

Increasing Health Equity in COVID-19 Using Real World Data and Advanced Analytics

Investigators

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Project Summary

The overall project goal is to increase understanding of mitigating adverse outcomes related to COVID-19 across diverse patient populations. Randomized controlled trials are regarded as the gold standard for producing evidence in medical research. For example, the double-blind, randomized, placebo-controlled trial of remdesivir in hospitalized adults with COVID-19 and lower respiratory tract infection showed that remdesivir shortened time to recovery (NCT04280705; 2020 Beigel et al.). However, factors beyond the intervention may contribute to the measured effect (i.e., marginal causal effect) and there is a limited understanding of how well real-world findings emulate target trial findings or how findings vary across diverse patient populations. Observational studies may provide a complement to randomized controlled trials to ensure the marginal treatment effect adequately represents the heterogeneous treatment effects associated with underrepresented populations (e.g., race and ethnicity). Also, there is an ongoing need to improve the completeness and quality of data and to develop analytics-appropriate methods for utilizing data such as social determinants of health to help prioritize high risk groups for treatments and therapeutics.

Populations Served: American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, and Hispanic or Latino.

Goals/Aims:

- Assess the effectiveness of remdesivir to treat COVID-19 by conducting an emulated clinical trial study using real-world data from the Veterans Health Administration (VHA).
- Examine the heterogeneity in the effectiveness of remdesivir by race and ethnicity, and age groups.
- Using mixed-methods, assess the barriers and facilitators of obtaining accurate and complete race and ethnicity data captured across the VHA health care system to inform best practices in race and ethnicity data collection.
- Describe and demonstrate an analytic framework to evaluate bias and fairness when machine learning method is used to identify patient eligibility for trial enrollment or identify patients who are indicated (candidates) for therapies with potentially limited access, such as remdesivir.

Publications/Abstracts/Posters, etc.

- Lee C, Araojo R, Mohanty AF, Zickmund S, White PJ, (2022). [Partnering to Advance Health Equity](#). *J Transl Sci* 8 : DOI: 10.15761/JTS.1000469.
- Mohanty AF, Zickmund S, Naranjo D. Data Collection, Sources, and Algorithms for Race and Ethnicity Determination in VHA. [RAISE Community Workshop 8- Considerations in the Measurement of Race & Ethnicity; Downstream Effects, and Novel Methods to Address the Issue](#), Reagan-Udall Foundation for the FDA. May 4, 2023. Workshop 8 Oral Presentation.
- Mohanty AF, Zhang Y, Li H, Jones B, Haroldsen C, Nevers M, Adams B, Zickmund S, White PJ. Preliminary descriptive findings of a comparative effectiveness study of remdesivir among US Veterans and their social determinants of health. 2023 VA HSR&D/QUERI National Conference (poster presentation). Baltimore, MD. February 2023
- Ou W, Jones M, Mohanty A, Tamang S. "COVID-19 Management from the Learning Health System Perspectives" Health Datapalooza and National Health Policy Conference, Academy Health (oral presentation), Arlington, VA. April 2022