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## Racial and Ethnic Disparities in Diabetes Technology Use amongst Persons with Type 1 Diabetes

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**Objective:** Despite recent advances in diabetes technology, the distribution of healthcare resources is often unequal among racial and socio-economic groups. A recent multicenter study looking at technology use amongst young adults with T1D demonstrated that socioeconomic status (SES) was not the sole driver of racial/ethnic disparities and that adjustment for income, insurance level, and health literacy did not significantly attenuate disparities. Here we present a retrospective cohort study looking at racial/ethnic disparities in insulin pump and CGM use in adults with T1D at an urban university hospital system.

Methods: We reviewed the charts of all adults aged 18 to 89 with T1D who attended the University of Maryland Center for Diabetes and Endocrinology (UMCDE) between 1/2019 and 12/2019. Age, gender, race/ethnicity, type of insurance, ZIP code, BMI, A1c, method of insulin delivery, and type of glucose monitoring device were obtained from each chart. We utilized the 2019 US Census data to determine the median income for each ZIP code. Patient charts were re-accessed in 2021 to check for changes in diabetes technology use from 1/2020 until 12/2021. Logistic regression modeling was done in PRISM to control for age, gender, race, insurance type, ZIP code, last known provider, BMI, and A1c. Hosmer-Lemeshow test was done to evaluate goodness of fit. Stratified analysis was done for potential confounders such as insurance type and income. The Breslow-Day test and Likelihood Ratio test for nested models were used to evaluate their degree and significance.

**Result:** A total of 532 adults were included in the study; 277 identified as non-Hispanic (NH) White, 204 identified as NH Black, 7 identified as Hispanic, and 44 identified as other racial/ethnic groups. NH White adults had a significantly higher insulin pump use when compared to NH Black (adjusted ratio 54.0% vs. 18.4%, OR 2.43 after regression, 95%CI [1.41-4.22]). Similarly, NH White adults had significantly higher CGM use when compared to NH Black (66.5% vs. 35.2%, OR 2.00 after regression, 95%CI [1.24-3.22]). Disparities between NH White and NH Black patients did not resolve throughout 2020-2021. Insurance type was a potential effect modifier for CGM prescriptions

between NH White and NH Blacks (Crude OR 4.04, Commercial Strata OR 2.68, Medicaid 1.79, Medicare 2.79, Other/Self-pay 25.7, p=0.039 on Breslow-Day test). There was large heterogeneity in the rate of Pump or CGM prescriptions between providers.

**Conclusion:** NH White adults with T1D were significantly more likely to have been prescribed diabetes-related technologies when compared to other racial/ethnic groups, and this difference did not resolve over 2 years of follow-up. Future directions include a comprehensive survey of our population regarding patient-derived and patient-perceived factors driving disparities beyond socioeconomic status.

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