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## Rapid report

## Trends in the distribution of COVID-19 deaths by age and race/ethnicity – United States, April 4–December 26, 2020

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## Introduction

The coronavirus disease 2019 (COVID-19) pandemic has disproportionately affected racial and ethnic minority groups [1–5]. COVID-19 infection and mortality rates are higher among Hispanic/Latino, non-Hispanic Black, and non-Hispanic American Indian or Alaska Native (AI/AN) populations than non-Hispanic White populations [5]. Although most U.S. COVID-19 deaths have occurred among adults aged  $\geq 65$  years, younger persons represent a larger percentage of COVID-19 deaths in Hispanic/Latino, non-Hispanic Black, and non-Hispanic AI/AN populations [1]. These racial/ethnic groups also have younger age distributions across the population generally [3], and face increased risk of COVID-19 infection and related morbidity and mortality as a result of many different factors such as the degree of occupational exposure, housing

or residential risk factors, the prevalence of preexisting health conditions, reduced access to care, and structural racism [1–4].

The proportion of deaths by age and race/ethnicity has changed over the course of the pandemic, with a recent report demonstrating growing percentages among the Hispanic population from May through August 2020 [5]. However, that report did not examine changes in the distribution of COVID-19 deaths by race/ethnicity across age groups (or vice versa) over the course of the pandemic in 2020. Moreover, it is unknown how patterns by age and race/ethnicity may have changed more recently, over the most recent wave of the pandemic occurring at the end of 2020. To examine this, we describe weekly trends in COVID-19 deaths by age and race/ethnicity from April through December 26, 2020.

## Methods

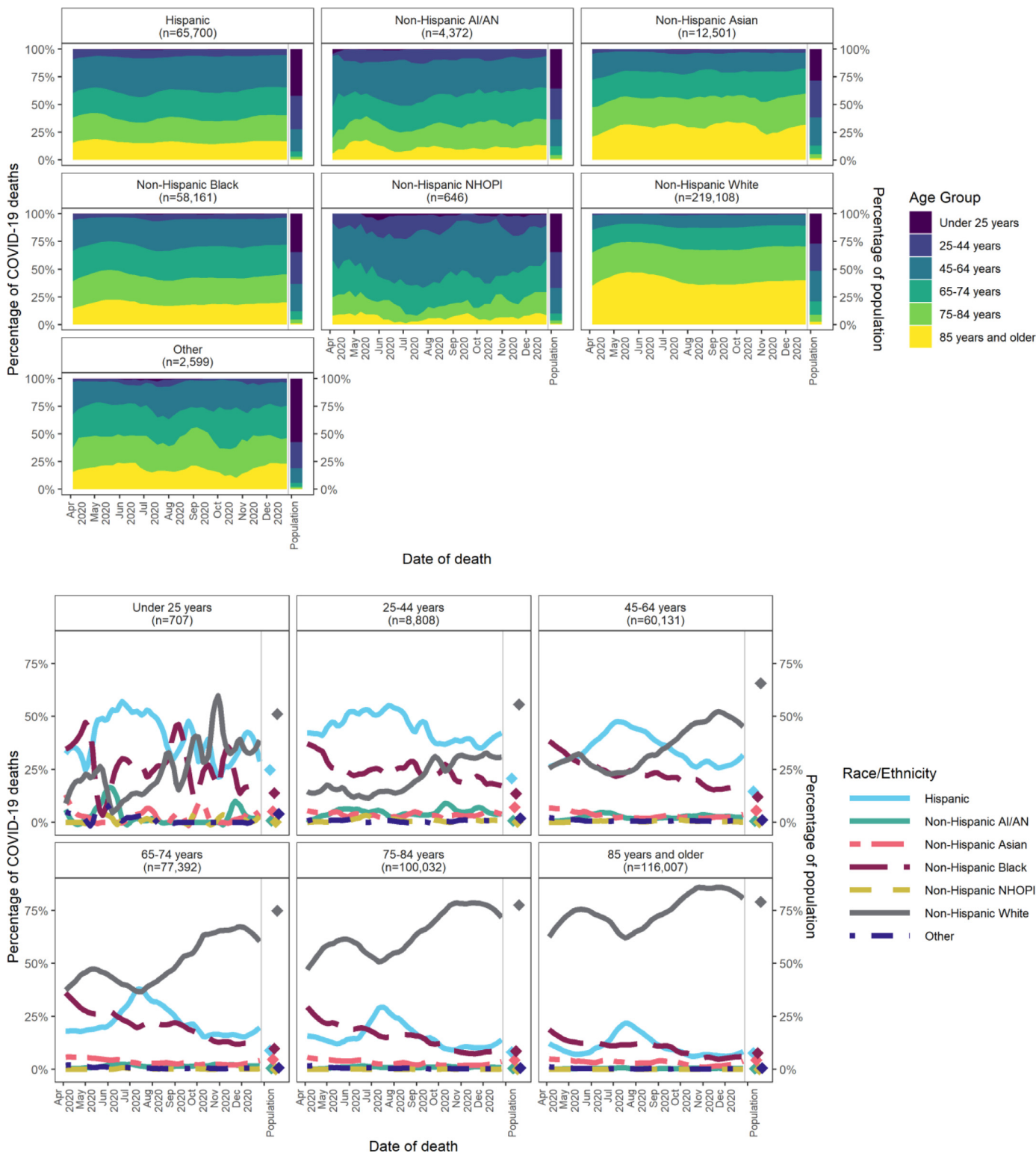
Using data from the National Vital Statistics System on 363,087 U.S. COVID-19 deaths occurring from the weeks ending April 4–December 26, 2020 [6], COVID-19 deaths were identified based on the *International Classification of Diseases, Tenth Revision* code U07.1 appearing as a contributing or underlying cause of death on the death certificate [6]. Of these, more than 90% list COVID-19 as the underlying cause of death (90% among non-Hispanic white; 92% among non-Hispanic AI/AN, non-Hispanic Asian, non-Hispanic Black, and non-Hispanic other/unknown race;

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Disclaimer: The findings and conclusions in this article are those of the authors and do not necessarily represent the official position of the National Center for Health Statistics, Centers for Disease Control and Prevention.

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**Fig. 1.** Weekly percent of COVID-19 deaths in each age group, by race/ethnicity (top); and percent in each racial/ethnic group, by age (bottom) – April 4, 2020 to December 26, 2020.

NOTES: The weekly percentage distribution of COVID-19 deaths is shown using a 4-week rolling sum of COVID-19 deaths to mitigate the week-to-week variability in the percentages. Abbreviations: NHOPI = Native Hawaiian or other Pacific Islander; AI/AN = American Indian or Alaska Native. The right-hand side of each figure shows the age distribution in the population. Death data were from the National Vital Statistics System, and population distributions were from the 2019 Census estimates. Dashed lines are shown in the bottom figure to distinguish between groups where the lines may overlap.

and 95% among Hispanic) [7]. We calculated the percentage distribution of COVID-19 deaths by age group (<25, 25–44, 45–64, 65–74, 75–84, and ≥85 years) within each race/ethnicity group (i.e., Hispanic, non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, non-Hispanic AI/AN, non-Hispanic Native Hawaiian or other Pacific Islander [NHOPI], and non-Hispanic multiple race or unknown [other]), based on rolling 4-week sums to mitigate week-to-week variability in the percentages. Similarly, we calculated the percentage distribution of COVID-19 deaths by race/ethnicity, within each age group.

## Results

Figure 1 illustrates the percentage distribution of COVID-19 deaths by age within each racial/ethnic group over time, along with the population age distribution for contextual reference, beginning in April when the number of COVID-19 deaths first peaked. Among the non-Hispanic White population, people aged ≥85 years accounted for 41%–47% COVID-19 deaths during April–June; this percentage decreased to 36%–38% during August–October and rose to 40% in December. The age distribution for COVID-19 deaths among the non-Hispanic Asian population was similar to the non-Hispanic White population, with the largest percentage of deaths occurring in people aged ≥85 from April through October. Among the non-Hispanic Black population, most deaths occurred in younger persons aged 45–64, 65–74, and 75–84 years, with each age group consistently accounting for 21%–29% of deaths during April–December. The Hispanic and non-Hispanic AI/AN populations exhibited a similar distribution, with the largest percentage of deaths occurred among people aged 45–64 years (29%–35% and 27%–41% among Hispanic and AI/AN, respectively) followed by 65–74, and 75–84 years. The age distributions for COVID-19 deaths for non-Hispanic NHOPI and other race/ethnicity were younger compared with the White population, but highly variable given the smaller number of deaths among these groups.

The percentage of COVID-19 deaths by race/ethnicity within each age group over time along with the population distribution can be seen in Figure 1. From April through mid-September, the largest percentage of deaths among persons under 65 years occurred in Hispanic people. Across all age groups, the percentage of COVID-19 deaths occurring in non-Hispanic White persons increased during July to mid-December and by mid-December, represented more than half of deaths among people aged 45–64 years.

## Discussion

The largest percentage of COVID-19 deaths among the non-Hispanic White and Non-Hispanic Asian population were among those aged 85+ years, and those 75 and older accounted for more than half of COVID-19 deaths through the entire study period for these groups. However, for Hispanic/Latino, non-Hispanic Black, non-Hispanic AI/AN, and non-Hispanic NHOPI, more than half of COVID-19 deaths from April through December were among persons aged <75 years. The age distributions of COVID-19 deaths within each racial/ethnic group were fairly consistent over time. Within age groups, there was more variability over the study period in the distribution of COVID-19 deaths by race/ethnicity. Specifically, during the latter part of 2020, the percentage of deaths among non-Hispanic White people increased across all age groups. The percentage of deaths among non-Hispanic Black people has declined since April across all age groups 25 years and older. Additionally, since peaking in late July, the percentage of COVID-19 deaths among Hispanic people has declined across all age groups 25 years and older.

These findings may be impacted by differential testing and reporting of COVID-19 on death certificates by age and race/ethnicity,

factors which may vary over time. Previous analyses of excess deaths due to COVID-19 have suggested that COVID-19 deaths are likely underestimated, and that certain racial/ethnic subgroups bear a disproportionately high burden of excess mortality [8]. Consequently, the disparities in COVID-19 deaths by race/ethnicity shown here may be even wider if there is differential underestimation among certain racial/ethnic groups. Finally, this analysis did not examine differential risk of COVID-19 mortality across population groups (i.e., death rates and relative or absolute differences). A recent report found that age-adjusted COVID-19 death rates in 2020 were highest among non-Hispanic AI/AN (187.8 deaths per 100,000), followed by Hispanic (164.3), non-Hispanic Black (151.1), Non-Hispanic NHOPI (122.3), non-Hispanic White (72.5), non-Hispanic Asian (66.7), and non-Hispanic Multiracial (31.8) populations [9]. Prior analyses have found that COVID-19 death rates increase with age within each racial/ethnic group, and that death rates are highest among those 85 years and older [1].

## Conclusions

These findings show a consistently younger age distribution of COVID-19 deaths among certain racial/ethnic groups, which may inform targeted efforts to prevent mortality and reduce inequities. Given that a majority of COVID-19 deaths among Hispanic/Latino, non-Hispanic Black, non-Hispanic AI/AN, and non-Hispanic NHOPI were among persons aged <75 years from April through December, disparities in COVID-19 mortality may worsen if prevention efforts are targeted based on older age alone [10].

## Authors' contributions

Lauren M. Rossen: Conceptualization, Methodology, Formal analysis, Visualization, Writing-Original draft preparation. Jeremy A.W. Gold: Conceptualization, Writing-Review & Editing. Farida B. Ahmad: Conceptualization, Writing-Review & Editing, Data Curation. Paul D. Sutton: Writing-Review & Editing. Amy M. Branum: Writing-Review & Editing.

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