

Medicare Utilization and Cost Trends for CAR T Cell Therapies in the Treatment of Large B-Cell Lymphoma

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BACKGROUND

- LBCL Treatment Evolution:** Large B-cell lymphoma (LBCL) treatment has evolved from traditional chemotherapy to targeted therapies like CAR T, aimed at improving patient outcomes and survival rates.
- CAR T Therapy Advancements:** CAR T therapies, such as liso-cel/Breyanzi, tisa-cel/Kymriah, and axi-cel/Yescarta, represent a significant advance in LBCL treatment, offering substantial benefits, especially for patients with limited options.
- Study Focus on Medicare Patients:** This study investigates the use, costs, and outcomes of CAR T therapies in Medicare patients with LBCL, addressing the gap in understanding their impact on an older, frailer population.

OBJECTIVES

- This study examines Medicare use and costs of LBCL CAR T therapies, comparing inpatient and outpatient settings in terms of treatment costs, readmission rates, and intensive care unit use.

METHODS

- Data Source:** CMS 100% Research Identifiable Files database, encompassing Medicare FFS Parts A and B claims for the years 2021 and 2022 was used.
- Patient Cohorts:** Inpatient (IP) and outpatient (OP) cohorts were based on setting of their initial CAR T infusion, focused on resource utilization and Medicare reimbursement.
- Inclusion Criteria:** Adults meeting the following criteria: diagnosis of LBCL, received CAR T therapy, and continuous eligibility in Medicare Parts A and B for 6-months prior to the CAR T and 3-months afterwards. Patients associated with claims linked to clinical trials were excluded.
- Primary Outcomes:** Primary outcomes focused on healthcare resource utilization (HRU) and Medicare reimbursement, with a comprehensive assessment of patient demographics, treatment details, and Charlson Comorbidity Index in the 6-months prior to CAR T therapy.
- HRU and Reimbursement:** HRU during the study period included IP admissions, OP visits, and associated Medicare reimbursements, covering total claim and pharmacy charges. Total reimbursement analysis encompassed costs related to CAR T infusion and subsequent post-infusion charges.
- Focus on Inpatient Cohort:** For the IP CAR T cohort, reimbursement assessments were specifically conducted for patients treated in Prospective Payment System (PPS) hospitals, which are notably different in reimbursement policies from PPS-exempt (typically cancer) hospitals.
- Per-Patient-Per-Month (PMPM):** Calculated by dividing total healthcare expenses incurred during a specific monthly period by the total number of members covered during the same period. Provides a standardized metric often used to compare costs across different populations (such as for financial analyses).

RESULTS

- Age and Gender:** The mean age for IP CAR T patients was about 71.9 years, with a slightly older average in the OPs (71.7 years). Approximately 61% of IP and 62% of OP CAR T patients were male.
- Racial Demographics and Medicare Enrollment:** A majority of patients in both cohorts were white (90% IP, 87% OP) and primarily enrolled in Medicare, presumably due to old age (94% IP, 95% OP).
- Charlson Comorbidity Index (CCI):** The average CCI, indicating the presence of comorbid conditions, was similar across both IP (3.22) and OP (3.01) settings, with no significant difference between the different CAR T products (liso-cel/Breyanzi, tisa-cel/Kymriah, axi-cel/Yescarta) or between IP and OP settings of care.

Table 1 – Patient Demographic by CAR T Product

CAR T Setting	CAR T Product	Unique Patients	Mean Age	Median Age	%Male	%White
Inpatient (IP)	Overall	307 (100%)	71.9	72.0	61%	90%
	Liso-cel (Breyanzi)	87 (28%)	72.6	74.0	59%	84%
	Tisa-cel (Kymriah)	47 (15%)	71.3	72.0	66%	87%
	Axi-cel (Yescarta)	173 (57%)	71.7	71.0	61%	87%
Outpatient (OP)	Overall	86 (100%)	71.7	71.0	62%	87%
	Liso-cel (Breyanzi)	26 (30%)	72.9	73.5	73%	92%
	Tisa-cel (Kymriah)	33 (38%)	72.2	72.0	55%	88%
	Axi-cel (Yescarta)	27 (32%)	69.8	69.0	59%	81%

Figure 1 – Total Medicare Spend for CAR T Episode

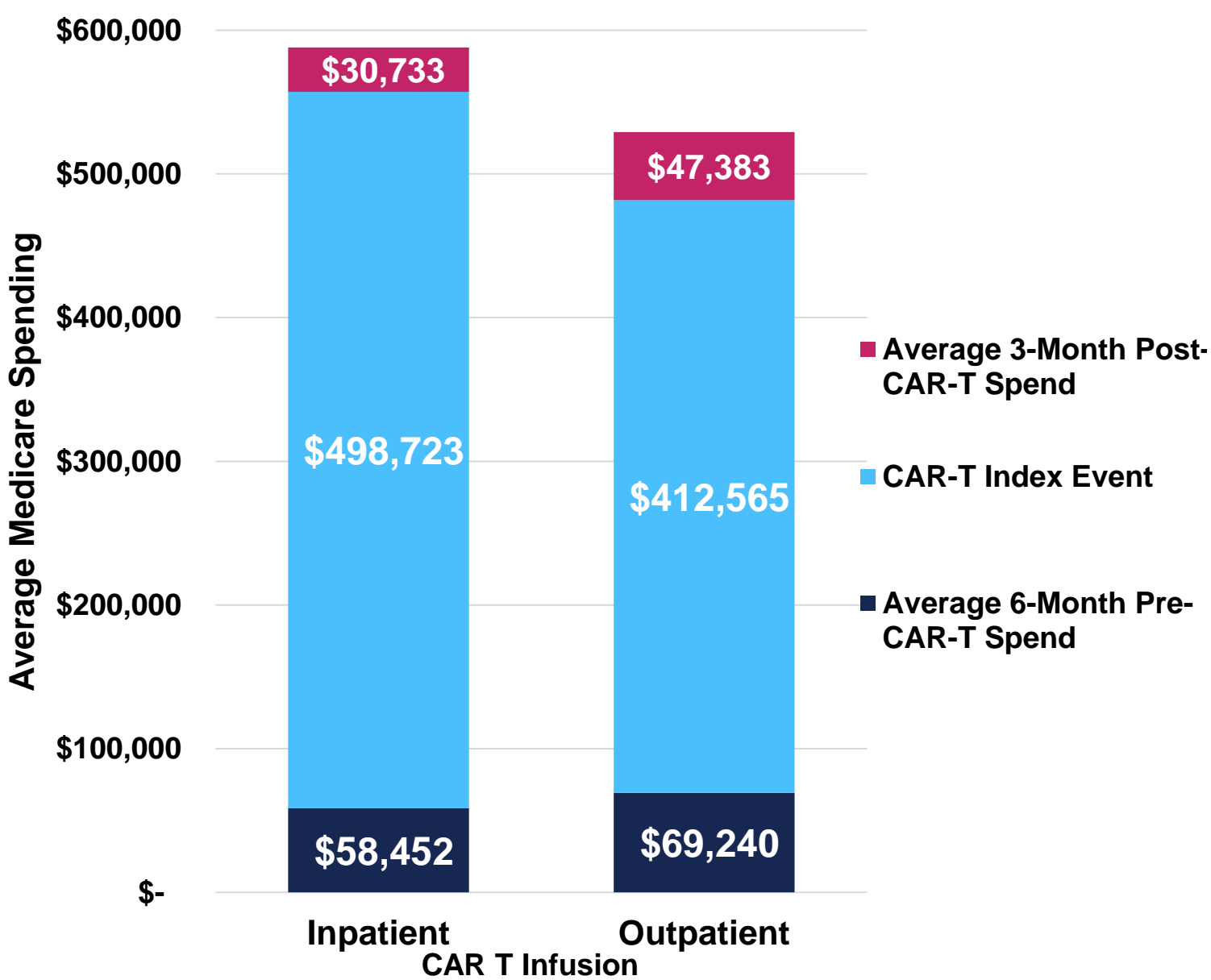
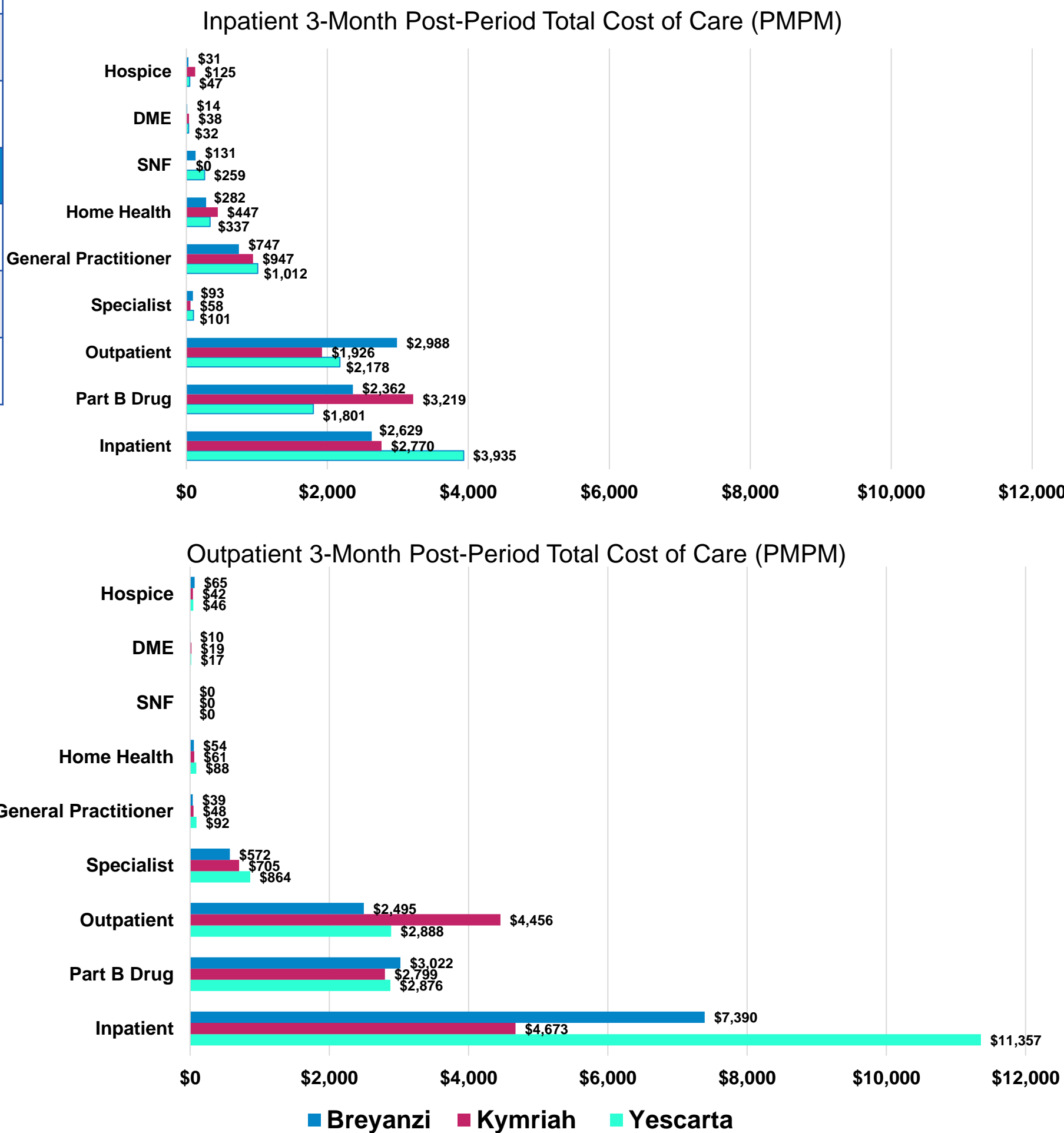


Table 2 – Medicare Spending and Total Claim Charges on CAR T Claims

CAR T Setting	CAR T Product	Unique Patients	Average Medicare Spending	Average Total Claim Charge	Average Length of Stay	%with IP Admission Within 30 Days*	Average Days Between Discharge and Admission	Average ICU Days in Subsequent Admission
Inpatient (IP)	Overall	307 (100%)	\$498,723	\$2,474,831	16.81	21%	14.1	7.7
	Liso-cel (Breyanzi)	87 (28%)	\$500,495	\$2,467,025	13.22	16%	14.7	5.3
	Tisa-cel (Kymriah)	47 (15%)	\$466,514	\$2,276,572	13.21	26%	13.5	11.5
	Axi-cel (Yescarta)	173 (57%)	\$506,682	\$2,532,619	19.60	23%	14.1	7.2
Outpatient (OP)	Overall	86 (100%)	\$412,565	\$1,580,369	N/A	59%	8.0	6.4
	Liso-cel (Breyanzi)	26 (30%)	\$427,414	\$1,620,373	N/A	58%	5.3	7.0
	Tisa-cel (Kymriah)	33 (38%)	\$416,199	\$1,557,678	N/A	42%	9.9	5.5
	Axi-cel (Yescarta)	27 (31%)	\$372,538	\$1,569,581	N/A	78%	7.8	6.7

* Re-admission for those initially receiving CAR T as an IP; first IP admission for those initially receiving CAR T as an OP.

Figure 2 – 3-Month Post CAR T Total Cost of Care by Setting of CAR T Infusion



- Post-Treatment Cost Comparison:** In the 3 months following CAR T therapy, OPs incurred higher costs, notably for IP services (\$7,390 for liso-cel/Breyanzi, \$4,673 for tisa-cel/Kymriah, and \$11,357 for axi-cel/Yescarta), compared to the IP sample.
- Spending Distribution by Services:** OP CAR T therapies saw higher spending on Part B drugs and OP services, while IP CAR T incurred more on services provided in the general practitioner, home health, and hospice care settings, indicating a difference in post-care resource use between the infusion settings.
- Significant Cost Differences:** OP CAR T patients experienced a significantly higher total cost of care (TCOC) post-treatment, with a substantial portion stemming from IP services (47%), in contrast to the corresponding 31% of TCOC in the IP setting for the initial IP CAR T infusion subgroup.

CONCLUSIONS

- All LBCL CAR T products were administered predominantly in the IP setting.
- Each LBCL CAR T product has significant OP utilization with no agent markedly higher than the others (average TCOC \$1.58 million) suggesting slow evolution to OP setting for all LBCL CAR T products.
- Average IP reimbursement for LBCL CAR T products was around \$500,000 demonstrating CMS' assurance for sustainable patient access across the Medicare population.
- Total claim charges across all 3 LBCL CAR T products averaged \$2.4 million, signifying real world evidence of similar Medicare resource utilization across agents.
- Average length of readmission stay for liso-cel/Breyanzi was 5.3 days, tisa-cel/Kymriah 9.9 days, and axi-cel/Yescarta 7.8 days, demonstrating similar resource utilization across the 3 LBCL CAR T products in the older, more frail Medicare population (than commercially-insured).

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DISCLOSURES

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