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# Preventing Urban Firearm Homicides during COVID-19: Preliminary Results from Three Cities with the Advance Peace Program

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**Abstract** The years 2020–2021 during the COVID-19 pandemic witnessed increases in firearm violence in many cities across the USA. We present data from Sacramento, Stockton, and Richmond, California that suggests firearm homicides during the pandemic did not increase in all communities or disproportionately burden the African American community. More specifically, we found that in these cities, there was a 5–52% decrease in gun homicides during the 2020/2021 period compared to the 2018/2019 period for neighborhoods with a gun violence prevention program operating there. We also found a 24–83% reduction in gun homicides in census tracts with > 20% Black populations in Sacramento and Stockton during the 2020/2021 period compared to the 2018/2019 period. In two cities, there was a 15–42% decrease in the number of African American men under 35 years old that were victims of a gun homicide in 2021 compared to 2018. We also found that the gun violence program operating in these cities called Advance Peace interrupted

202 street-level conflicts where guns were present across the three cities in 2020/2021 compared to 178 of the same conflicts in 2018/2019. These interruptions likely saved hundreds of lives and we estimate contributed to between US \$65 and \$494 million in savings. Advance Peace is a program that engages those at the center of gun violence, frequently young, Black men under 35 years old, and offers them the Peacemaker Fellowship, an intensive, 18-month program of 24/7 mentorship, social services, and life opportunities. The program is delivered by community resident “credible messengers,” who conduct the mentorship and interrupt conflicts in the streets. While these findings are descriptive and preliminary, we know of no other program that was in operation before and during the pandemic in each of these cities that engaged the hard-to-reach but highly influential population at the center of gun violence.

## Introduction

The years 2020–2021 during the COVID-19 pandemic witnessed increases in firearm violence in many cities across the USA [1, 2]. However, only a few studies we are aware of have documented among whom or where in cities, the burden of gun violence was the highest during the pandemic [34] or if gun violence prevention programs may have had an impact on the burden of urban gun homicides [5].

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This article aims to contribute to a decades-long engagement by this journal in both understanding the drivers behind urban firearm violence and how a public health approach might help reduce urban gun crime [6–10].

Urban firearm violence disproportionately burdens African American communities and young, Black men [11]. For example, in 2019, the gun homicide rate for Black males between 15 and 34 years old was 81.5/100,000; for all Black males, it was 37.7/100,000; 21/100,000 for all Blacks; 11/100,000 for Whites of all ages; 6.5/100,000 for Latinos of all ages; and <2/100,000 for Asian Americans [12]. In the USA, Black men are eight times more likely to die by firearm homicide than the general population (all sexes), seven times more likely to die by firearm homicide than Latino men, and the rate of firearm violence for Black males 15–34 years old is more than 20 times higher than White males of the same age group [13]. The continued racial inequities of urban firearm violence has contributed to renewed calls for non-law enforcement strategies to prevent gun violence in urban areas and to invest in the “root causes” of urban gun violence, such as persistent poverty, racial segregation, mass incarceration, and healing from intergenerational trauma [14]. Cities are increasingly looking to gun violence reduction programs that employ community members as “violence interrupters” and adult mentors, since these strategies have been shown to reduce urban firearm violence and support the health and healing of traumatized residents [15, 16]. Federal public policy recommendations in 2021 called for new investments in community violence interventions [17]. One such non-law enforcement, community-driven, urban gun violence reduction program is called Advance Peace, and it was in operation during the COVID-19 pandemic in Sacramento, Stockton, and Richmond, California [18]. This paper asks whether having the Advance Peace (AP) program in operation during the pandemic had an impact on the rate of firearm homicides compared to pre-pandemic rates [19]? We also ask whether Advance Peace may have helped mitigate the gun violence burden in Black communities and victimization experienced by young Black men in the three cities where it operated during the pandemic?

## Methods

We obtained gun homicide (CA Penal Code 187 [A]) and assault with a firearm on a person (CA Penal Code 245 [A2]) from each city’s police department for the years 2018–2021. These data included incident type and date, victim race/ethnicity, age, and the location of each incident (only Sacramento did not provide victim age, gender, or race/ethnicity). We also obtained US census tract data for each city, including the geographic boundaries of each tract and the population demographics (using 2019 American Community Survey data). For the years 2018–2021, we computed monthly firearm homicides and assaults for each city, the rate and percent of gun homicides and assaults, the percent of just homicides in census tracts with 20% or more African American population, the percent of gun homicide victims that were Black, and the percent of gun homicides in the neighborhoods where Advance Peace focused its street outreach and violence interruption.

Advance Peace *target neighborhoods* in each city are areas that the city government and Advance Peace determines are the districts with the greatest number of gun homicides prior to the launch of the program. The AP target areas in Sacramento are the Del Paso Heights, Oak Park, and South Sacramento neighborhoods; in Stockton, the AP zones are the Ponce de Leon, Polos, and Townhomes areas in the North, the Pixie and Conway areas in the West, and the Sutter Street, Eighth St., Crow Valley, and Charter Way areas in the South; in Richmond, the areas are North, Central, and South, Richmond. Using each city’s geographic information systems data, we developed shape files for these AP “zones” and calculated the number of firearm homicides in all zones in each city for all years.

Using US Census, American Community Survey (2019 release) data, we calculated the race/ethnicity percentage of the population for all tracts, and then selected census tracts with 20% or more Black population. In Sacramento, there were 34 tracts with 20% or more Black population, containing 30.2% of the city’s total population. In Stockton, there were 12 tracts with 20% or more Black population, containing 13.2% of the city’s total population. In Richmond, there were 11 tracts with 20% or more Black population, containing 52% of the city’s total population.

We calculated the percent of firearm homicide victims in each city that were Black males, 35 years old or younger, since this is the population group most likely to be victims of firearm homicides nationally. We were unable to obtain detailed victim data for all years from the City of Sacramento, so we excluded that city from our analyses.

We used the monthly number of homicides in all AP cities, intervention areas, census tracts, and victims, for all years, to calculate percentages, rates (where possible), and rate/percent change from the pre-pandemic (2018 and 2019) compared to the pandemic period (2020 and 2021). We used the z-score of monthly homicides across all cities to test for variation from the mean and chi-squared tests for whether the percent changes were significant. Statistical analyses were performed using R, version 4.1.2 (R Foundation for Statistical Computing).

We also obtained from Advance Peace the number of participants, called fellows, in the program for all years and cities, as well as the number of outreach workers, called Neighborhood Change Agents. We also obtained from AP the “dosage” or the number and hours of the following interventions: 1-on-1 street level outreach engagements; client service referrals (i.e., substance abuse and anger management counseling, legal/parole/probation supports, housing, food, and employment services); general community conflicts mediated (i.e., arguments or domestic disputes), and conflicts prevented where guns were present and ready to be used, or what AP calls “cyclical and retaliatory gun violence interruptions.” We calculated the number and hours of each “dose” or intervention for all years, the mean for the pre and pandemic years, and the totals across all years. Finally, using the number of cyclical and retaliatory gun conflict interruptions and estimates of the cost of one gun homicide and shooting with an injury by the National Center for Criminal Justice Reform, we calculated whether there was any cost savings delivered to each city from the Advance Peace program from 2018 through 2021 [20].

#### Advance Peace: Care as the Antidote to Violence

Advance Peace (AP) is a community-driven gun violence reduction program that focuses on engaging the usually small number of hard-to-reach people in a city engaged in retaliatory gun violence. It

is considered a community violence intervention because they hire formerly incarcerated residents as street violence interrupters and these same interrupters mentor those at the center of gun hostilities to address some of the sources of violence and offer them life alternatives. The Advance Peace street outreach workers, called Neighborhood Change Agents (NCAs), also collaborate with existing community-based organizations and service providers to ensure their clients — those most at risk of being a victim of firearm violence — get access to healing-centered life supports, services, and opportunities [21–23]. The NCAs employed by AP use their skills in conflict resolution, anger management, cognitive behavioral therapy, and others to both diffuse community conflicts and mentor those at the center of community gun violence. The AP clients, also called fellows, are identified through a combination of NCA’s “street knowledge,” including at least 6 months of intensive street outreach data collection and information shared by local law enforcement.

Once clients are identified by the NCAs, they are enrolled in the Advance Peace, Peacemaker Fellowship, which is an 18-month intensive program of 24/7 mentorship, social service supports, life skills classes, and opportunities for “transformative” travel and financial stipends. While having some features similar to other successful community violence intervention programs, such as Cure Violence [9], Advance Peace does not work with law enforcement, focuses explicitly on helping to heal the traumas experienced by clients, not just reducing gun crime, and works with clients to co-create a Life Management Action Plan (LifeMAP) that sets short, medium, and long-term goals focused on healing, avoiding crime and conflict, and exploring positive life opportunities [24]. A key feature of AP’s healing-centered engagement is its focus on establishing trust and building-positive relationships with fellows, almost all of whom have been let-down and often dehumanized by other institutions in their communities. The AP healing-centered approach asks clients, “what happened to them” rather than “what is wrong with them,” uses proven tools such as cognitive behavioral therapy, and aims to identify and build-upon their client’s assets, not just focusing on problems [25, 26]. The Peacemaker Fellowship also recognizes that addressing trauma and focusing on healing requires collective, often community-involved experiences, so AP

organizes group life-skills classes, travel opportunities, healing circles with elders or community “OGs,” and accompanies clients to social services, not just offering them referrals.

The Advance Peace program grew out of Richmond, California’s, Office of Neighborhood Safety’s Peacemaker Fellowship. An evaluation of the Richmond, California, Peacemaker Fellowship, from 2009 to 2016 found it was associated with a 55% reduction in gun homicides and assaults [27]. The Peacemaker Fellowship was deployed in Richmond, Sacramento, and Stockton in 2018 through 2021 (AP also operated in Fresno starting in 2021). Currently, cities such as Rochester, NY, Lansing, Michigan, and Fort Worth, Texas, are also using the Advance Peace model [28].

## Findings

First, we computed the total number of firearm homicides and firearm assaults with an injury in Sacramento, Stockton, and Richmond, California, from 2018 to 2021 (Table 1). The percent change from pre-pandemic to pandemic periods ranged from +39% in Stockton and Sacramento to +6.4% in Richmond (Table 1).

In each city, the AP zones represented at least 50% or more of all gun homicides in 2018 (Table 2). By 2021, the percentage of gun homicides in AP zones had decreased in all cities to 45% in Sacramento, 24% in Stockton, and 38% in Richmond. The decrease in the number of gun homicides in the AP zones from the 2018 and 2019 to the 2020 and 2021 period was 5% for Sacramento, 52% for Stockton, and 12% for Richmond. We did not calculate rates or rate change in these zones since their populations are all below 100,000.

Figure 1 plots the z-score of the monthly firearm homicides in the AP zones for all three cities [29]. The z-score represents the number of standard deviations each data point deviates from the mean and a z-score of 0 indicates a data point is equal to the mean, and  $\mp 3$  is generally accepted to be within the expected variation. These plots suggest the pre-pandemic and pandemic periods had a similar number of firearm homicides in the Advance Peace target areas of each city.

We calculated the percent of firearm homicides in the  $\geq 20\%$  Black population census tracts for

**Table 1** Firearm homicide<sup>a</sup> and assault<sup>b</sup> count, rate and rate change Sacramento, Stockton, and Richmond, CA, 2018–2021

	Firearm homicide rate, per 100,000										Absolute rate change, 2018/2019–2020– 2021	% Change in rate, 2018/2019–2020– 2021		
	2018		2019		2020		2021		2018/2019				2020/2021	
	Homicides	Assaults	Homicides	Assaults	Homicides	Assaults	Homicides	Assaults	Homicides	Assaults			Homicides	Assaults
<b>Sacramento</b>	29	278	20	212	30	270	38	354	9.78	13.57	+ 3.79	<b>38.8%*</b>		
<b>Stockton</b>	28	366	28	406	45	221	33	270	18.01	25.22	+ 7.11	<b>39.3%*</b>		
<b>Richmond</b>	14	58	17	37	17	62	16	57	28.21	30.03	+ 1.82	<b>6.4%</b>		

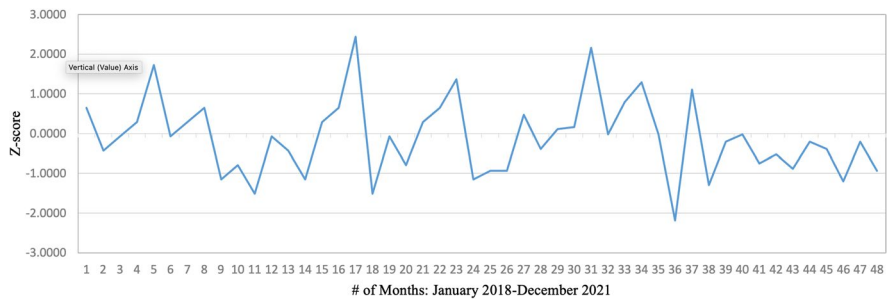
<sup>a</sup>California criminal code, 187 (a). <sup>b</sup>California criminal code, 245 (a) (2), firearm assault with injury. \*Significant difference, chi-square,  $p < 0.05$ .

**Table 2** Percent of city-wide firearm homicides in Advance Peace target neighborhoods, 2018–2021

	2018% ( <i>n</i> )	2019% ( <i>n</i> )	2020% ( <i>n</i> )	2021% ( <i>n</i> )	% Change 2018/2019 to 2019/2020
Sacramento <sup>a</sup>	52% (15)	50% (10)	53% (16)	45% (17)	– 5%
Stockton <sup>b</sup>	71% (20)	36% (10)	27% (12)	24% (8)	– 51.8%*
Richmond <sup>c</sup>	50% (7)	47% (8)	47% (8)	38% (6)	– 12.2%*

<sup>a</sup>Sacramento — Oak Park, Del Paso Heights, and South Sacramento. <sup>b</sup>Stockton — Ponce de Leon, Polos, and Townhomes; Pixie and Conway, West, and Sutter Street, Eighth, Crow Valley, and Charter Way, South. <sup>c</sup>Richmond — North, Central, and South. \*Significant difference, chi-squared,  $p < 0.05$

**Fig. 1** Z-score of monthly firearm homicides in Advance Peace target areas of Sacramento, Stockton, and Richmond, California, 2018–2021



2018–2021 in the three cities. In all cities except Richmond, there were fewer firearm homicides in the  $\geq 20\%$  Black census tracts in the pandemic 2020/2021 period compared to 2018/2019 period (Table 3). In Richmond, there was no increase in firearm homicides within the majority Black population census tracts across the 2018–2021 period. Stockton’s Black tracts had 83% fewer homicides during the pandemic compared to the pre-pandemic 2018–2019 period.

In two Advance Peace cities in 2018, over 30% of firearm homicide victims were Black males, 35 years old or younger (Fig. 2). Yet, during the pandemic period, fewer gun homicide victims were Black men 35 years old or younger compared to the previous 2 years. For example, Stockton had a 15% reduction in Black male firearm victims 35 years old or younger in 2021 compared to 2018. Richmond had

a 42% decrease in Black male firearm homicide victims 35 years old or younger in 2021 compared to 2018 (Fig. 2).

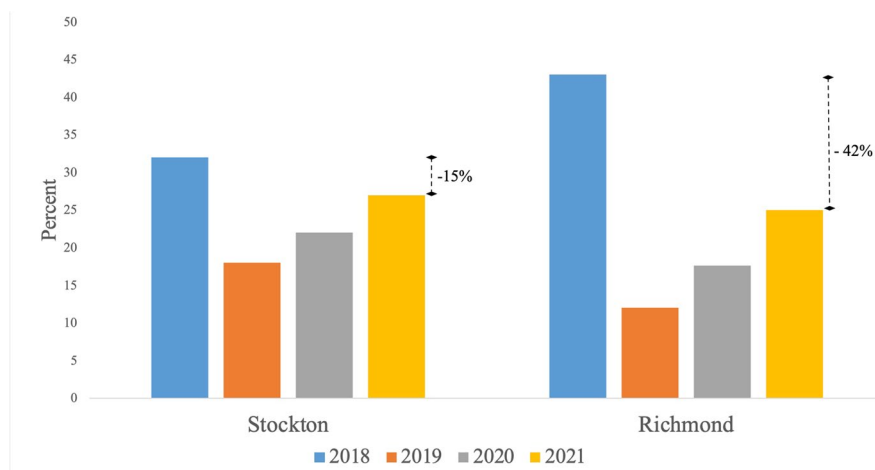
A select set of the type and number of street engagement and mentorship activities reported by Advance Peace in each city appears in Table 4. There were six outreach workers or Neighborhood Change Agents in each Advance Peace city. We found that during the pre-pandemic 2018/2019 period, AP cities had an average of 5045 street outreach engagements per year and 6639 hours of engagements per year. During the pandemic 2020/2021 period, the AP cities had an average of 4172 street outreach engagements per year, with an average of 6489 hours per year. We also calculated that pre-pandemic the AP cities mediated an average of 266 community conflicts taking an average of 480 h. During the

**Table 3** Percent of firearm homicides within census tracts with  $\geq 20\%$  Black population

	2018% ( <i>n</i> )	2019% ( <i>n</i> )	2020% ( <i>n</i> )	2021% ( <i>n</i> )	% Change 2018/2019 to 2019/2020
Sacramento	44.8% (13)	45% (9)	43.3% (13)	26% (10)	– 24.4%*
Stockton	43% (12)	46% (13)	20% (9)	30% (10)	– 83%*
Richmond	50% (7)	53% (9)	59% (10)	44% (7)	0%

\*Significant difference chi-square:  $p < 0.05$

**Fig. 2** Advance Peace cities: percent Black male, ≤ 35 years old, firearm homicide victims, 2018–2021



pandemic, the AP cities mediated an average of 256 community conflicts taking an average of 876 h. We also found that there was an average of 849 service referrals and 67 Cyclical and Retaliatory Gun Violence Interruption (CRGVI) in 2020/2021 compared to an average of 876 service referrals and 59 CRGVIs in the pre pandemic period.

As defined by Advance Peace, CRGVI are street conflicts between two or more parties where guns are present and “fingers are on the trigger,” but street outreach workers mediate and diffuse the conflict. We found that across the study period, 2018–2021, AP performed between 71 (Stockton), 103 (Richmond), and 206 (Sacramento) CRGVIs. We determined that

**Table 4** Advance Peace, select street outreach and violence interruption activities, 2018–2021

	2018 # (hrs.)	2019 # (hrs.)	2020 # (hrs.)	2021 # (hrs.)	Total 4 years # (hours)
<b>Sacramento</b>					
Participants (fellows)	67	50	47	45	<b>147<sup>b</sup></b>
Street outreach	2,830 (3,621)	8,028 (12,525)	5,008 (9,035)	2,801 (5,919)	<b>18,667 (31,100)</b>
Service referrals	198 (156)	659 (1501)	209 (1,237)	1,479 (2,474)	<b>4355 (5,368)</b>
Community conflicts mediated	94 (189)	108 (157)	174 (754)	169 (890)	<b>545 (1,990)</b>
CRGVI <sup>a</sup>	17 (88)	41 (167)	84 (645)	64 (161)	<b>206 (1,061)</b>
<b>Stockton</b>					
Participants (fellows)	29	49	34	42	<b>91<sup>b</sup></b>
Street outreach	1,942 (2,468)	6,693 (5,060)	3,850 (5,158)	3,893 (5,539)	<b>16,378 (18,225)</b>
Service referrals	168 (386)	569 (872)	284 (256)	294 (303.5)	<b>1,315 (1,817.5)</b>
Community conflicts mediated	146 (169)	206 (331.5)	116 (273)	161 (391)	<b>629 (1,164.5)</b>
CRGVI	16 (62)	31 (108.5)	15 (59)	9 (30)	<b>71 (259.5)</b>
<b>Richmond</b>					
Participants (fellows)	56	37	27	29	<b>66<sup>b</sup></b>
Street outreach	4,638 (5,887)	6,140 (10,275)	4,443 (7,917)	5,037 (5,367)	<b>20,258 (29,446)</b>
Service referrals	308 (439)	728 (873)	248 (297)	35 (50.5)	<b>1,319 (1659.5)</b>
Community conflicts mediated	209 (385)	37 (111)	88 (204)	60 (116)	<b>394 (816)</b>
CRGVI	57 (128)	16 (60)	28 (123)	2 (7)	<b>103 (318)</b>

<sup>a</sup>CRGVIs, Cyclical and Retaliatory Gun Violence Interruptions, are street conflicts between two or more parties where guns are present and “fingers are on the trigger,” but AP street outreach workers mediate the conflict and diffuse the conflict. <sup>b</sup>Some fellows continued over multiple years and not all completed the Peacemaker Fellowship

from 2018 through 2021 in Sacramento, if all CRGVI did not happen and instead the conflicts resulted in shootings with an injury, these shootings would have cost the city about \$182 M (\$888 K/injury shooting $\times$ 206). If all CRGVI were firearm homicides in Sacramento, this would have cost the city about \$494 M (\$2.4 M/gun homicide $\times$ 206). Using similar estimates for the financial costs of a shooting and gun homicide, we estimated that in Stockton the conflicts AP interrupted saved the city between \$65 M (\$962 K/injury shooting $\times$ 71) and \$177 M (\$2.5 M/gun homicide $\times$ 71). In Richmond, the savings from gun conflict interruptions during 2018–2021 were between \$96 M (\$939 K/shooting $\times$ 103) and \$257 M (\$2.5 M/gun homicide $\times$ 103). Thus, we estimate that AP may have contributed to an estimated \$65 to \$494 million dollars in public expenditure savings over the 2018–2021 period.

## Discussion

The descriptive findings presented here suggest that the presence of Advance Peace in three California cities may have helped mitigate a pandemic-related increase in firearm homicides in the neighborhoods where the program is being implemented. While the rate change of firearm homicides across the cities of Sacramento and Stockton are consistent with the national narrative that urban gun violence has increased during the pandemic, Richmond saw virtually no change from the pre-pandemic to pandemic period. This may be because the Richmond Peacemaker Fellowship program has been in operation since 2010, while the programs in Sacramento and Stockton started in 2018. Research suggests that community violence interruption is most successful when long-term, trusting relationships are developed between clients and outreach workers and programs can offer consistent, positive life opportunities from stable institutions [30, 31].

These findings suggest that having the AP program in place may have contributed to firearm homicide reductions in predominantly Black neighborhoods and among young Black men. These are surprising but welcome findings, since many community-based gun violence intervention programs had to suspend operations during the pandemic and recent research suggests that the pandemic has increased public

concern about being a victim of violence [32, 33]. The findings highlighting reductions in target neighborhoods are consistent with those of other community gun violence intervention programs [15, 34–36], but we know of no other evaluations of these programs that have demonstrated a reduction in firearm-related deaths among young Black men. As noted above, Black men under 35 years old are most frequently the victims of community firearm violence in US cities, so AP may be helping to reverse this trend.

The ability of AP to maintain its street outreach apparatus even during COVID-19 may have contributed to our observed reductions in firearm homicides. While AP did suspend some aspects of its Peacemaker Fellowship during the pandemic, the program continued to engage with families and participants in a socially distant way and used technology, such as video calls, to stay connected to their clients [37]. The “dosage” findings, namely the amount of street outreach and conflicts mediated, suggest that AP found ways to maintain its presence even during the pandemic to serve their clients and the communities where they are working [38]. We heard from AP outreach workers that during the pandemic, they took on new, additional roles in their communities, including delivering food and essential goods to clients and their families, learning how to organize and facilitate *Zoom* life-skills classes, and organizing outdoor events that balanced social distancing with the intimacy needed for trust building [39].

There are, of course, limits to these descriptive analyses. We did not include data from other non-AP neighborhoods, which might have acted as a “control” group [40]. The small numbers also make it difficult to conduct more robust statistical analyses. We intend to conduct additional analyses to confirm these preliminary findings. Furthermore, we are not suggesting that just having Advance Peace in a city contributed to the observed changes in firearm homicides. In each city where it works, Advance Peace builds robust relationships with other community-based organizations and service providers to develop an “atmosphere” of supports for their fellows, and research suggests that an increase in the number of community non-profit organizations active in violence prevention can have an impact on violent crime [41]. At the same time, we know of no other programs in these cities that were active before and during the pandemic that served the hard-to-reach people at the center of gun hostilities



that AP engages [42]. Finally, the cost savings from the potential shootings and homicides Advance Peace prevented before and during the pandemic are significant. Each AP program in the cities we studied has an annual operating budget of approximately \$1–1.5 M, so it seems the intervention is easily paying for itself through its violence interruption work.

## Conclusions

The Advance Peace program may be contributing to neighborhood-based reductions in urban gun violence and the victimization of Black men under 35 years old. More analyses are needed to associate the changes we report in firearm homicides only to AP. However, these descriptive findings might encourage other cities to experiment with the relatively low cost, but potentially high return on Black lives saved, of adopting an urban public safety approach such as Advance Peace.

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