Addressing Race and Ethnicity Disparities in Patient Selection for COVID-19 Therapies

It is now well-recognized that significant race and ethnicity disparities exist with respect to severe illness and hospitalization COVID-19.[1] Although genetic determinants of COVID-19 severity have been identified, race and ethnicity are not a biological construct and there is no evidence that genetic differences account for observed disparities.[2,3] However, outcome differences among persons of color is an important epidemiological phenomenon that persists despite adjustment for age, gender and underlying medical conditions.[4,5] More importantly, race and ethnicity disparities in COVID-19 may impact equity in treatment allocation.

Novel therapies for early treatment of COVID-19, such as monoclonal antibody infusions, will soon be available. These treatments hold promise of modifying the course of disease to prevent hospitalization. Because most patients with COVID-19 will not have severe disease, methods of accurately identifying patients at risk for hospitalization are needed to match available drug to patients most likely to benefit. To that end, models that accurately predict hospitalization using only widely available patient characteristics, including race/ethnicity[4,5] have now been proposed for patient identification for outpatient treatment.

We wish to acknowledge that race and ethnicity are often appropriately omitted from clinical prediction models to (1) prevent illegal or unethical profiling behavior and (2) to avoid advancing the incorrect notion that race or ethnicity are biological variables rather than imperfect epidemiological surrogates for complex geographic, cultural, and socioeconomic features.

However, in some circumstances, when race and ethnicity are inextricably associated with outcomes that could be prevented by more intensive treatment, omission of race or ethnicity in patient selection can actually cause inequity in healthcare access and worsen outcomes disparity. This important distinction has been recognized by the National Quality Forum.[6]

This issue appears to be particularly relevant to COVID-19 treatment. For reasons not yet well understood, a younger or less medically-complex non-white patient with COVID-19 may have equal probability of requiring hospitalization as an older, more chronically-ill white patients. **Our concern is that risk-stratification strategies for prescribing preventive COVID-19 therapies that omit race or ethnicity will disproportionately prioritize white patients for treatment, systematically penalizing non-white patients whose risk is underestimated using other demographic and clinical features.**

Because non-white patients comprise more than half of COVID-19 admissions, providing equal access to potentially effective preventive therapies is a top priority. We respectfully request commentary on this issue by the Office of Civil Rights.

1. CDC. COVID-19 Hospitalization and Death by Race/Ethnicity. (ed. Control, C.f.D.) (Atlanta, Georgia, 2020).
2. Zeberg, H. & Paabo, S. The major genetic risk factor for severe COVID-19 is inherited from Neanderthals. *Nature* (2020).
3. Zhang, Q.*, et al.* Inborn errors of type I IFN immunity in patients with life-threatening COVID-19. *Science* **370**(2020).
4. Dashti, H., Roche, E., Bates, D., Mora, S. & Demler, O. SARS2 simplified scores to estimate risk of hospitalization and death among patients with COVID-19. *medRxiv* (2020).
5. Jehi, L.*, et al.* Development and validation of a model for individualized prediction of hospitalization risk in 4,536 patients with COVID-19. *PloS one* **15**, e0237419 (2020).
6. Forum, N.Q. Risk adjustment for socioeconomic status or other sociodemographic factors. (National Quality Forum, Washington D.C., 2014).