A Comparative Assessment of Travel Burden and Productivity Loss for CAR T-Cell Therapy and Bispecific Antibody Treatment in Patients with R/R LBCL Using U.S. Claims Data

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Objectives

- Describe one-way travel distance and time for patients with R/R LBCL to receive BsAbs or axicabtagene ciloleucel (axi-cel) in the real-world setting
- Estimate patients' travel distance and time, travel-related costs, and lost productivity associated with the different dosing requirements and visit schedules of axi-cel and BsAbs

Conclusions

- Although patients receiving axi-cel experienced greater upfront travel to access specialized treatment centers, fewer subsequent visits resulted in lower cumulative travel distance, time, and travel-related costs over 12 months compared with BsAbs.
- Findings highlight a potential trade-off between upfront and long-term treatment burden; therapies requiring frequent administration may impose a greater sustained burden on patients and caregivers, despite shorter initial travel distances. Understanding these differences in real-world treatment burden may help inform clinical decision-making, patient counseling, and strategies to improve equitable access to advanced therapies in R/R LBCL.
- Results of the projected analysis are based on clinical trial visit schedules. Further, a preliminary real-world claims analysis using 6 months of follow-up showed patients have more visits than projected, suggesting travel burden may be greater than estimated and warrants additional research.

Plain Language Summary

- Patients receiving CAR T-cell therapy (a single infusion) had to travel farther to get treatment initially but needed fewer visits overall. In contrast, patients receiving a bispecific antibody (which require multiple visits for repeated dosing) had shorter trips initially but required more visits over time.
- In the year following start of treatment, people receiving CAR T-cell therapy were expected to take fewer trips overall, leading to less travel time and lower costs from driving and missed work than those receiving bispecific antibody therapy.
- Differences in travel burden between the two treatment types may affect convenience for patients, caregiver burden, and overall access to care.

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BACKGROUND

- Chimeric antigen receptor T-cell (CAR T) therapies and bispecific antibodies (BsAbs) both represent major advances in the treatment of relapsed/refractory (R/R) large B-cell lymphoma (LBCL).[1-3]
- Patient access issues may arise with both CAR T and BsAbs:
  - Frequent dosing required with BsAbs imposes travel-related burden on patients and caregivers.[4]
  - Potentially long distances to authorized facilities is a considerable barrier for CAR T patients.[5]
- Understanding how these therapies differ in their travel burden, including associated travel costs and lost work productivity, can inform patient access strategies, support health equity, and help optimize outcomes for patients with R/R LBCL.

METHODS

This study projected travel time, travel distance, and travel-related costs among patients with R/R LBCL who were treated with either axi-cel or a BsAb (epcoritamab or glofitamab). Cumulative travel distance, time, and costs were estimated by applying treatment-specific visit schedules derived from clinical trial protocols to real-world Medicare FFS patients' one-way travel distance to treatment centers captured in claims data.

Inclusion Criteria

- Medical claim for axi-cel, epcoritamab, or glofitamab between 5/1/2023 and 6/30/2024
- No claim for any CAR T or BsAb during the 6 months prior to index date
- Age ≥18 on index date
- Continuous enrollment with medical benefits for at least 6 months before and after the index date

Outcomes

- *Travel distance:* one-way to treatment center and cumulative over 12 months, in miles
- *Travel time:* one-way to treatment center and cumulative over 12 months, in minutes
- *Travel-related costs:* Cumulative driving-related and productivity loss-related costs, in 2024 US dollars

Patient cohort: Medicare Fee-for-Service claims data was used to identify patients who received axi-cel or a BsAb between 5/1/2023 and 6/30/2024.

Travel distance and time: One-way distance from patients' residential location, approximated using the geometric centroid of their ZIP-5 area, was computed with the Google Maps Distance Matrix Application Programming Interface.

Travel costs: US Bureau of Labor Statistics average wage rate ($35.46) and Internal Revenue service mileage costs ($0.67 per mile) from 2024.

Projected Number of Visits Over 12-Month Time Horizon

- *Axi-cel: **8 visits** (per clinical trial visit schedules;[8] includes infusion + monitoring)*
- *Epcoritamab: **28 visits** (per published dosing schedule)[6]*
- *Glofitamab: **14 visits** (per published dosing schedule)[7]*

RESULTS

- A total of 339 patients treated with axi-cel, 132 with epcoritamab, and 77 with glofitamab met all inclusion criteria (**Table 1).**
- More than 90% of patients in all treatment groups lived in areas classified as urban, based on Metropolitan Statistical Area (data omitted from Table 1 due to small sample size).

Table 1. Patient characteristics

Characteristic	Axi-cel (N=339)	Epcoritamab (N=132)	Glofitamab (N=77)
Age, in years, mean (SD)	70.6 (6.4)	76.9 (8.4)	77.9 (9.2)
Sex, n (%)			
Male	209 (61.7)	77 (58.3)	41 (53.2)
Female	130 (38.3)	55 (41.7)	36 (46.8)
Race/Ethnicity, n (%)			
White non-Hispanic	299 (88.2)	116 (87.9)	63 (81.8)
Other or Unknown	40 (11.8)	16 (12.1)	14 (18.2)

- Patients treated with axi-cel generally traveled longer distances to their index treatment facility; 18% of them traveled more than 2 hours one-way, compared to 6% of epcoritamab patients and 13% of glofitamab patients (**Figures 1a and 1b**).

Figure 1a. One-way distance from patient residence to treatment center, in miles

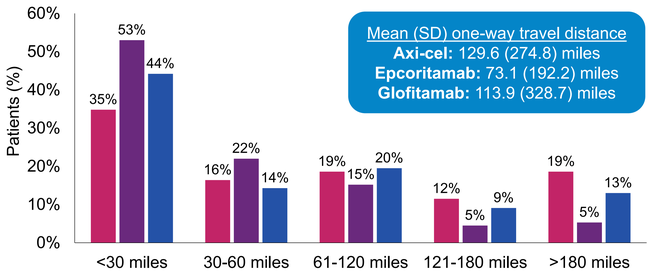


Figure 1b. One-way drive time from patient residence to treatment center, in minutes

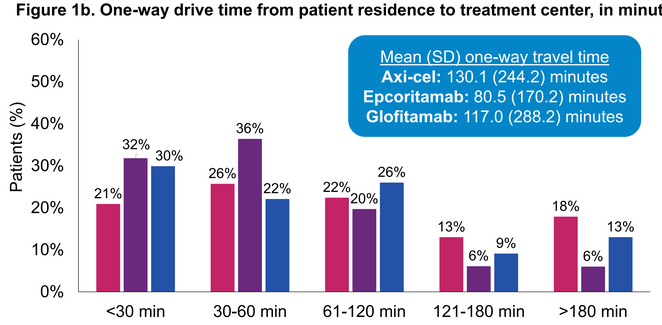
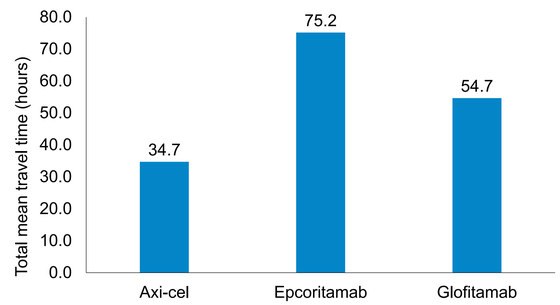
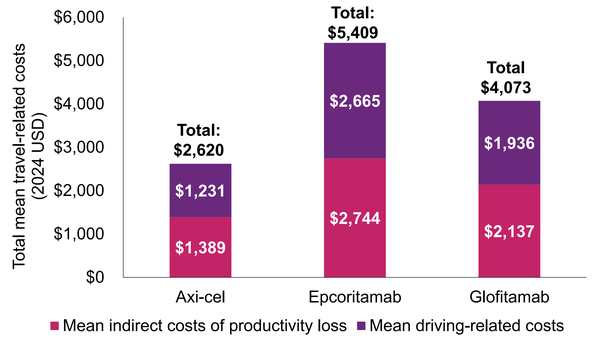


Figure 2. Projected total mean hours traveled over 12 months post-index



- Though patients treated with axi-cel initially traveled the farthest to receive treatment, fewer overall visits resulted in the shortest total estimated travel distance over 12 months (mean = 2,073 miles) versus 4,095 miles for epcoritamab and 3,190 miles for glofitamab.
- Shorter initial travel distance corresponded to shorter cumulative time spent traveling over 12 months for axi-cel (mean = 34.7 hours) versus 75.2 hours for epcoritamab and 54.7 hours for glofitamab (**Figure 2**).
- Axi-cel total mean travel time was significantly shorter versus epcoritamab (p=0.005) and numerically but not significantly shorter versus glofitamab (p=0.210).
- Fewer scheduled visits for axi-cel patients also resulted in lower driving-related costs and lower indirect costs of productivity loss compared to BsAbs (**Figure 3**).
- Patients treated with axi-cel were projected to accumulate $2,620 in travel-related costs over 12 months, which was significantly less than epcoritamab ($5,409; p=0.016) and numerically but not significantly less than glofitamab ($4,073; p=0.259) (**Figure 3**).

Figure 3. Projected mean travel-related costs over 12 months post-index



REAL-WORLD SENSITIVITY ANALYSIS

- A preliminary analysis of real-world visits was also conducted. Patients were followed for 6 months post-index to quantify their LBCL-related visits.
- Epcoritamab patients had a mean of **25 visits**, glofitamab patients had **19 visits**, and axi-cel patients had **20 visits,** which could include dosing, monitoring, or any other type of care for LBCL at any location.
- These estimates are higher than the projected number of visits over 12 months according to clinical trial-based visit schedules. More research is needed to understand patients' patterns of care and follow-up.

LIMITATIONS

- Administrative claims data used to capture patients in this study are subject to miscoding and under-reporting of diagnoses and treatments. Additionally, all results were descriptive and unadjusted in nature.
- Travel burden estimates were based on clinical trials and dosing schedules; in real-world clinical practice, patient care may deviate from such schedules due to different monitoring needs, adverse events, or other reasons. It was also assumed that treated patients complete a full 1-year course of BsAbs.
- All travel was assumed to be via car, and travel distance/time was estimated based on distance from the geometric centroid of a patient's home residence ZIP-5. Travel distances and times should be considered approximations Costs of accommodations/lodging were not considered, which may be higher for traveling CAR T patients.

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