Degli Esposti and colleagues have advanced the firearm injury literature with their study of changes in county-level firearm mortality from 1989 to 2019. By pooling data across neighboring counties with Bayesian spatial models, the authors generate county-level estimates of firearm mortality, even where outcomes are sparse. They use these estimates to identify counties that have deviated from national trends over the 30-year study period. Despite fairly small changes in overall firearm mortality from 1989 to 2019, the authors find important patterns. Firearm homicides have declined overall, but numerous high outliers have trailed behind this trend, including Baltimore, Maryland, and many urban counties in the Southeast US. Firearm suicides have increased overall, associated with widespread increases across rural counties, especially in the West and Midwest.

Degli Esposti and colleagues’ findings underscore the need to use national data to improve our understanding of localized firearm injury patterns. As the authors note, prior work has often been designed to infer the effects of state-level firearm policies, using states as the geographical unit of analysis. However, state-level policy environment is not necessarily a prime factor associated with firearm injuries: for instance, researchers have found only modest associations between state-level firearm laws and firearm injury rates in urban counties, where most US residents live. Studying geographical units smaller than states is necessary for understanding the community-level factors that influence risk and directing resources to the right places.

Another strength of Degli Esposti and colleagues’ study is that it examines trends over many years, from a period (1989-1994) of particularly high firearm homicide rates, to the period (2015-2019) just before the COVID-19 pandemic, when an unprecedented spike in firearm homicides occurred. The authors’ finding that US residents continued to die from firearm injuries at approximately the same rates, despite the “great crime decline” of the mid-to-late 1990s, is striking. Yet the authors are also able to document a repatterning of firearm mortality over that period, with a growing share of firearm deaths arising from homicide in majority-Black urban counties and from suicide in majority-White rural counties. These spatiotemporal trends point toward several key issues for research and practice.

First, we must improve our understanding of how structural racism contributes to firearm injury outcomes. Prior work identifies racialized economic deprivation as a powerful predictor of community firearm violence levels. Moreover, homicide declines since 1990 appear to have disproportionately benefited the neighborhoods that were safest (ie, the most racially and economically privileged) at baseline, at least in Chicago. In other words, structural forces may have excluded communities of color from the full benefits of improved social conditions over this period, whether through physical disinvestment, economic exclusion, mass incarceration, or other processes. If so, one would expect majority-Black, high-poverty counties to lag behind the firearm homicide declines observed in other US counties. Indeed, this is exactly what Degli Esposti and colleagues find. Additional research must explore this pattern further. More broadly, building up our understanding of the relationship between structural racism and firearm violence could eventually inform prevention strategies, such as by identifying key leverage points within the systems that perpetuate violence-related disparities.

In the meantime, firearm violence requires an expanded public health response, particularly amidst the pandemic-related surge. Degli Esposti and colleagues identify a regional cluster of urban counties in the Southeast that may require particular attention. One promising development is that several of the authors’ high outlier cities (Memphis and Baton Rouge in the Southeast, along with...
Baltimore) are included in a federal initiative to support programs delivering community violence intervention, a prevention strategy in which credible messengers help resolve disputes and connect individuals with social services.\(^5\) Still, important knowledge gaps persist for other community-level interventions. For example, despite strong evidence that remediating vacant properties can reduce violence, according to research in Northeast and Midwest cities, this approach has yet to show clear benefits in the Southeast.\(^6\) Such strategies may need to be tailored to address regionally specific patterns of physical disinvestment and their effects on firearm violence.

Finally, the long-term trends in firearm suicide are keenly troubling. Firearm purchasing has surged during the pandemic, with the potential for a long tail of further increased suicide risk in the coming years. The patterning of firearm suicide identified by Degli Esposti et al\(^1\)—high outliers dispersed among predominantly rural counties—tends to point toward the need for changes to policies and systems, rather than toward geographically targeted programs. One example of a scalable systems change is promoting safe firearm storage during routine pediatric medical care, potentially reducing youth suicide risk by limiting access to improperly stored firearms.\(^7\)

To build on the innovative work from Degli Esposti and colleagues,\(^1\) researchers must further examine the causes of regional differences in firearm violence, including the factors contributing to high incidence in Southeast cities. These studies should account for the differences in social and historical context in which structural racism manifests—for example, Southern cities display different patterns of residential racial segregation than Northeast and Midwest cities, owing to differences in the forms of institutional discrimination used to maintain White dominance in each region. Additionally, future work should bring spatiotemporal analytical approaches to even smaller geographical levels, including cities, neighborhoods, and city blocks. Whenever possible, this work should be conducted in partnership with community organizations and local agencies adopting a public health approach. Research and action must be closely aligned to curb the unrelenting epidemic of firearm mortality in the US.

**ARTICLE INFORMATION**

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