Letters

Assessment of COVID-19 Hospitalizations by Race/Ethnicity in 12 States

Given the reported health disparities in coronavirus disease 2019 (COVID-19) infection and mortality by race/ethnicity,[1,2] there is an immediate need for increased assessment of the prevalence of COVID-19 across racial/ethnic subgroups of the population in the US. We examined the racial/ethnic prevalence of cumulative COVID-19 hospitalizations in the 12 states that report such data and compared how this prevalence differs from the racial/ethnic composition of each state's population.

Methods | Using data extracted from the University of Minnesota COVID-19 Hospitalization Tracking Project,[3] we identified the 12 states that reported the race/ethnicity of individuals hospitalized with COVID-19 between April 30 and June 24, 2020. We calculated the percentage of cumulative hospitalizations by racial/ethnic categories averaged over the study period and then calculated the difference between the percentage of cumulative hospitalizations for each subgroup and the corresponding percentage of the state's population for each racial/ethnic subgroup as reported in the US Census.[4] The race/ethnicity categories included were White, Black, American Indian and/or Alaskan Native, Asian, and Hispanic. Descriptive statistical analyses were conducted using Stata/MP, version 14 (Stata Corp). The University of Minnesota Institutional Review Board reviewed the study data and deemed it exempt from review and informed consent requirements because the study was not human subjects research.

Results | This analysis of COVID-19 hospitalizations in 12 US states during nearly a 2-month period represented a total of 48 788 cumulative hospitalizations among a total population of 66 796 666 individuals in 12 US states by the end of the study period on June 24, 2020. The share of the hospitalizations of White patients was substantially smaller vs their share of state population in all 12 states (**Table** and **Figure**). For example, in Minnesota, the share of hospitalizations of White patients was 52.9%, whereas their share of the state population was 84.1%. Conversely, the percentage of hospitalizations among Black patients exceeded the percentage of their representative proportion of the state population in all 12 states. Differences between the cumulative percentage of hospitalizations and the state population of Black individuals were greatest in Ohio (31.8% vs 13.0%), Minnesota (24.9% vs 6.8%), Indiana (28.1% vs 9.8%), and Kansas (22.0% vs 6.1%).

Eleven states reported the number of COVID-19 hospitalizations for Hispanic individuals, and in 10 states, the percentage of hospitalizations for Hispanic individuals was higher than their representative proportion of the state population. The disparity among Hispanic individuals was most pronounced in Virginia (36.2% of hospitalizations vs 9.6% of population), Utah (35.3% of hospitalizations vs 14.2% of population), and Rhode Island (33.0% of hospitalizations vs 15.9% of population).

The pattern was largely reversed for the Asian population. In 6 of 10 states that reported data for this subgroup, the proportion of hospitalizations was lower compared with their population representation. In Massachusetts, for example, the Asian population comprised 7.0% of the population but only 4.0% of the COVID-19 hospitalizations.

Hospitalization data for American Indian and Alaskan Native populations were only reported by 8 states. However, the disparity was substantial in select states. In Arizona, the American Indian and Alaskan Native population accounted for 15.7% of the hospitalizations but only 4.0% of the state's population. Similarly, in Utah, this subgroup accounted for 5.0% of the hospitalizations in contrast with 0.9% representation of the state population.

Discussion | This analysis identified considerable disparities in the prevalence of COVID-19 across racial/ethnic subgroups of the population in 12 US states. These findings are consistent with an earlier Centers for Disease Control and Prevention analysis of 580 hospitalizations between March 1 and March 30, 2020, that found disproportionately high COVID-19 hospitalizations for the Black population.[5] Similarly, a study of 1052 confirmed COVID-19 cases between January 1 and April 8, 2020, at a California health system reported higher odds of hospitalization in non-Hispanic Black individuals compared with non-Hispanic White individuals.[6] In addition, we observed high hospitalization rates for Hispanic individuals in most of the states analyzed and high hospitalization rates for American Indian and Alaskan Native populations in select states.

These findings highlight the need for increased data reporting and consistency within and across all states. Only 12 of 50 US states have consistently reported hospitalizations by race/ethnicity during our study period. New Jersey and Florida recently started reporting data on COVID-19 hospitalizations by race/ethnicity. The present study is limited in that there was no adjustment for age, sex, comorbidities, and socioeconomic factors within each racial/ethnic group that are likely to be associated with COVID-19 hospitalizations.

A large body of research has identified racial/ethnic health disparities in the risk of infection associated with a higher prevalence of comorbidities, less access to health care, adverse economic conditions, and service-related occupations.[2] The unique clinical, financial, and social implications of COVID-19 for racial/ethnic populations that are often systematically marginalized in society must be well understood to

Table. Racial and Ethnic Composition of Cumulative COVID-19 Hospitalizations in 12 States

State (study observation period)	Cumulative No. of hosp on first d vs last d of study period[a]	Unknown race/ethnicity, %	Ethnicity, %[b] Hispanic			Race, %[b] White			Black			AIAN			Asian		
			Hosp	State[c]	Diff	Hosp	State[c]	Diff	Hosp	State[c]	Diff	Hosp	State[c]	Diff	Hosp	State[c]	Diff
Arizona (April 30-June 24, 2020)	1169 vs 4313	10.2	31.3	31.6	-0.3	42.6	54.4	-11.8	5.8	4.4	1.4	15.7	4.0	11.8	2.1	3.4	-1.3
Indiana (April 27-June 24, 2020)	2844 vs 6883	0.0	NA	NA	NA	61.6	85.1	-23.5	28.1	9.8	18.3	0.5	0.4	0.1	1.4	2.5	-1.1
Kansas (May 7-June 24, 2020)	587 vs 1082	6.1	26.1	12.1	14.0	71.6	86.4	-14.8	22.0	6.1	15.8	0.7	1.2	-0.5	4.1	3.1	1.0
Massachusetts (April 20-June 24, 2020)[d]	3790 vs 11 219	29.1	17.8	12.3	5.5	55.5	71.4	-15.9	14.3	7.2	7.0	NA	NA	NA	4.0	7.0	-3.0
Minnesota (May 14-June 18, 2020)[e]	1915 vs 3718	17.5	15.5	5.5	10.0	52.9	84.1	-31.2	24.9	6.8	18.1	2.7	1.4	1.4	9.8	5.1	4.7
New Hampshire (April 27-June 24, 2020)	246-558	10.4	10.0	3.9	6.1	78.9	90.0	-11.1	5.3	1.4	3.9	NA	NA	NA	2.9	2.9	0.0
Ohio (April 21-June 24, 2020)	2779 vs 7447	4.4	6.2	3.9	2.2	58.4	81.9	-23.5	31.8	13.0	18.8	0.1	0.3	-0.2	2.0	2.5	-0.4
Oregon (May 27-June 24, 2020)	759 vs 1006	5.1	25.8	13.3	12.5	61.9	86.8	-24.9	4.0	2.2	1.8	1.6	1.8	-0.2	4.8	4.8	0.0
Rhode Island (April 22-June 24)	585 vs 1677	0.0	33.0	15.9	17.1	48.8	72.0	-23.2	12.5	6.0	6.5	NA	NA	NA	NA	NA	NA
Utah (May 7-June 24, 2020)	476 vs 1256	2.9	35.3	14.2	21.1	42.5	78.0	-35.6	3.1	1.1	1.9	5.0	0.9	4.1	1.9	2.6	-0.7
Virginia (April 19-June 14, 2020)[f]	1422 vs 5536	9.0	36.2	9.6	26.5	44.1	69.5	-25.4	27.7	19.9	7.8	NA	NA	NA	NA	NA	NA
Washington (May 6-June 24, 2020)	2632 vs 4093	26.0	25.1	12.9	12.2	53.9	68.0	-14.1	6.0	3.9	2.1	1.3	1.3	0.0	8.7	9.1	-0.4

Abbreviations: AIAN, American Indian/Alaskan Native; COVID-19, coronavirus disease 2019; diff, difference; hosp, hospitalization; NA, not available; State, state population.

[a] Total cumulative hospitalizations on the first and last days of the study period: 19 204 and 48 788.

[b] The % Hispanic, White, Black, AIAN, and Asian individuals were calculated based on the number of hospitalizations with known race/ethnicity. Race categories White, Black, AIAN, and Asian represent the "Non-Hispanic" category with known race/ethnicity in the following states: Arizona, New Hampshire, Massachusetts, Rhode Island, Utah, Washington. In other states, the race categories include "Hispanic." Therefore, the sum across Hispanic ethnicity and race categories may be more than 100%. The % race/ethnicity among hospitalized represents the average over the study period for each state.

[c] Data for race/ethnicity distribution in states were obtained from the US Census Bureau.[4]

[d] Massachusetts reports combined confirmed and suspected COVID-19 hospitalizations; Utah and Virginia separately report confirmed (included in this analysis) and suspected hospitalizations. Other states do not specify confirmed vs suspected hospitalizations.

[e] Minnesota provides data weekly.

[f] Virginia provides data only for White and Black races, and aggregates all other races in the "Other" category. Hispanic ethnicity data are provided starting May 20, 2019. Reporting format changed again on May 20, 2019. Reporting format changed again on June 15, 2020; therefore, the analyses include data up to June 14, 2020.

Figure. Hospitalizations vs Population of Racial/Ethnic Subgroups in 12 States
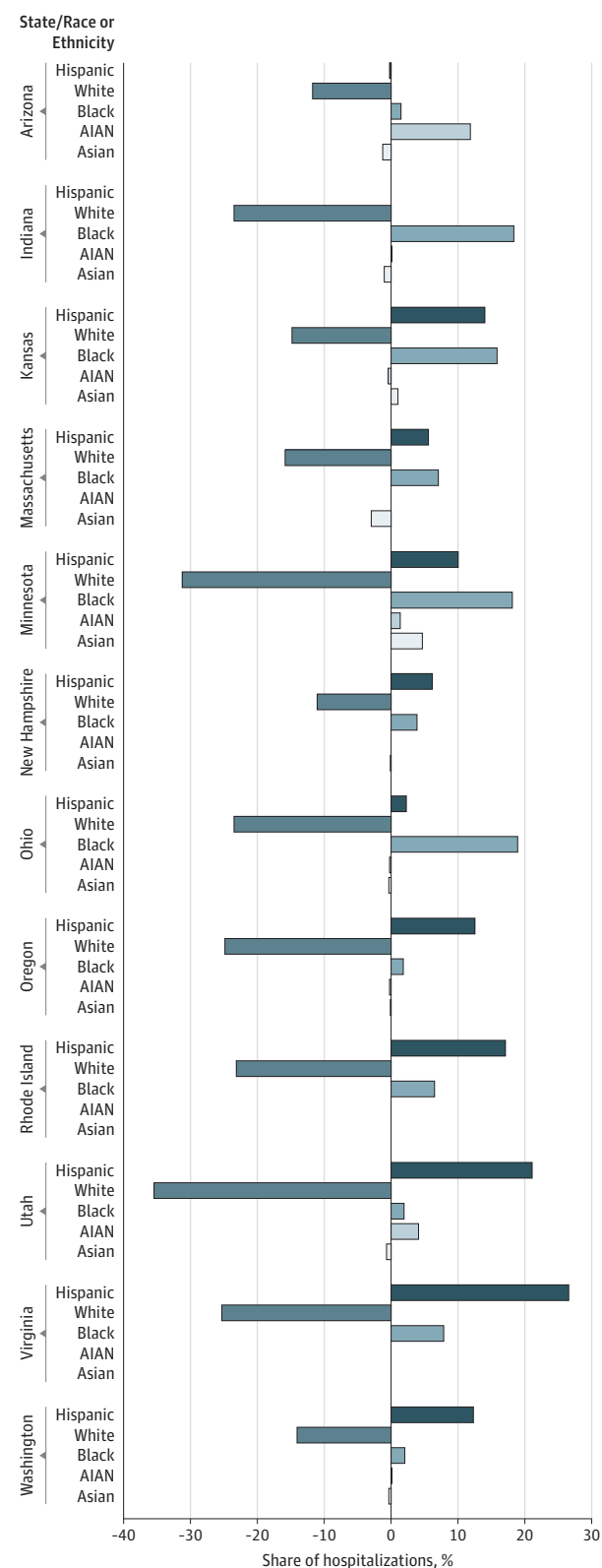
The bars represent the difference between the cumulative percentage of hospitalizations and the proportion of state population by each racial/ethnic subgroup. AIAN indicates American Indian/Alaskan Native.

design and establish effective and equitable infrastructure solutions.

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