

hospital A's other clinics, eliminating the need for a more time-consuming review of hundreds of paper records.⁶ Extensive contact tracing was necessary for nonisolated cases, placing a substantial burden on public health resources and health-care facilities.

This outbreak continues the trend of measles outbreaks that have been linked to importation; although measles has been eliminated in the Americas, it continues to circulate in all other regions.^{5,7-9} The measles virus isolated from the index patient was determined by CDC to be genotype D8, a genotype common in India, where measles remains endemic.³ A history of recent international travel should increase clinical suspicion for diseases rare in the United States but common elsewhere.

Despite delays in diagnoses and lack of isolation precautions, measles transmission during this outbreak was limited, possibly because of the high rates of measles immunization among members of this community, the fact that the infected children did not attend school or child care, and intense control efforts by public health officials and health-care facilities. Population immunity of 92%-94% is necessary to prevent future measles outbreaks because importations are likely.¹⁰ None of the three secondarily infected children had been vaccinated for measles; the child aged 11 months was too young for routine vaccination, and the index patient and his brother were unvaccinated by parental choice.

During this outbreak, hospital A tested all of its remaining employees who did not have measles serologic results documented; those few who did not have serologic evidence of immunity were vaccinated. All health-care facilities should follow ACIP and HICPAC guidelines that health-care facilities should ensure that their employees are fully vaccinated for measles or have laboratory evidence of immunity.[‡] This can minimize the need for emergency testing and furlough of employees exposed to measles and associated outbreaks.

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 ‡ACIP recommendations are available at <http://www.cdc.gov/mmwr/pdf/rr/rrr6007.pdf>.

**Gang Homicides—
Five U.S. Cities,
2003-2008**

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2 tables omitted

GANG HOMICIDES ACCOUNT FOR A SUBSTANTIAL proportion of homicides among youths in some U.S. cities; however, few surveillance systems collect data with the level of detail necessary to gang homicide prevention strategies. To compare characteristics of gang homicides with nongang homicides, CDC analyzed 2003-2008 data from the National Violent Death Reporting System (NVDRS) for five cities with high levels of gang homicide. This report describes the results of that analysis, which indicated that, consistent with similar previous research, a higher proportion of gang homicides than other homicides involved young adults and adolescents, racial and ethnic minorities, and males. Additionally, the proportion of gang homicides resulting from drug trade/use or with other crimes in progress was consistently low in the five cities, ranging from zero to 25%. Furthermore, this report found that gang homicides were more likely to occur with firearms and in public places, which suggests that gang homicides are quick, retaliatory reactions to ongoing gang-related conflict. These findings provide evidence for the need

to prevent gang involvement early in adolescence and to increase youths' capacity to resolve conflict nonviolently.

NVDRS is an active, state-based surveillance system that collects violent death data from multiple sources, such as death certificates, coroner/medical examiner records, and various law enforcement reports (e.g., police reports and supplementary homicide reports [SHRs]). As of 2008, NVDRS has operated in 17 U.S. states.* This report includes 2003-2008 data from large cities in NVDRS states. Only cities ranked within the 100 largest in the United States were examined because gang problems more frequently occur in large cities.^{1,2} Cases of gang homicide were defined as homicides reported to have been either precipitated by gang rivalry or activity† or perpetrated by a rival gang member on the victim.

Because a city might be served by more than one law enforcement agency and each agency might have its own definition of gang-related crime, this analysis used only data from municipal police departments. Municipal police departments often have a jurisdiction congruent with city limits. Geographic areas matching municipal police jurisdictions were identified by geographic codes (either federal information processing standards or zip codes) for location of injury in NVDRS. U.S. Census Bureau 2000 population estimates were determined for each city using the *Law Enforcement Agency Identifiers Crosswalk*.³ For each of the 33 eligible large cities, gang homicide counts were averaged for the period 2003-2008 and divided by the population estimates to calculate an average annual gang-related mortality rate. Cities with gang-related mortality rates equal to or greater than one standard deviation above the average were selected for further analyses.

Five cities met the criterion for having a high prevalence of gang homicides: Los Angeles, California; Oklahoma City, Oklahoma; Long Beach, California; Oakland, California; and Newark, New Jersey. In these cities, a total of 856 gang and 2,077 nongang

What is already known on this topic?

Gang homicides account for a substantial proportion of homicides among youths in some U.S. cities; however, few surveillance systems collect the level of detail necessary to inform gang homicide prevention strategies.

What is added by this report?

This report was the first to use city-level data from CDC's National Violent Death Reporting System (NVDRS) to compare gang homicide to other homicide types. Results showed that gang homicides were more likely to occur on the street and involve young, racial/ethnic minority, male victims and firearms than other homicides. Additionally, data showed that gang homicides commonly were not preceded by drug trade and use or with other crimes in progress in Los Angeles, Long Beach, and Oakland, California.

What are the implications for public health practice?

Whereas many of the existing efforts directed at reducing gang homicide focus on suppression and control of gangs, drug trade, and other crimes, the results of this report indicate a need for complementary prevention efforts. Specifically, prevention programs should target adolescents before they reach the ages of 15-19 years to prevent them from joining gangs and being put at risk for gang violence in the first place. Further, to prevent the retaliation that results from gang conflict, programs might benefit from increasing youths' capacity to resolve conflict nonviolently. Although these prevention strategies seem promising, rigorous evaluation still is needed to support the effectiveness of these programs.

homicides were identified and included in the analyses. Comparisons of the characteristics of gang and nongang homicides were made using Fisher's exact tests for all the variables except mean age, which required a t-test.

The characteristics included basic demographics of the victims, descriptive information on the homicide event, and circumstances precipitating the event.

Gang homicide victims were significantly younger than nongang homicide victims in all five cities. Whereas 27%-42% of the gang homicide victims were aged 15-19 years, only 9%-14% of the nongang homicide victims were in this age group. Approximately 80% of all homicide victims were male in each city; however, Los Angeles, Newark, and Oklahoma City still reported significantly higher proportions of male victims in gang homicide incidents compared with nongang homicide incidents. In Los Angeles and Oakland, a significantly higher proportion of gang victims were Hispanic and, in Oklahoma City, a significantly higher proportion of gang victims were non-Hispanic black compared with nongang victims.

In at least three of the five cities, gang homicides were significantly more likely than nongang homicides to occur on a street and involve a firearm. More than 90% of gang homicide incidents involved firearms in each city. For nongang homicides, firearms were involved in 57%-86% of the incidents. Gang homicides also were most likely to occur in afternoon/evening hours in the majority of the five cities; however, comparisons were not examined because the data were missing for 23% of nongang homicide incidents. In Los Angeles, Oakland, and Oklahoma City, gang homicides occurred significantly more frequently on weekends than did nongang homicides.

With regard to the circumstances preceding the homicide, drive-by shootings were significantly more likely to contribute to gang homicides than other types of homicide in Los Angeles and Oklahoma City. Nearly one quarter of gang homicides in these cities were drive-by shootings, compared with 1%-6% of nongang homicides. A significantly smaller proportion of gang versus nongang homicides were precipitated by another crime in progress in the California cities, ranging from zero to 3%

of gang homicides, compared with 9% to 15% of nongang homicides. Further, in Los Angeles and Long Beach, less than 5% of all homicides were associated with known drug trade/use. Although data for Newark and Oklahoma City indicated that 20%-25% of gang homicides involved drug trade/use; Newark was the only city that had a significantly higher proportion of gang versus nongang homicides that involved drug trade/use.

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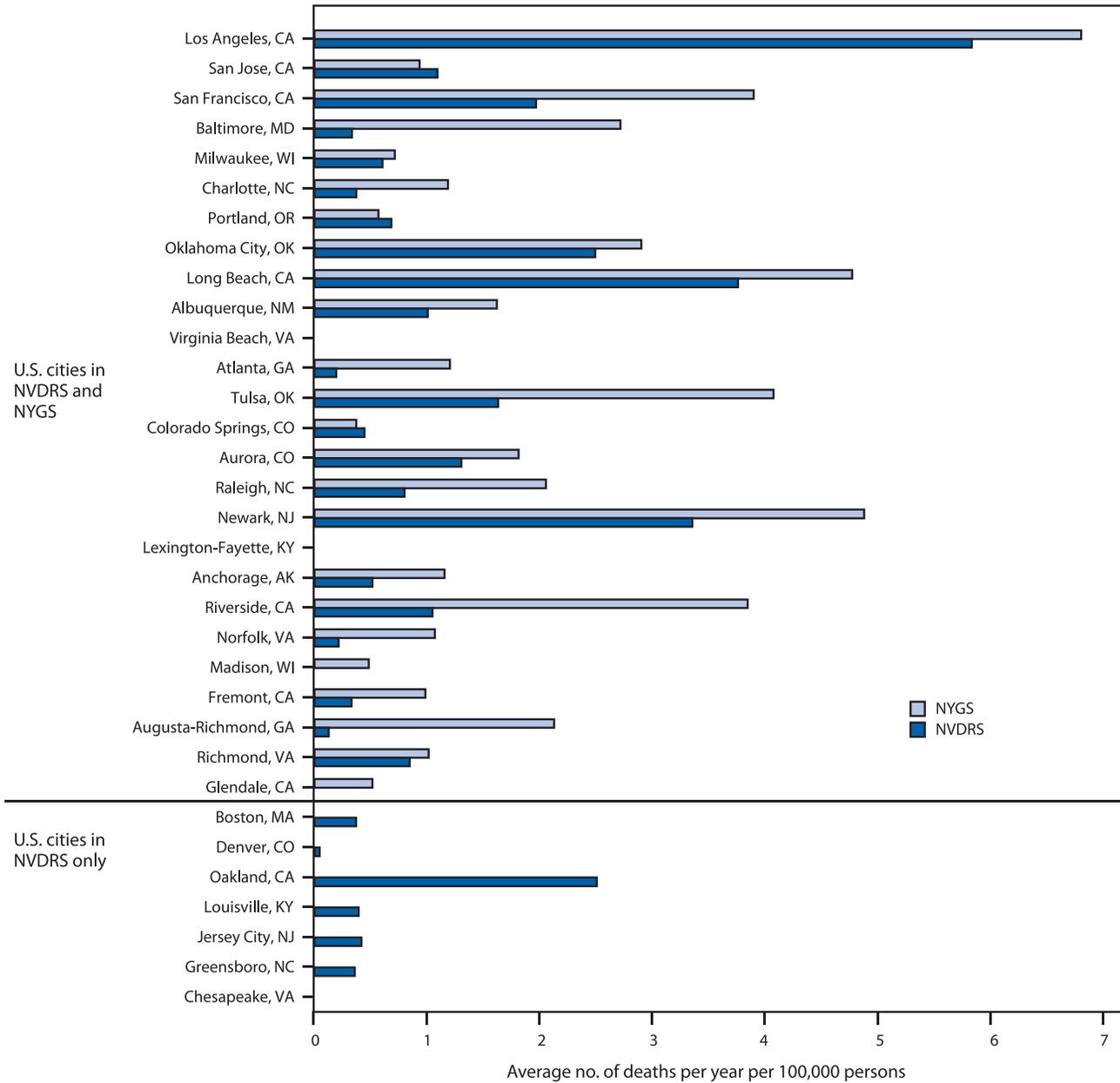
CDC Editorial Note: Homicide is the second leading cause of death among persons aged 15-24 years in the United States.⁴ In some cities, such as Los Angeles and Long Beach, gang homicides account for the majority of homicides in this age group (61% and 69%, respectively). The differences observed in gang versus nongang homicide incidents with regard to victim demographics, place of injury, and the use of drive-by shootings and firearms are consistent with previous reports.⁵ The finding that gang homicides commonly were not precipitated by drug trade/use or other crimes in progress also is similar to previous research; however, this finding challenges public perceptions on gang homicides.⁵ The public often has viewed gangs, drug trade/use, crime, and homicides as interconnected factors; however, studies have shown little connection between gang homicides and drug trade/use and crime.⁵ Gangs and gang members are involved in a variety of high-risk behaviors that sometimes include drug and crime involvement, but gang-related homicides usually are attributed to other circumstances.⁶ Newark was an exception by having a higher proportion of gang homicides being drug-related. A possible explanation of this divergent finding could be that Newark is experiencing homicides by gangs formed specifically for drug trade.

Overall, these findings support a view of gang homicides as retaliatory violence. These incidents most often result when contentious gang members pass each other in public places and a conflict quickly escalates into homicide with the use of firearms and drive-by shootings.

The findings in this report are subject to at least two limitations. First, the accuracy of gang homicide estimates in NVDRS and other surveillance systems is unknown. As a point of reference, CDC compared NVDRS's gang homicide counts to another independent surveillance system, the National Youth Gang Survey

(NYGS). NYGS[‡] is a nationally representative annual survey of law enforcement agencies, including all large cities.² Most cities included in this report also had high gang-related mortality rates in NYGS (FIGURE). Second, the gang homicide case definition can vary by law enforcement agency, which might introduce a

FIGURE. Estimated gang-related mortality rates among 33 U.S. cities included in the National Violence Death Reporting System (NVDRS) and/or the National Youth Gang Survey (NYGS), 2003–2008*



* Cities are listed in descending order by population size. City population estimates were determined by 2000 U.S. Census levels. Cities were in the 17 states participating in NVDRS during 2003–2008 and ranked among the 100 largest cities in the United States based on U.S. Census Bureau statistics. Surveillance years for participating cities vary.

misclassification bias. For instance, organized crime gangs, although distinct from youth street gangs are included in some but not all definitions of gang homicide. In addition, some agencies report according to a gang member—based definition (i.e., homicides involving a gang member) whereas others report according to a gang motive—based definition (i.e., the homicide further the goals of a gang).⁷

In conclusion, gang homicides are unique violent events that require prevention strategies aimed specifically at gang processes. Preventing gang joining and increasing youths' capacity to resolve conflict nonviolently might reduce gang homicides.⁸ Rigorous evaluation of gang violence prevention programs is limited; however, many promising programs exist.⁹ In terms of primary prevention, the Prevention Treatment Program, which includes child training in prosocial skills and self-control, has shown reductions in gang affiliation among youths aged 15 years.¹⁰ Secondary prevention programs that intervene when youths have been injured by gang violence, such as hospital emergency department intervention programs, might interrupt the retaliatory nature of gang violence and promote youths leaving gangs. Finally, promising tertiary prevention programs for gang-involved youths might include evidence-based programs for delinquent youths that provide family therapy to increase the youths' capacity to resolve conflict.

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*Seven states joined in 2003 (Alaska, Maryland, Massachusetts, New Jersey, Oregon, South Carolina, and Virginia); six states joined in 2004 (Colorado, Georgia, North Carolina, Oklahoma, Rhode Island, and Wisconsin), and four states joined in 2005 (California, Kentucky, New Mexico, and Utah). Five California counties are included in NVDRS. The three counties in northern California began data collection in 2004. The two counties in southern California began data collection in 2005.

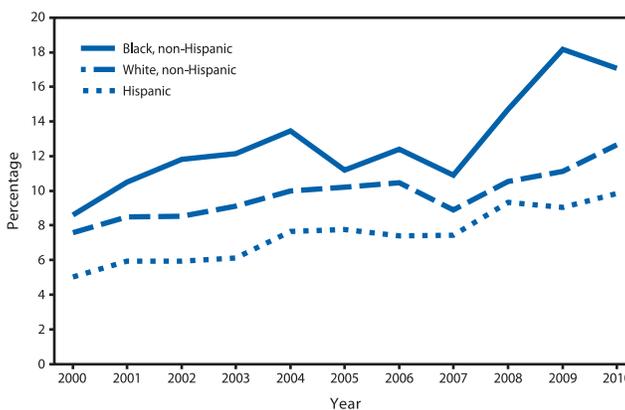
†Homicides deemed to have been precipitated by gang rivalry and activity were identified based on variables captured in NVDRS or variables captured in SHRs, a data source for NVDRS. The relevant variables for NVDRS include "gang activity" or "gang rivalry" listed as a preceding circumstance. The relevant preceding circumstance variable in SHRs included "juvenile gang killing" and "gangland killing." Whereas standard NVDRS and SHR variables were used to capture cases, these variables are largely determined by the law enforcement narratives, and law enforcement agencies might have different criteria for listing gang activity on a report.

‡NYGS instructs respondents to provide the number of gang-related homicides recorded (not estimated) by each law enforcement agency and to use the following definition for a youth gang: "a group of youths or young adults in your jurisdiction that you or other responsible persons in your agency or community are willing to identify as a gang." This definition excludes motorcycle gangs, hate or ideology groups, prison gangs, and exclusively adult gangs.

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Children Aged ≤17 Years with Eczema or Any Kind of Skin Allergy,* by Selected Races/Ethnicities† — National Health Interview Survey, United States, 2000–2010



* Estimates are based on household interviews of a sample of the civilian, noninstitutionalized U.S. population. One child aged ≤17 years was randomly selected per family. A parent or other knowledgeable adult provided information for the child. Prevalence of eczema or skin allergy was based on responses to the following question: "During the past 12 months, has [child] had eczema or any kind of skin allergy?" Unknowns with respect to eczema or skin allergy were excluded from the denominators.

† White, non-Hispanic and black, non-Hispanic categories are limited to children categorized as of a single race. Hispanics might be of any race.

From 2000 to 2010, the prevalence of eczema or any kind of skin allergy increased among non-Hispanic black, non-Hispanic white, and Hispanic children in the United States. The prevalence of eczema or skin allergy increased from 8.6% to 17.1% among non-Hispanic black children, from 5.0% to 9.9% among Hispanic children, and from 7.6% to 12.6% among non-Hispanic white children.

Source: National Health Interview Survey, 2000–2010. Available at <http://www.cdc.gov/nchs/nhis.htm>.

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