

Utilization Trends and Access Disparities in CAR T-Cell Therapy: Real-World Insights From an All-Payer US Healthcare Database (2017–2024)

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INTRODUCTION

CAR T-cell therapy is a groundbreaking treatment for certain hematologic malignancies, but its high cost and specialized administration requirements raise concerns about equitable access in real-world settings.

OBJECTIVE

This study aimed to analyze the utilization trends and access disparities of CAR T-cell therapy in real-world settings in the US.

METHODS

- Study Design:** Retrospective observational study
- Data Sources:** Premier PINC AITM Healthcare Database, a large, geographically diverse, hospital discharge database that accounts for 25% of all US inpatient and outpatient
- Study Period:** Jan 1, 2017, through Mar 31, 2024.
- Study population:**
 - Adult patients (aged ≥18 years)
 - Diagnosed with MM, LBCL, LL, FL, or MCL
 - CAR T group:** Received CAR T-cell therapy
- Statistical analysis:**
 - Yearly trends in the utilization of CAR T-cell therapy were assessed.
 - Demographic and hospital characteristics were described for the CAR T group and compared with those of the overall study population.
 - Analysis was performed using R 4.3.1.

Patient selection

Adult patients diagnosed with MM, LBCL, LL, FL or MCL	496,840	
Received CAR T-cell therapy	1,781	
Cancer type	Overall*	CAR T*
MM	208,193	521 (0.25%)
LBCL	195,525	1,014 (0.52%)
LL	26,597	100 (0.38%)
FL	72,597	116 (0.16%)
MCL	20,557	95 (0.46%)
Total	496,840	1,781 (0.36%)

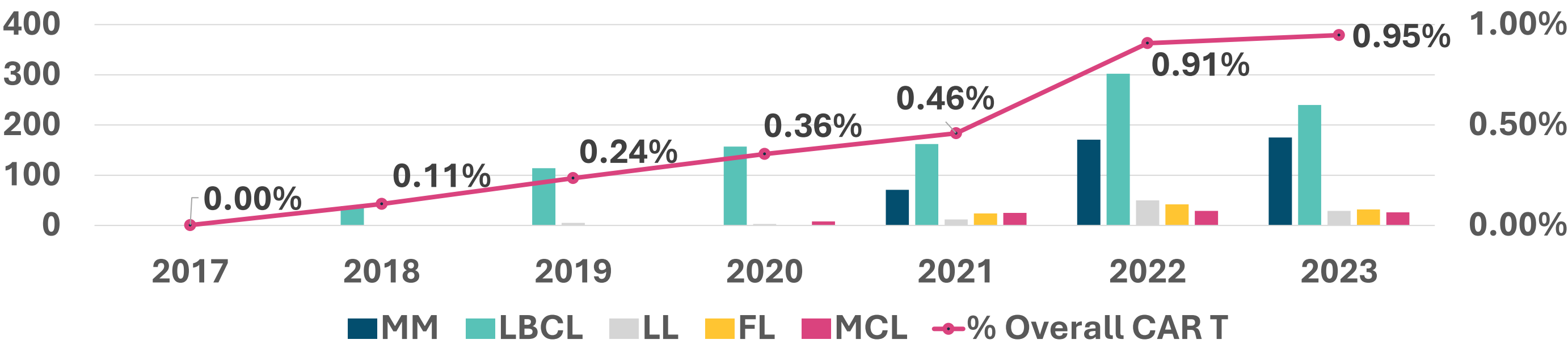
*26,003 patients in the overall study population and 65 patients in the CAR T group had more than one type of cancer.

Abbreviations

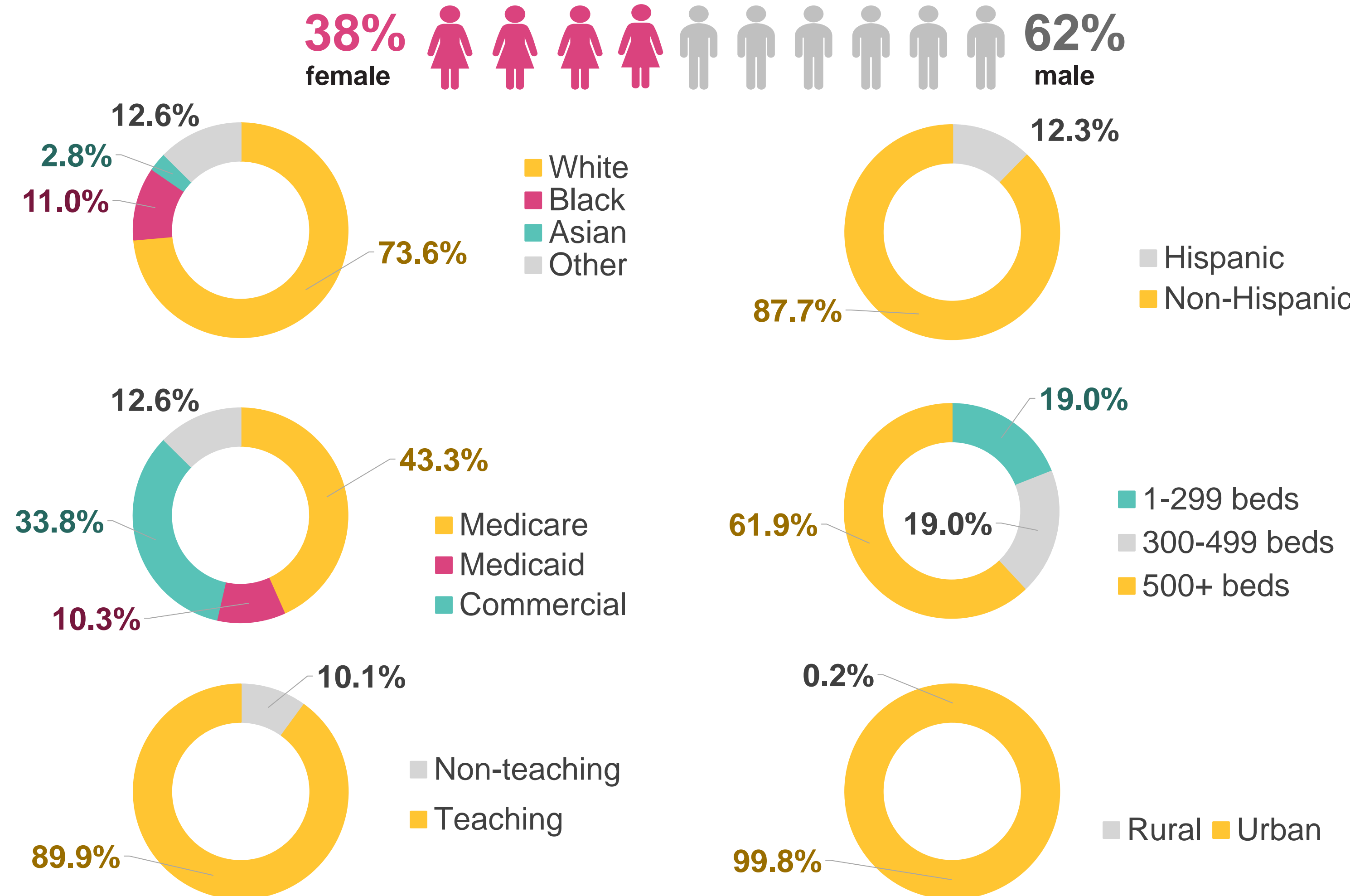
CAR T-cell: Chimeric Antigen Receptor T-cell
US: United States **OR:** Odds ratio
CI: Confidence Interval **MM:** Multiple myeloma
LL: Lymphoid leukemia **FL:** Follicular lymphoma
MCL: Mantle cell lymphoma
LBCL: Large B-cell lymphoma

RESULTS

- 1,781 CAR T-cell patients were identified, which accounted for 0.36% of all patients in the study population.
- There is an **increasing trend** of CAR T-cell therapy utilization during 2017-2023, with the **highest seen in LBCL, followed by MM**.



- 52% of CAR T-cell patients are aged 60-74 years.
- Most CAR T-cell patients are White, non-Hispanic, on Medicare, and received treatment in large urban teaching hospitals.



- Older, female, black, uninsured, and Medicare** patients were less likely to receive CAR T-cell therapy.
- CAR T-cell therapy is predominantly administered in **large, urban, and teaching** hospitals.

	OR (95% CI)	
Age		
40-59 vs. 18-39	0.85 (0.68, 1.06)	
60-74 vs. 18-39	0.82 (0.66, 1.03)	
75+ vs. 18-39	0.27 (0.21, 0.36)	
Female vs. Male	0.75 (0.67, 0.84)	
Race		
Black vs. White	0.84 (0.71, 0.99)	
Asian vs. White	1.00 (0.72, 1.37)	
Other vs. White	1.20 (0.96, 1.48)	
Non-Hispanic vs. Hispanic	0.89 (0.76, 1.06)	
Payor Type		
Uninsured vs. Commercial	0.10 (0.03, 0.22)	
Medicaid vs. Commercial	1.04 (0.86, 1.25)	
Medicare vs. Commercial	0.83 (0.72, 0.95)	
Hospital Size		
300-499 beds vs. 500 beds	0.74 (0.64, 0.85)	
1-299 beds vs. 500 beds	0.73 (0.62, 0.85)	
Non-teaching vs. Teaching	0.13 (0.11, 0.16)	
Rural vs. Urban	0.07 (0.02, 0.16)	
Geographic Location		
Northeast vs. Midwest	0.98 (0.84, 1.16)	
South vs. Midwest	1.03 (0.90, 1.17)	
West vs. Midwest	1.06 (0.85, 1.32)	

*Adjusted for age, sex, race/ethnicity, payor type, hospital characteristics (size, teaching status, population served, geographic location), and cancer type.

CONCLUSIONS

- Increased Utilization of CAR T-cell Therapy**
Using the largest hospital discharge database in the US, we confirmed a significant rise in CAR T-cell therapy use from 2017 to 2023, especially for Large B-cell Lymphoma and Multiple Myeloma.
- Geographic and Institutional Access Barriers**
Treatments are concentrated in large, urban teaching hospitals, indicating geographical and institutional disparities that limit access for patients in rural or underserved areas.
- Social and Economic Disparities**
There is an underrepresentation of older, female, and black patients among CAR T-cell recipients. Additionally, uninsured patients were less likely to receive CAR T-cell therapy, highlighting potential economic barriers and underscoring the need to address these disparities to ensure equitable access.

LIMITATIONS

- This data source represents a slightly higher proportion of community-based hospitals compared to those reported by the American Hospital Association survey data. Therefore, the treatment strategies may not be representative of the real-world mix of US practice types.
- We may have unmeasured confounding factors, such as disease stage and lines of therapy, which could be associated with treatment choices and patient characteristics.

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