

# All-Cause Healthcare Costs by Race Among Medicaid-Insured Males with Duchenne Muscular Dystrophy using U.S. Real-World Data

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## Objective



Data on the impact of race on economic outcomes among patients with Duchenne muscular dystrophy are lacking. This study sought to describe the all-cause healthcare costs among patients with DMD by race, in a Medicaid population

## Conclusions



While total all-cause healthcare costs did not differ significantly by race among males with DMD, numerical differences were observed primarily due to variation in treatment utilization.

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**References:**  
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Romitti PA, et al. Prevalence of Duchenne and Becker muscular dystrophies in the United States. Pediatrics. 2015 Mar;135(3):513-21  
Schrader R et al. Development of Algorithms to Identify Patients with Duchenne Muscular Dystrophy Using US Administrative Claims Data [poster]. AMCP Conferences, March 2022, Chicago, IL.

**Disclosures:** NP, AT, JA, and VM are employed by Pfizer. JM was employed by Merative at time of study completion. MR and CRL are employed by Merative, which received funding from Pfizer to conduct this study. SN is employed by the David Geffen School of Medicine at UCLA and is a paid consultant of Pfizer.

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## Background

- Duchenne muscular dystrophy (DMD) is a severe X-linked recessive muscular dystrophy leading to disability and premature death. (MDA, 2022).
- DMD is estimated to affect approximately 6 per 100,000 individuals in Europe and North America (MDA, 2022)
- The prevalence of DMD appears to differ by race/ethnicity, but it is unknown if this is due to lack of or delayed diagnosis (Romitti et al., 2015).
- Data on the impact of race on economic outcomes among patients with DMD are lacking.

## Methods

### STUDY DESIGN AND DATA SOURCE

- This was a retrospective cohort study of patients with DMD in the Merative Multi-State Medicaid Database between January 2017-June 2021. DMD patients were identified using a validated algorithm to minimize inclusion of patients with BMD (Schrader et al., 2022) (Figure 1).
- Demographics, clinical characteristics, all-cause healthcare utilization and costs, and DMD-related healthcare utilization and costs were reported by race in the 12-month baseline and 12-month follow-up periods.

### STATISTICAL ANALYSIS

- Statistical significance across racial cohorts was done using one-way ANOVA testing.

## Results

### DEMOGRAPHIC AND CLINICAL CHARACTERISTICS

- 561 patients were included, of which 360 were White, 50 Black, 33 Hispanic, and 118 other/unknown (Table 1).

Table 1. Patient demographic and clinical characteristics				
	White (N=360)	Black (N=50)	Hispanic (N=33)	Other/Unknown (N=118)
Age (Mean, SD)	16.4 (8.2)	13.5 (8.1)	13.4 (5.1)	16. (6.8)
Median	16	13	14	15
Urban residence (%)	71.7%	86.0%	90.9%	81.4%

### DMD TREATMENTS

- In the follow-up period, corticosteroids were the most common treatment among all races, with the highest use among Hispanics (73%). The use of other DMD treatments can be seen in Figure 2.

### ALL-CAUSE HEALTHCARE COSTS

- In both the baseline and follow-up periods, differences in total healthcare costs were not significantly different across racial cohorts (Figures 3 and 4).
- In the follow-up period, mean healthcare costs were numerically higher among the White cohort (\$108,895) compared to \$59,501 in the Black cohort, \$61,199 in the Hispanic cohort, and \$65,247 in the unknown/other cohort.
- Inpatient costs were significantly different, with unknown/other and Black patients incurring the highest costs and White patients incurring the lowest costs.

Figure 2. DMD treatments in the 12-month follow-up period, by race

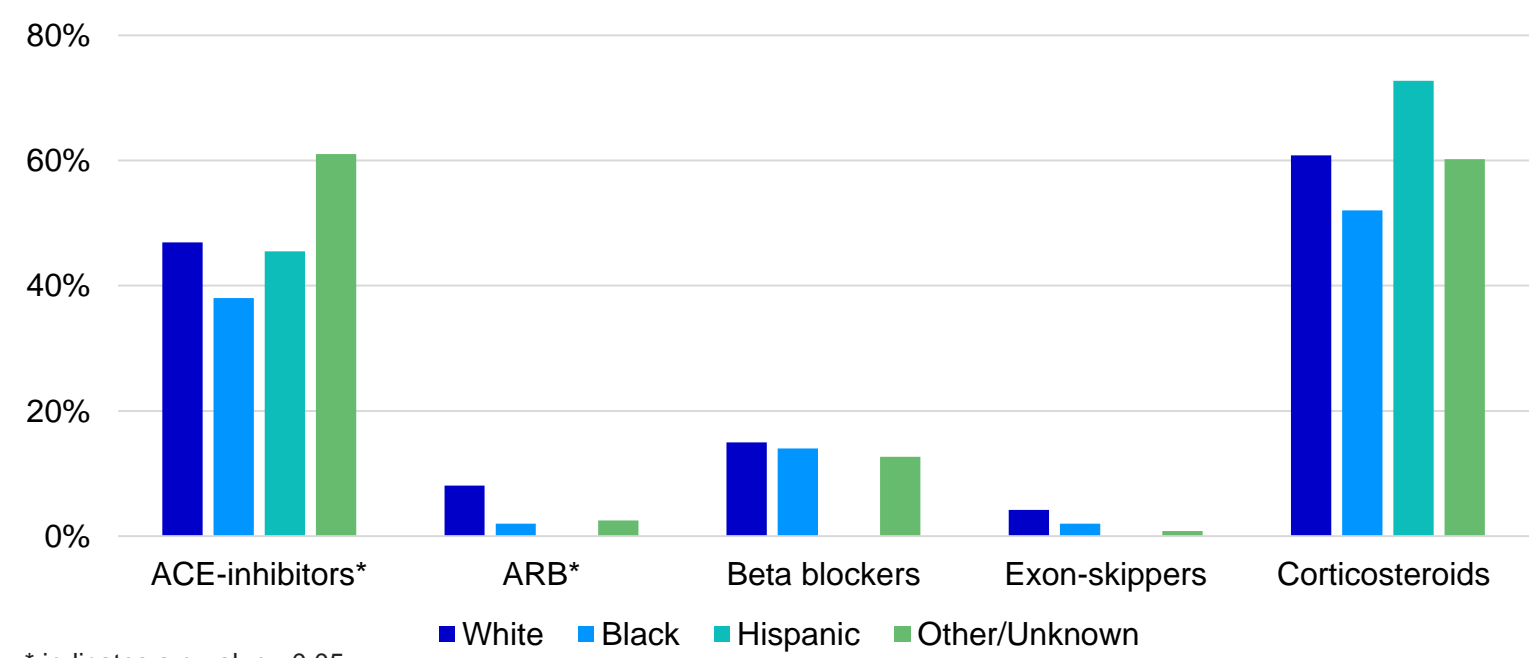


Figure 1. Patient selection

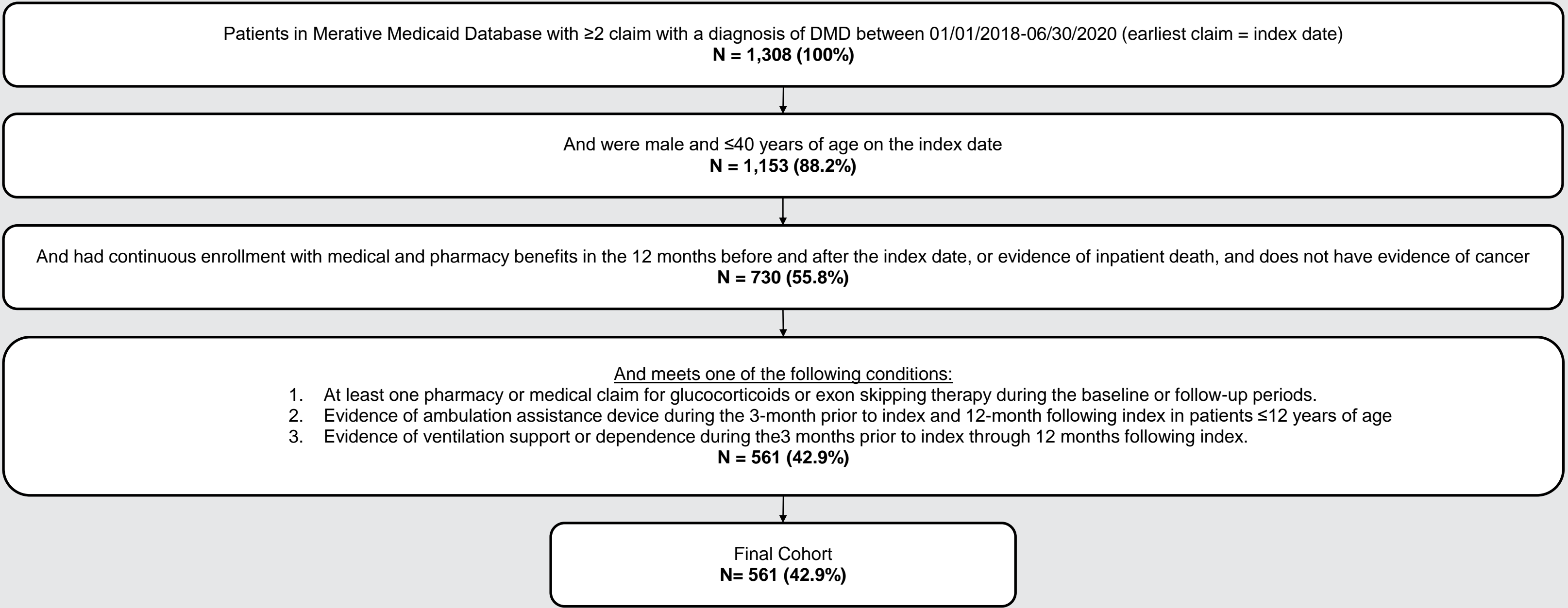


Figure 3. All-cause healthcare costs in the baseline period, by race

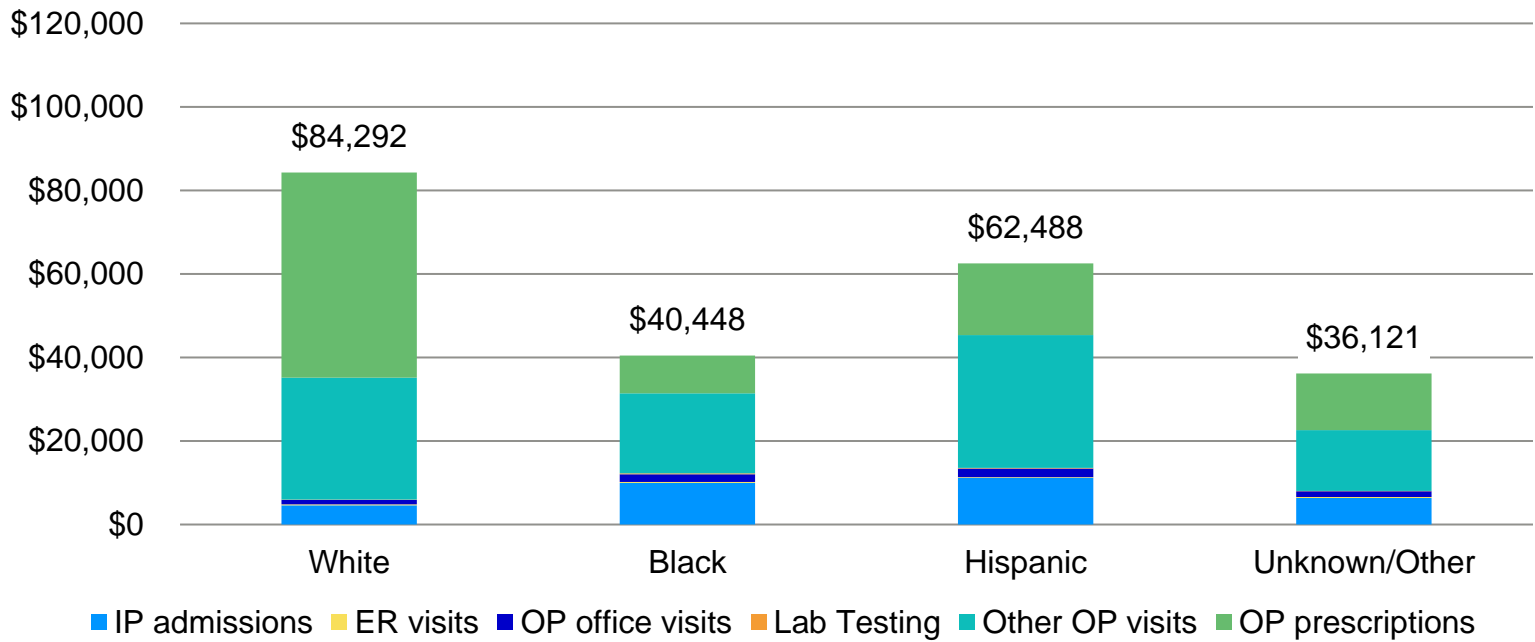


Figure 4. All-cause healthcare costs in the 12-month follow-up, by race

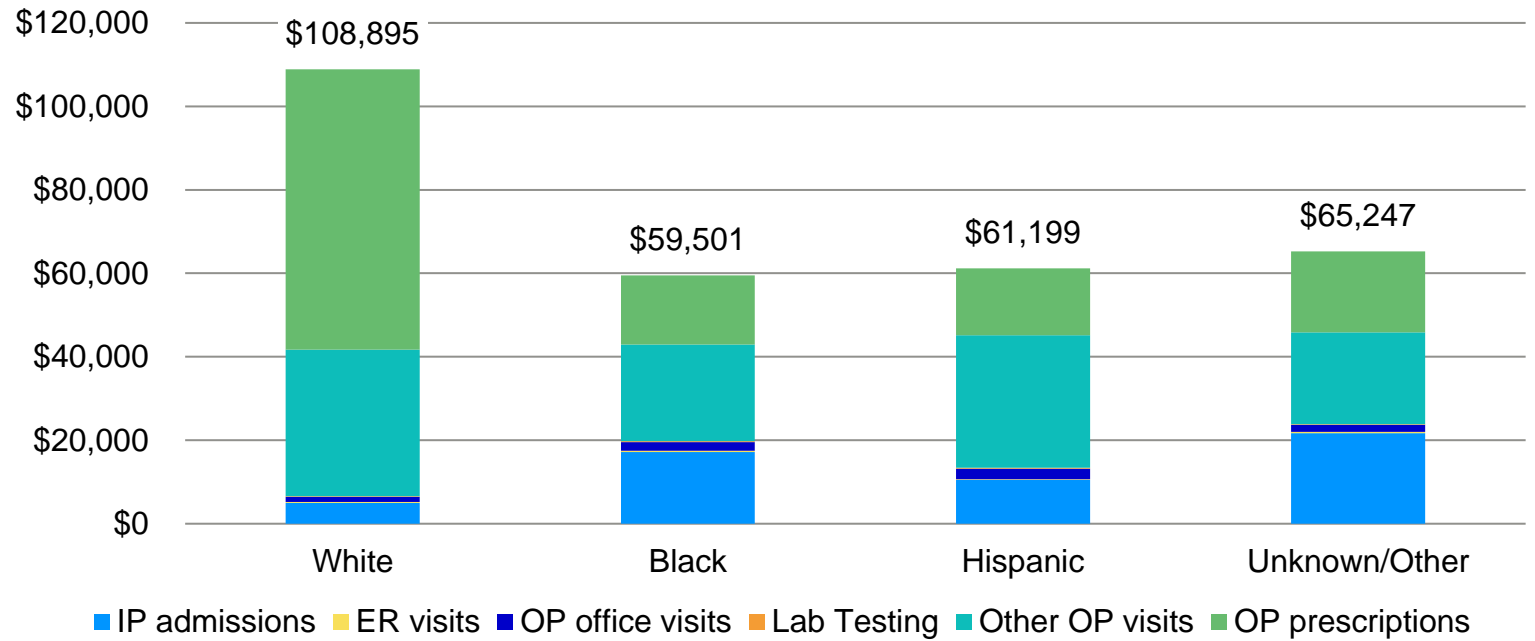
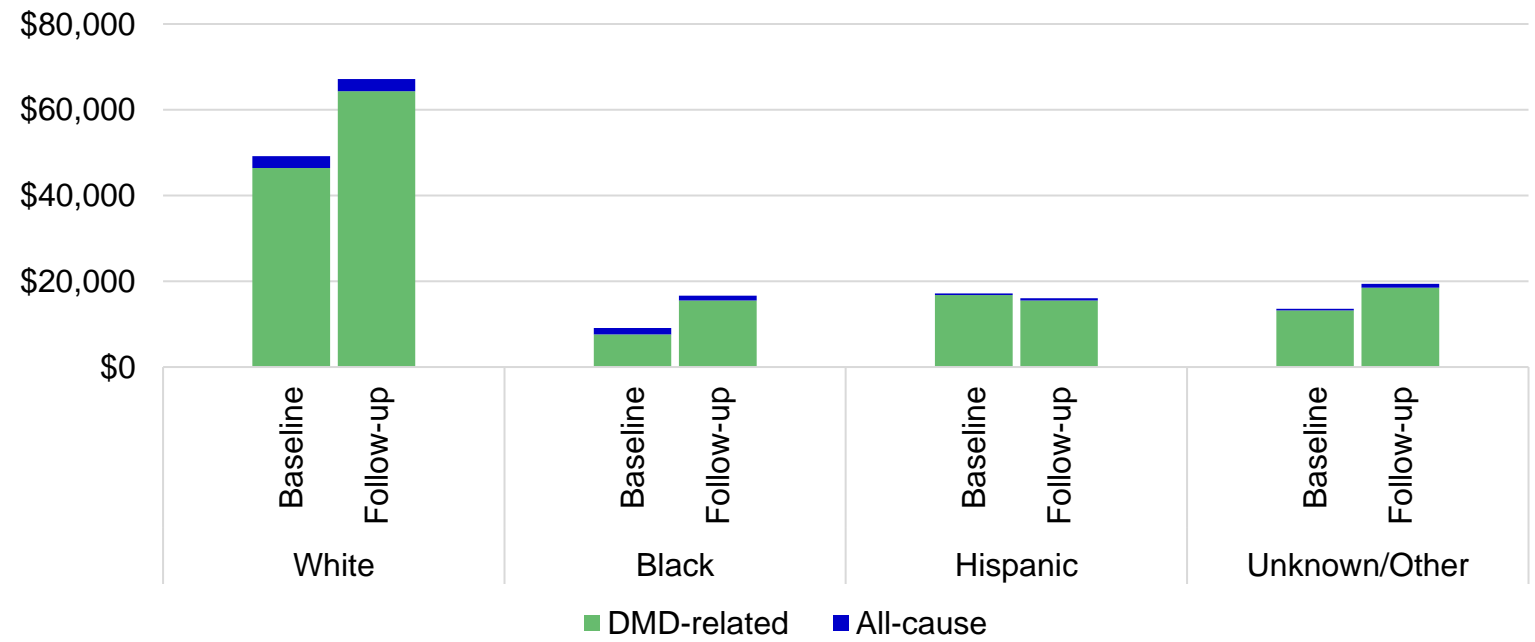


Figure 5. Outpatient pharmacy costs, by race



### OUTPATIENT PHARMACY COSTS

- Outpatient pharmacy costs were higher for White patients in both the baseline and follow-up periods. Pharmacy costs were higher in the follow-up period for the White, Black, and unknown/other cohort, compared to baseline pharmacy costs (Figure 5).
- Differences in pharmacy costs were driven by higher utilization on exon-skipping medication among White patients, although this difference was not statistically significant.

### DMD-RELATED DEVICES AND PROCEDURES

- In the follow-up period, 73.1% of White patients, 70.0% of Black patient, 78.8% of Hispanic patients, and 76.3% of other/unknown patients had at least once claim for the DMD-related device or procedure (Table 2)
- The top five most common devices and procedures across all cohorts were: wheelchairs and accessories, power wheelchairs and accessories, other ventilation devices (which includes lower extremity surgery and scoliosis devices and procedures), tracheostomy, and ankle or foot orthoses.

Table 2. DMD-related devices and procedures in the 12-month follow-up

	White (N=360)	Black (N=50)	Hispanic (N=33)	Other/Unknown (N=118)
Any DMD-related device or procedure	263 (73.1%)	35 (70.0%)	26 (78.8%)	90 (76.3%)
Ambulation devices or procedure	204 (56.7%)	29 (58.0%)	22 (66.7%)	70 (59.3%)
Ventilation devices or procedures	141 (39.2%)	18 (36.0%)	18 (54.6%)	50 (42.4%)
Top 5 devices or procedures				
Wheelchair and accessories	134 (37.2%)	17 (34.0%)	15 (45.5%)	48 (40.7%)
Power wheelchair and accessories	119 (33.1%)	16 (32.0%)	14 (42.4%)	47 (39.8%)
Other ventilation devices*	87 (24.2%)	14 (28.0%)	12 (36.4%)	38 (32.2%)
Tracheostomy	76 (21.1%)	6 (12.0%)	11 (33.3%)	26 (22.0%)
Ankle/foot orthoses	59 (16.4%)	11 (22.0%)	8 (24.2%)	21 (17.8%)

## Limitations

- This study is subject to limitations common to all retrospective administrative claims studies. This study was limited to those individuals with Medicaid health coverage and therefore results may not be generalizable to DMD patients with commercial or other types of insurance.
- Due to the rare nature of DMD, statistical inference on the impact of race on HCRU was limited by small sample size.