RESEARCH LETTER

Trends in Mortality From COVID-19 and Other Leading Causes of Death Among Latino vs White Individuals in Los Angeles County, 2011-2020

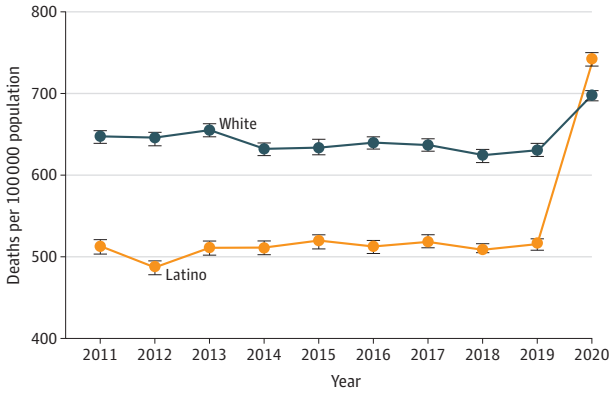
Latino individuals in the US have experienced lower rates of mortality than non-Latino White individuals despite higher rates of poverty, often referred to as the "Latino mortality paradox."[1,2] This paradox may be attributable to behavioral and social factors, including strong family ties and support networks, rather than to a healthy migrant effect or to immigrants returning to their native countries near the end of life.[2]

Los Angeles County, California, has the largest Latino population of any local jurisdiction in the US, comprising 49% of the county's 10 million residents in 2019 vs 28% for non-Latino White individuals. We assessed trends in mortality before and during the COVID-19 pandemic in the Latino population relative to the non-Latino White population in the county.

Methods | We used death certificate data from the California Comprehensive Death Files (CCDF) and midyear population estimates to calculate deaths and annual age-adjusted mortality rates (AAMRs; adjusted to the US 2000 standard population) among Latino and non-Latino White residents of Los Angeles County in 2011 through 2019 (prepandemic period) and from January through December 2020 (pandemic period; provisional mortality data). We classified race and ethnicity according to 2 predefined CCDF variables indicating Hispanic origin and mutually exclusive racial categories. We considered those of Hispanic origin as Latino regardless of race. AAMRs were also calculated for COVID-19 and the 5 other leading causes of death in the Latino population in 2020 based on the *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision*–coded underlying cause of death. Corresponding AAMRs were calculated for the Latino population in 2019 and for the White population in 2019 and 2020. We compared AAMRs using AAMR ratios. For the calculation of 95% CIs for the AAMRs, we used the approach recommended by the National Center for Health Statistics for vital statistics.[3] For the calculation of 95% CIs for the AAMR ratios, we followed the standard procedure used for deriving 95% CIs for risk ratios. We defined statistical significance as a 95% CI not crossing 1. All analyses were performed using SAS, version 9.4 (SAS Institute Inc). The study was exempted from review and informed consent was deemed not applicable by the Los Angeles County Department of Public Health's institutional review board.

Results | Of 465 389 deaths included in the analysis, 37.5% occurred among Latino individuals, 62.5% among White individuals, 51.9% among males, and 48.1% among females. From 2011 through 2019, annual AAMRs were lower in the Latino population than in the White population (516.0 deaths vs 630.3 per 100 000 in 2019; AAMR ratio, 0.82; 95% CI, 0.80-0.83), but in 2020 the AAMR increased to 741.7 deaths per 100 000 in the Latino population vs 699.0 deaths per 100 000 in the White population (AAMR ratio, 1.06; 95% CI, 1.04-1.08) (**Figure**).

Figure. Age-Adjusted Mortality Rates Among Latino and Non-Latino White Residents of Los Angeles County, 2011-2020



Trend lines are based on an analysis of 465 389 death certificate records. Deaths from all causes that occurred among Latino and non-Latino White individuals from 2011 to 2020 were included in the analysis. Age-adjusted mortality rates (per 100 000 population) were calculated, with adjustment made to the 2000 US standard population. Error bars indicate 95% CIs.

Among Latino individuals, COVID-19 was the leading cause of death in 2020, with an associated AAMR of 160.1 deaths per 100 000, compared with 51.7 deaths per 100 000 among White individuals (AAMR ratio, 3.10; 95% CI, 2.93-3.27). From 2019 to 2020, AAMRs increased among Latino individuals for heart disease (AAMR ratio, 1.19; 95% CI, 1.15-1.23) and for diabetes (AAMR ratio, 1.22; 95% CI, 1.14-1.30) without accompanying statistically significant increases among White individuals (**Table**).

Discussion | The long-standing mortality advantage in the Latino population relative to the White population in Los Angeles County was reversed in 2020. Deaths from COVID-19 accounted for most of this reversal. Latino individuals also experienced an increase in heart disease and diabetes AAMRs from 2019 to 2020 that was not observed among White individuals.

The findings may reflect increased risks of SARS-CoV-2 infection among Latino individuals associated with crowded living conditions and low-wage employment in unsafe work settings, as well as increased risks of disease progression associated with a higher prevalence of comorbidities.[4] The increases in mortality from heart disease and diabetes among Latino individuals may in part reflect reduced access to medical services, including preventive services.[5]

Table. Leading Causes of Death Among Latino Residents in 2020 With Associated Numbers of Death and Age-Adjusted Mortality Rates in 2019 and 2020 Among Latino and Non-Latino White Residents of Los Angeles County

2020 Leading causes of death[a]	Latino residents[b]					White residents[b]				
	2019		2020		2020-2019 AAMR ratio (95% CI)[c]	2019		2020		2020-2019 AAMR ratio (95% CI)[c]
	Deaths	AAMR (95% CI)[c]	Deaths	AAMR (95% CI)[c]		Deaths	AAMR (95% CI)[c]	Deaths	AAMR (95% CI)[c]	
COVID-19	0		5875	160.1 (155.9-164.4)		0		2374	51.7 (49.5-53.8)	
Heart disease	4029	115.9 (112.2-119.6)	4788	138.1 (134.0-142.1)	1.19 (1.15-1.23)	8029	168.4 (164.7-172.2)	8066	170.4 (166.5-174.2)	1.01 (0.97-1.05)
Malignant neoplasms	4205	114.6 (110.9-118.2)	4222	115.2 (111.6-118.9)	1.01 (0.97-1.04)	6354	143.2 (139.6-146.8)	6076	137.4 (133.8-140.9)	0.96 (0.92-1.00)
Unintentional injuries	1163	24.5 (23.0-26.0)	1496	30.6 (29.0-32.2)	1.25 (1.16-1.34)	1033	30.7 (28.7-32.7)	1294	39.4 (37.2-41.7)	1.28 (1.18-1.40)
Diabetes	1225	34.0 (32.0-36.0)	1482	41.4 (39.2-43.6)	1.22 (1.14-1.30)	838	18.9 (17.6-20.2)	879	19.6 (18.2-20.9)	1.04 (0.92-1.17)
Cerebrovascular diseases	1160	34.3 (32.3-36.3)	1212	35.5 (33.4-37.5)	1.03 (0.97-1.11)	1510	31.7 (30.1-33.3)	1511	32.2 (30.5-33.8)	1.02 (0.93-1.11)

Abbreviation: AAMR, age-adjusted mortality rate.

[a] For each cause-of-death category, the following *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* codes for underlying cause of death were used: COVID-19, U071; heart disease, I00-I09, I11, I13, I20-I51; malignant neoplasms, C00-C97; unintentional injuries, V01-X59, Y85-Y86; diabetes, E10-E14; cerebrovascular diseases, I60-I69.

[b] Race and ethnicity were classified according to 2 predefined variables in the California Comprehensive Death Files database: one indicating Hispanic origin and the other specifying mutually exclusive racial categories. All individuals of Hispanic origin were categorized as Latino regardless of race, whereas White individuals were limited to only those who were not of Hispanic origin.

[c] AAMR is per 100 000 population, with adjustment made to the 2000 US standard population.

Study limitations include a focus on a largely urban Latino population in 1 county and possible incomplete or misclassified cause of death and race and ethnicity information. Inequities in COVID-19 mortality may vary across geography and Latino subpopulations; therefore, these findings may not be generalizable to other US jurisdictions. Further studies are needed to characterize Latino mortality in other geographic settings during the COVID-19 pandemic relative to historical mortality patterns.

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Acquisition, analysis, or interpretation of data: All authors.
Drafting of the manuscript: Simon, Ho.
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COMMENT & RESPONSE

Poloxamer 188 vs Placebo for Painful Vaso-occlusive Episodes in Children and Adults With Sickle Cell Disease

To the Editor In their recent study,[1] Dr Casella and colleagues found no significant difference between poloxamer 188 and placebo for management of painful vaso-occlusive episodes in children and adults with sickle cell disease (SCD).

In the 1990s, poloxamer 188 (then called RheothRx) was investigated at similar and higher doses in a number of clinical trials involving patients with SCD in acute vaso-occlusive crisis, cerebral malaria, and suspected acute myocardial infarction (AMI). In a large clinical trial involving patients with