PROJECT SAFE NEIGHBORHOODS
TRAINING AND TECHNICAL ASSISTANCE

The Project Safe Neighborhoods (PSN) Training and Technical Assistance program developed the PSN Research in Brief series to provide a summary report of scholarly articles, studies, and publications relevant to the PSN program. This seventh issue of the PSN Research in Brief series summarizes the following study by Marc Swatt, Craig Uchida, and Allison Land: ***The Effects of ShotSpotter on Gun-Crime in Denver: An Impact Evaluation***.[1]

BACKGROUND:
- ShotSpotter is an acoustic gunshot detection system (GDS) that uses a network of sensors to detect gunshots and alert police of the likely location.
- ShotSpotter was first tested in Redwood City, CA, in the mid-1990s; many large police departments have installed ShotSpotter and other GDSs.
- Empirical evidence has found that GDSs gunshot detection systems (GDS) have led to decreases in police response times but findings of the impacts on crime have been mixed[2]. Recently, several studies by non-profit organizations, government, and media have been critical of the financial and social costs of GDS relative to the demonstrated benefits[3,4,5,6].

THEORY AND PRACTICE:
- The assumption underlying GDS is that quickly detecting and accurately pinpointing the location of firearm discharge and dispatching police can lead to apprehending shooters, collecting evidence, canvasing for witnesses, and quickly providing aid to victims. Furthermore, data collected by gunshot detection technology could be used to make police deployment decisions.
- Relevant theories include deterrence theory (would-be shooters will be deterred for fear of apprehension) and the theory of selective incapacitation (rapid response will result in apprehension of shooter and preservation of evidence to identify and convict offenders).

STUDY OUTCOMES:
- ShotSpotter was installed by Denver Police Department (DPD) at four sites with different start dates. Control groups were assigned to each of the four sites covered by ShotSpotter.
- Outcome measures included incidents of robbery with a firearm, aggravated assault, and a composite measure of "serious violent crime". Analysis included DPD data for 2010–2019.
- The analysis found ShotSpotter was associated with reductions in some crimes in three of the four locations. However, similar reductions were observed at other sites during the same time periods. In other words, there was mixed evidence for ShotSpotter's impact on violent firearms crimes.

1 Swatt, M. L., C. D. Uchida, and A.Q. Land. (2020). *The Effects of ShotSpotter on Gun-Crime in Denver: An Impact Evaluation. Justice & Security Strategies Inc.*
2 The Impact of Gunshot Detection Technology on Gun Violence in Kansas City and Chicago: A Multi-Pronged Evaluation by Eric L. Piza, George O. Mohler, Jeremy G. Carter, David N. Hatten, Nathan T. Connealy, Rachael Arietti, Jisoo Cho, Emily Castillo. Submitted to DOJ January 2024 (Award # 2019-R2-CX-0004)
3 Office of the Inspector General. (2021, August 24). OIG finds that ShotSpotter alerts rarely lead to evidence of a gun-related crime and that presence of the technology changes police behavior. City of Chicago. https://igchicago.org/2021/08/24/oig-finds-that-shotspotter-alerts-rarely-lead-to-evidence-of-a-gun-related-crime-and-that-presence-of-the-technology-changes-police-behavior/.
4 Schuba, T., and Hendrickson, M. (2024, February 8). Top prosecutor says ShotSpotter has little impact on gun violence cases as mayor faces pressure to renew contract. Chicago Sun-Times. https://chicago.suntimes.com/crime/2024/2/8/24066228/top-prosecutor-shotspotter-chicago-mayor-renew-contract-deadline-renew.
5 Scott, J. (2023, August 24). Data shows ShotSpotter leads to dead ends and wasted resources in Pasadena. Knock LA. https://knock-la.com/data-shows-shotspotter-leads-to-dead-ends-and-wasted-resources-in-pasadena/.
6 Cheng, Y. (2023, July 11). Houston's gunshot alert system isn't curbing violence, data shows. Houston Chronicle. https://www.houstonchronicle.com/news/investigations/article/houston-gun-alert-police-delays-18117579.php.