), police discovered contraband in searches of Black people at similar or lower rates than in searches of White people.
4. Police used force on Black people at disproportionately high rates per capita relative to White people in all 24 jurisdictions for which we were able to assess use of force rate disparities.³

³ This finding is based on all uses of force, including those that occur at traffic stops.

Findings on Traffic Stops and Use of Force from California

In order to shed more light on these findings, we analyzed use of force at traffic stops in a state with particularly robust data. In 2015, California enacted the Racial and Identity Profiling Act (RIPA) mandating data collection for all traffic and pedestrian stops. It became the nation's largest and most comprehensive stop data collection effort to date. The following findings are from publicly available data on 1.6 million vehicle stops recorded by police in 2019–2022 or 2020–2022 in eight of the nine largest municipalities in California: San Jose, Long Beach, Los Angeles, San Diego, Fresno, Sacramento, Oakland, and Bakersfield.⁴ These eight agencies have jurisdiction over more than 20% of California's population. Across these agencies, we found that:

- 1. Police use force on drivers pulled over for non-safety stops more often than drivers pulled over for safety stops.**

Police were more likely to use force on people of all racial groups when the reason for pulling the person over was a non-safety stop, but the increased likelihood was greater for Black and Latine drivers than for White drivers. Officers were 1.9 times as likely to use force on White drivers at a non-safety stop than at a safety stop; this number increased to them being 2.9 times more likely to use force on Black drivers at non-safety stops than at safety stops, and 2.4 times as likely to use force on Latine drivers at non-safety stops than at safety stops.

⁴ San Francisco is excluded because of documented data validity issues. See, for example, Cassidy, M. (2023, September 15). SFPD watchdogs say officers have misreported race data in traffic stops. *San Francisco Chronicle*. [sfchronicle.com/crime/article/san-francisco-police-stops-race-18367337.php](https://www.sfchronicle.com/crime/article/san-francisco-police-stops-race-18367337.php)

2. Discretionary searches, which are associated with a greater likelihood of use of force, were initiated by officers more frequently at non-safety stops than safety stops.

Overall, officers conducted discretionary searches⁵ in 11.8% of traffic stops and found contraband in 20.4% of those searches. Officers were three times more likely to search White drivers at non-safety stops than at safety stops, but seven times more likely to search Black and Latine drivers at non-safety stops than at safety stops. At the same time, police discovered contraband at roughly the same rate in safety and non-safety stops (19.5% versus 21.3%, respectively for all searches, regardless of driver racial group).

Police officers initiating a discretionary search was also strongly correlated with whether they used force. Across the eight agencies studied, force was more than 14 times more likely in stops that involved a discretionary search, regardless of whether contraband was found, than in stops that did not involve a search.

3. Police routinely use force at traffic stops, even with no resulting arrest.

There is a longstanding assumption that all or most police uses of force result in arrests. However, we find that, of the 11,088 use of force incidents at traffic stops analyzed across these eight cities, police recorded an arrest at just 3,583 of them, or 32.3%. Police documented using force without documenting an accompanying arrest on drivers who were pulled over for a non-safety stop three times as often as drivers pulled over for safety stops.⁶

⁵ For this analysis, we include all searches except those incidents where a search is mandatory: where there is an arrest or when a vehicle is towed or impounded.

⁶ The fact that use of force and arrests don't always co-occur is not an anomaly in the California data. CPE observed this across the 12 cities nationally where we produced Justice Navigator assessments and for which stop outcome was provided. In these, the percentage of use of force incidents that also included a recorded arrest ranged from 36% to 88%, with a median of 72%.

Black drivers who were pulled over and then not arrested were more likely to be subjected to use of force than were their White counterparts. Police were more than twice as likely to use force on Black people compared to White people in stops that did not result in an arrest, regardless of whether the result was a citation, a warning, or no action.

4. Police were more likely to use force if the driver was Black than if they were White in nearly all types of traffic stops.

Police were more likely to use force at traffic stops if the driver was Black in nearly every type of scenario documented across the eight agencies, regardless of stop reason, whether the stop involved a search, whether a search found contraband, and whether the encounter resulted in a warning, arrest, or citation.

Conclusion

This analysis shows that when police pull people over for non-safety violations and search them for evidence of crimes, there is a greater likelihood of police use of force. These findings are consistent with a growing body of evidence suggesting that limiting routine stops for non-safety offenses has the potential to reduce the likelihood of police use of force, especially for Black people. To date, there is no evidence that limiting routine stops for non-safety offenses compromises public or road safety outcomes.^{viii}

Dozens of police departments, city councils, state legislators, prosecutors, and state courts across the country have already enacted measures to limit or disincentivize non-safety stops. Recent studies examining the impacts of these changes have found that they reduce racial disparities in stop rates and reduce traffic crashes,^{ix} with no impact on crime.^x Given

the clear findings about racial disproportionality in police use of force at traffic stops documented previously and extended here, future research should examine the impact of these and other reforms on reducing these harmful and inequitable outcomes.

About the authors

Matthew A. Graham, MA, is a senior data analyst at the Center for Policing Equity

Scarlet Neath, MPP, is the policy director at the Center for Policing Equity.

Kim Shayo Buchanan, JD, JSD, is an expert on racial, gender, and sexual justice in criminal legal systems.

Kerry Mulligan, PhD, is the associate director of research, Redesigning Public Safety, at the Vera Institute of Justice.

Tracey Lloyd, PhD, is the senior vice president of science at the Center for Policing Equity.

Phillip Atiba Solomon, PhD, is the co-founder and CEO of the Center for Policing Equity and Chair and Carl I. Hovland Professor of African American Studies and Professor of Psychology at Yale University.

-
- ⁱ Lofstrom, M., Hayes, J., Martin, B., & Premkumar, D. (2022, October). *Racial Disparities in Traffic Stops*. Public Policy Institute of California. ppic.org/publication/racial-disparities-in-traffic-stops; Baumgartner, F. R., Epp, D. A., & Shoub, K. (2018). *Suspect citizens: What 20 million traffic stops tell us about policing and race*. Cambridge University Press, p. 54.
- ⁱⁱ Center for Policing Equity (2024). *Factsheet: Which Stops Impact Serious Crashes?* policingequity.org/traffic-safety/79-factsheet-which-stops-impact-serious-crashes/file
- ⁱⁱⁱ Epp, C.R., Maynard-Moody, S. & Haider-Markel, D. (2017), Beyond profiling: The institutional sources of racial disparities in policing. *Public Administration Review*, 77, pp. 168–178. doi.org/10.1111/puar.12702
- ^{iv} Alabama Appleseed Center for Law & Justice. (2023). *Taken for a ride: How excessive ticketing propels Alabama drivers into a cycle of debt, incarceration, and poverty*. pp. 9–11. alabamaappleseed.org/wp-content/uploads/2023/07/Alabama-Appleseed-Taken-for-a-Ride-Report-2023-WEB.pdf; Aggarwal, P., Brandon, A., Goldszmidt, A., et al. (2022). High-frequency location data shows that race affects the likelihood of being stopped and fined for speeding (SSRN Scholarly Paper No. 4298671). doi.org/10.2139/ssrn.4298671
- ^v Engel, R. S., & Calnon, J. M. (2004). Examining the influence of drivers’ characteristics during traffic stops with police: Results from a national survey. *Justice Quarterly*, 21(1), pp. 49–90. doi.org/10.1080/07418820400095741
- ^{vi} Pierson, E., Simoiu, C., Overgoor, J. et al. (2020). A large-scale analysis of racial disparities in police stops across the United States. *Nature Human Behavior*, 4, pp. 736–745. doi.org/10.1038/s41562-020-0858-1; Charbonneau, A., & Glaser, J. (2021). Suspicion and Discretion in Policing: How Laws and Policies Contribute to Inequity. *UC Irvine Law Review*, 11(5), p. 1327. scholarship.law.uci.edu/ucilr/vol11/iss5/6
- ^{vii} Lofstrom, M., Hayes, J., Martin, B., & Premkumar, D. (2022, October). *Racial Disparities in Traffic Stops*. Public Policy Institute of California. ppic.org/publication/racial-disparities-in-traffic-stops; Baumgartner, et al., 2018.
- ^{viii} Vera Institute of Justice (2024, March). *Evidence supports limiting non-safety-related traffic stops*. vera.org/images/STOPS_Evidence-Guide.pdf
- ^{ix} Fliss, M.D., Baumgartner, F., Delamater, P. et al. (2020). Re-prioritizing traffic stops to reduce motor vehicle crash outcomes and racial disparities. *Injury Epidemiology*, 7(3). doi.org/10.1186/s40621-019-0227-6; Naddeo, J.J. & Pulvino, R. (2023, October 10). *The effects of reducing pretextual stops: Evidence from St. Paul, Minnesota*. [Working Paper]. github.com/jnaddeo/job-market-materials/blob/main/working_papers/RCAO_Pretextual_Stops_101023.pdf
- ^x Fliss, et al., 2020; Naddeo & Pulvino, 2023; Chohlas-Wood, A., Goel, S., Shoemaker, A., & Shroff, R. (2018, November 19). An analysis of the Metropolitan Nashville Police Department’s traffic stop practices. *Stanford Computational Policy Lab*. policylab.stanford.edu/media/nashville-traffic-stops.pdf; Ross, M. B., Kalinowski, J. J., & Barone, K. (2020). Testing for disparities in traffic stops: Best practices from the Connecticut model. *Criminology & Public Policy*, 19(4), pp. 1289–1303. doi.org/10.1111/1745-9133.12528