

Bridging the Access Gap to CAR-T Cell Therapy

Krithika Shanmugasundaram, M.D.^{1,a}; Karen Ballen, M.D.¹

¹ University of Virginia Comprehensive Cancer Center

Corresponding author

^a Krithika Shanmugasundaram, M.D., University of Virginia Comprehensive Cancer Center

Email: kme5gp@uvahealth.org

Keywords

CAR-T, cellular therapy, disparities in care, medicaid

Submission received: 2026-06-09 / Accepted: 2026-08-06 / Published: 2026-08-19

<https://doi.org/10.53876/001c.130061>

Abstract

Although chimeric antigen receptor T-cell (CAR-T) therapy is a highly effective and tolerable cellular therapy for relapsed and refractory non-Hodgkin lymphoma, acute lymphoblastic leukemia, and multiple myeloma, less than half of patients who are eligible for CAR-T therapy receive it. Barriers to access include differences in insurance policies and coverage, distance to a CAR-T center, availability of caregiving and social support, and costs of supportive medical care surrounding CAR-T treatment. These barriers disproportionately affect minorities, rural populations, and lower income families. Some medical advancements in CAR-T therapy are focused on decreasing some of these barriers and community efforts have attempted to bridge these gaps. Ultimately, new strategies and state-level policy changes are needed to overcome these barriers to increase equitable access to CAR-T cell therapy for all patients who need this treatment.

Take Home Messages

1. CAR-T Cell therapy is an effective and tolerable therapy, and nearly all patients with relapsed lymphoma, acute lymphoblastic leukemia, or multiple myeloma deserve consideration for this treatment with a referral to a CAR-T center.
2. Major barriers to CAR-T cell therapy include insurance coverage, distance to a CAR-T center, caregiving support, and unseen costs of medical care (additional childcare, travel, lodging, supportive medications). Patients need readily available support and strategies to overcome these barriers.
3. These barriers disproportionately affect certain populations of patients, including ethnic minorities, lower income families, rural populations, and patients that fall within a lower socioeconomic status, and thus active strategies are needed to help these populations gain improved access to CAR-T cell therapy.

Introduction

Chimeric antigen receptor T-cell (CAR-T) therapy is a novel cellular therapy that has improved outcomes in relapsed and refractory B-cell malignancies such as acute lymphoblastic leukemia (ALL), non-Hodgkin lymphomas (NHL), and multiple myeloma (MM). The gene encoding the chimeric antigen receptor is inserted via a viral vector *ex vivo* and when expressed, these receptors can target antigens on these tumors that an unaltered T-cell could otherwise not recognize. This interaction then directly activates the T-cell, producing a robust anti-tumor response that is effective even in patients who have chemotherapy-refractory disease or have had extensive exposure to chemotherapy previously.

Although CAR-T cell therapy is effective, boasting an 80-97% overall response rate in relapsed disease across all indications,¹⁻⁶ it is not available at most oncology offices and cancer centers.

In this review, we will focus on barriers to access to CAR-T cell therapies, discussing medical, financial, caregiver, and geographic limitations. We will offer some emerging trends that may improve access. We

will focus on the US population, although there are also significant barriers worldwide.

Current Landscape

While most chemotherapies are standard and are often on a formulary, approved CAR-T cell therapies are autologous cellular therapies subject to a multi-step process to produce and then administer the drug. First, it requires apheresis of T-cells and then manufacturing of the CAR-T cells usually at an outside facility, followed finally by processing of the completed product through the receiving institution's cytotherapy lab prior to administering the product. As a cellular therapy, it is highly regulated and requires multiple checkpoints that must be met prior to receiving therapy, including a robust medical evaluation, rigorous review for insurance authorization, apheresis capability at the institution or partnership with a centralized apheresis unit, and cytotherapy labs and trained nursing staff that are able to help ensure accurate infusion of manufactured product, and post-therapy data management and reporting to the Center for International Blood and Marrow Transplant Research (CIBMTR).

Despite the known side effect profile of CAR-T, mainly driven by the severe inflammatory reaction between the CAR-T-cell and the target tumor cells, CAR T-cell therapy is fairly well tolerated and is often a welcome alternative to autologous transplant. The inflammation from CAR-T can manifest as a severe cytokine release syndrome (CRS) requiring ICU-level care, as an immune effector cell-associated neurotoxicity syndrome (ICANS), characterized by confusion, seizure or even a coma, and sometimes the inflammation from CAR-T can lead to prolonged cytopenias that requires long-term transfusion or granulocyte colony-stimulating factor support. In some rare instances, CAR-T can lead to an inflammatory syndrome similar to hemophagocytic lymphohistiocytosis (HLH), termed immune effector cell-associated HLH syndrome (IEC-HS). Although these side effects can range from mild to severe, they are manageable and often completely reversible. In newer constructs of this cellular therapy, the incidence of these severe side effects has decreased dramatically to as low as less than 5% of cases.⁷ Thus, while patients still have certain requirements for medical fitness to receive CAR-T, many more patients are eligible for CAR-

Table 1. Prices per CAR T cell therapy product as of March 1, 2023. DLBCL: Diffuse large B-cell lymphoma; FL: follicular lymphoma; MCL: mantle cell lymphoma; ALL: acute lymphoblastic lymphoma; MM: Multiple myeloma.

CAR T-cell Product	Commercial Name	Indication	Acquisition Cost
Axicabtagene ciloleucel	Yescarta	DLBCL, FL	\$424,000
Brexucabtagene autoleucel	Tecartus	MCL, ALL	\$424,000
Tisagenlecleucel	Kymriah	DLBCL, FL	\$427,048
Tisagenlecleucel	Kymriah	ALL	\$543,828
Lisocabtagene maraleucel	Breyanzi	DLBCL, FL, MCL	\$447,227
Obecabtagene autoleucel	Aucatzyl	ALL	\$475,000
Idecabtagene autoleucel	Abecma	MM	\$457,255
Ciltacabtagene autoleucel	Carvykti	MM	\$465,000

T therapy than autologous or allogeneic stem cell transplant. However, even among those that are deemed medically eligible for CAR-T therapy, as few as 25% receive this treatment.^{8,9}

Among the thousands of eligible cancer centers in the United States that offer treatment for adults and children with B-ALL, lymphoma, and multiple myeloma, only 178 centers are eligible to administer CAR-T cell and have accreditation status from the Foundation for Accreditation of Cellular Therapy (FACT) as of 2025.¹⁰ This averages to at most 3–4 institutions per state that offer CAR-T cell therapy from a FACT-accredited institution, with 22 states holding only 2 or fewer CAR-T centers, and 3 states with none (Maine, Alaska, and Wyoming),¹¹ severely limiting the reach of CAR-T to the entirety of the population within the United States that may need it. Although some centers do offer administration of CAR-T without FACT accreditation, payers often limit reimbursement based on FACT-accreditation, which impedes access to CAR-T at these centers.¹²

The most common side effects of CAR-T such as CRS and neurotoxicity are limited to occurrence within the first 2 weeks and thus have decreased the FDA-label requirements to only 2 weeks of monitoring within proximity to the administering facility.¹³ However, due to the immediate and potentially prolonged debility that can occur from these complications, most institutions require daily 24-hour consistent caregiver support during the first

2-4 weeks after infusion. A capable caregiver for this circumstance may be difficult for many patients to identify and often leads to hesitation in pursuing this therapy.

In addition to the logistical requirements on both the institutions' part and our patients' perspectives, CAR-T is an incredibly expensive therapy, upwards of \$350,000¹⁴ for the product alone (Table 1), and patients are unable to afford this treatment without insurance approval.

In this review, we aim to illustrate the ongoing barriers to access for CAR-T cell therapy in the current landscape of treatment for B-ALL, NHL, and myeloma, as well as present the implications in care to patients in the United States as a potential consequence of these barriers. We propose some strategies to improve access.

Medical Barriers to CAR-T Cell Therapy

As an autologous cellular product, CAR-T has often been compared to autologous transplant when evaluating safety and efficacy. While efficacy appears to be similar or superior to autologous transplant for most indications, it is generally much better tolerated and has a more favorable morbidity profile, due to decreased incidence and severity of myelosuppression, mucositis, and chemotherapy-induced organ toxicities. However, referrals and eligibility at treatment centers are often based

on standards necessary for autologous transplant¹⁵ based on ability to tolerate potential severe infections due to aforementioned myelosuppression, mucositis, and organ toxicity. This can often exclude potentially eligible patients from being considered for referral to a center that can offer them CAR-T for which these toxicities are not common expected outcomes.

While CAR-T has generally safe outcomes in both trial and real-world studies, the unique side effects of CAR-T arise from systemic inflammation and thus can affect nearly any organ system, so it is important to have a multi-disciplinary approach to evaluating a patient with multiple comorbidities for CAR-T cell therapy. Ultimately, the risk of life-threatening exacerbation of a pre-existing comorbidity, such as chronic obstructive pulmonary disease, congestive heart failure, or epilepsy may limit a patient's eligibility for CAR-T cell therapy as well.

Another key aspect of medical fitness evaluations for CAR-T cell therapy is evaluating performance status. Although the vast majority of cases of CRS and ICANS are reversible, the hospitalization and potential intensive care unit care for monitoring and symptom management can lead to severe deconditioning for patients. Thus, a high baseline performance status is critical in helping patients recover after receiving therapy. However, patients may not have an acceptable performance status at time of referral due to ongoing disease progression, current therapy, or baseline poor performance status.¹⁶ Patients who are not able to exhibit an improved performance status, either by achieving better disease control or the ability to work with physical therapy, are often unable to receive this treatment.

Distance/Rural Populations at a Disadvantage

Given the relative paucity of eligible centers that offer CAR-T-cell therapy at their facilities in the United States, patients are often required to travel well beyond their local oncologist's office to seek out CAR-T as a potential treatment. As less than 180 centers are FACT-accredited to provide CAR-T currently, patients in rural populations are at a significant disadvantage as they are required to

overcome challenges related to living at a distance to receive this specialized care.

Chung et al reported on data gathered from the SEER database for patients with relapsed DLBCL. Of the 2241 patients treated for 3rd line or later DLBCL, only 5.4% received CAR (n=122).¹⁷ This is in contrast with our clinical perception that nearly all patients evaluated for CAR-T are medically eligible to receive it. This study illustrates that for every 10 miles further patients are from a treatment center offering CAR-T, they are 6.2% less likely to receive it.¹⁷ The probability of receiving CAR-T decreased by nearly half when there was no treatment center within 25 miles of the patient's postal zip code. This significantly adversely affects more than half of patients being considered for CAR-T, as the median distance from a treatment center for patients is 30 miles. Maine, Alaska, and Wyoming do not have a CAR-T program within state lines, and thus the travel to a CAR-T center becomes a much larger burden for patients living within these states.

Financial Toxicity/Financial Clearance

The overall cost of CAR-T cell therapy is prohibitive unless there is near-total insurance coverage of the procedure and post-procedure care.¹⁴ The product itself costs over \$300,000 (Table 1). Thus patients who are uninsured or underinsured are unable to receive this potent and potentially curative therapy.¹⁸ When comparing state-based insurance coverage of CAR-T cell therapy to the FDA-approved indications and specifications, numerous states have discordant policies that do not align with the indications prescribed by the FDA, thus making CAR-T therapy completely inaccessible for those residents with state-based insurance plans, such as Medicaid, but otherwise medically qualify for this treatment. Six states noted to have "unreasonable" criteria not matching FDA indications were Louisiana, West Virginia, North Carolina, Wisconsin, Iowa, and Utah. Patients who have Louisiana Medicaid are completely unable to be referred and thus cannot receive potentially life-saving curative therapy with CAR-T cell therapy.^{17,19,20}

Additionally, the cost of post-infusion care may be prohibitive if underinsured.^{16,21} One study has calculated average post-infusion costs of healthcare to range between \$380,000 to \$679,000,²² which in-

cludes costs of clinic appointments, hospitalizations for complications, and outpatient medications. In addition to charges related to healthcare costs, patients face multiple hidden costs to post-CAR-T cell care, including taking time off from work, finding housing near the institution, transportation to appointments, and child care.

Caregiver Barriers

Monitoring post-CAR-T cell therapy requires ongoing caregiver support. As more and more institutions are moving to administer CAR-T cell therapy in the outpatient setting, centers that provide CAR-T cell therapy are relying more on caregivers to help patients alert the medical team when new symptoms arise, such as fever, confusion and other symptoms concerning for CRS, ICANS, or other post-CAR-T complications. While the Food and Drug Administration (FDA) has rolled back requirements for patients to be within close proximity to the administering center to only 2 weeks post-infusion, many patients may require a caregiver for up to 4 weeks or longer if recovery from CAR-T cell therapy requires more time. This is often a barrier for patients who do not have family or friends able to readily take time off of work, able to provide transportation, or able to physically meet the patient's needs as a caregiver post-CAR-T infusion.^{16,18} For patients who have children or dependent adults, they often will need to find additional caregiving support for childcare or eldercare while they are receiving treatment, which then doubles the burden of finding appropriate caregiving support.¹⁸ Potential loss of employment or wages due to caregiving demands may disproportionately affect a family's choice to pursue CAR-T or ability to support post-CAR-T when in a lower economic bracket than for those that have more discretionary income.

Resulting Disparities in Care and Outcomes due to Disparities in Access

The multitude of considerations that providing CAR-T therapy poses has limited this unique and complex therapy to mainly academic centers that specialize in cellular therapy. However, these ongoing challenges in accessing CAR T have created disparities in care across race and socioeconomic status.

Black patients have been underrepresented in pivotal CAR-T clinical trials and continue to have less access to CAR-T trials. Of the 10 states in the US that have the highest population of Black residents, 4 of them have 0 CAR-T trials open: District of Columbia, Mississippi, Louisiana, and Delaware.²³ Only 10 states total had more than 50% of the Black populations living in a county with an open CAR-T trial. This translates to limited understanding of pathophysiology that may be affecting overall efficacy for these patients.²³ Black patients have a higher risk of being diagnosed with myeloma, higher-risk myeloma, and diagnosed at younger ages. However, Black patients are less likely to receive CAR-T compared to White patients.^{24,25}

In a study describing outcomes in Asian, Black and White patients receiving CAR-T for diffuse large B-cell lymphoma and follicular lymphoma, Asian patients had significantly worse overall response rates. Both Asian and Black patients had worse progression-free survival after receiving CAR-T cell therapy as well.²⁶

Although Hispanic people comprise the fastest growing non-White group in the U.S., they still remain underrepresented in clinical trials²⁵ and encompass only a small proportion of patients who receive CAR-T cell therapy in real world data sets.²⁷ In the limited data available, efficacy appears to be similar in Hispanic patients compared to white patients for CAR-T treatment for B-ALL,²⁸ the response rate is significantly lower in Hispanic patients receiving CAR-T for MM compared to non-Hispanic Black and White patients.²⁹ Additionally, Hispanic patients do appear to be at a higher risk of severe toxicity from CAR-T.²⁸

When evaluating patients who receive therapies for multiple myeloma, patients are more likely to receive CAR-T if they are of higher socioeconomic status or have non-Medicaid insurance.²⁵ Only 7.4% of patients receiving CAR-T for multiple myeloma were from households with income less than \$40,000,²⁵ highlighting the increased ease of access to CAR-T with a higher margin of disposable income. In a study looking at CAR-T utilization across multiple indications (lymphoma, myeloma, and acute lymphoblastic leukemia), utilization remained below 20% from households within the lowest quartile for income.³⁰ This disparity undoubtedly contributes to the poor outcomes in patients

Table 2.

Barriers	Potential solutions
Distance/lack of transportation	Improved travel benefits from insurance companies
Lack of Caregiver	Insurance coverage for paid caregiving Increasing national and local navigation resources for patients
Time needed for treatment (i.e. apheresis, LD chemotherapy)	Advent of allogeneic "off-the-shelf" CAR-T cell therapies In vivo CAR-T cell therapies
Identifying appropriate referrals	Wider education and inclusion in NCCN guidelines on broader criteria for referral for CAR-T consideration
Underinsured	Policy changes necessary in state governments to ensure all insurances cover cost of CAR-T drug and hospitalization
Medical mistrust	Community-based efforts to increase awareness and education

living in a lower socioeconomic bracket compared to those within a higher socioeconomic bracket.^{31,32}

Emerging Trends

New Challenges

CAR-T cell therapy is moving up to earlier lines of therapy. While currently approved in the second line setting for B-ALL, MM, diffuse large B-cell lymphoma (DLBCL), and chronic lymphocytic leukemia (CLL), recent and ongoing trials are evaluating its role as part of first-line treatment. DURGA-2 is an ongoing Phase II clinical trial that is using a new bispecific CAR construct (targeting both BCMA and CD19) that uses CAR-T consolidation instead of stem cell transplant for high-risk myeloma. CARTITUDE-6 is an ongoing phase III randomized trial comparing CAR-T-cell therapy to the prior standard of care autologous transplant as consolidation therapy for multiple myeloma following induction. If this trial shows greater benefit for patients receiving CAR-T consolidation, this will shift practice to considering and referring patients for CAR-T likely close to the time of initiation of treatment for newly diagnosed myeloma.

ZUMA-12 evaluated axicabtagene ciloleucel as part of first-line therapy in high-risk DLBCL after two initial cycles of chemotherapy, and this approach showed high overall response rates and sustained

complete responses at 3 years for 78% of patients,³³ which is currently similar to standard first-line treatments of Pola-R-CHP or R-CHOP³⁴ and may actually prove to be better than standard of care for high-risk DLBCL, in particular. However, patients who present for initial treatment to a local oncologist may have difficulty receiving CAR-T as part of front-line therapy given the barriers listed above, including transportation, hidden costs, and caregiver access. The pipeline to CAR-T cell therapy still requires increased awareness on the benefits and tolerability of this therapy in earlier lines of treatment as well as a timely and effective referral system to tertiary care centers to initiate evaluation and treatment with CAR-T cell therapy in these earlier settings. Currently, many local oncology offices use eligibility criteria for CAR-T that are identical to criteria for autologous stem cell transplant.¹⁵ However, with newer products with improved safety profiles and evolving toxicity management that decreases recovery time, there are many patients who fall into the category of "transplant-ineligible, but CAR-T-eligible," and the characteristics of this population may not be readily noticeable outside of a cellular therapy treatment center.^{15,35} Thus, it becomes important to refer, even when it is unclear whether patients will be candidates for CAR-T initially.

New Solutions

There are many approaches being currently explored to improve access to CAR-T cell therapy for our patients (Table 2).

Scientifically, many pharmaceutical companies are working on providing an "off-the-shelf" allogeneic CAR-T cell product, which would eliminate the need for apheresis and bridging therapy. This would allow patients to receive CAR-T cell therapy more quickly and before insurmountable disease progression. This would also lessen burden of caregiving and time off of work for apheresis or bridging therapy. Additionally, without the need for apheresis and the ability to make "batch" supplies of product, the cost of each CAR-T product does decrease significantly, and may improve accessibility for patients who are underinsured.³⁶

In vivo CAR-T cell products are also being explored as a potential avenue to reduce the treatment burden. This technology would allow for integration of the CAR vector into the endogenous T-cells within patients and thus eliminate the need for lymphodepletion chemotherapy,³⁷ which would decrease time off work, caregiver burden, and transportation burden for the patient as well.

Academic centers are increasing their use of telehealth to help reach patients in rural areas and allow for care that is less disruptive for patients.³⁸ Community partners are also gaining comfort with managing toxicities associated with CAR-T cell therapy and are either able to offer close monitoring at home or, in some instances, are able to provide outpatient CAR-T cell therapy with local apheresis for product manufacturing.³⁹ Although increasing local CAR-T treatment centers is a potential avenue forward and encouraged as a long-term strategy, building infrastructure for this is resource-intensive, and thus it is still important to continue efforts to increase referrals for CAR-T to better match the increasing pool of eligible patients. Ultimately, we advocate that nearly every patient who medically may benefit from CAR-T be referred to help make a joint decision with a CAR-T center to determine fitness for and feasibility of CAR-T. To meet this goal, various national and local programs have been developed to assist with alleviating patient barriers to receiving both initial consultation and eventual treatment with CAR-T.⁴⁰ The National Marrow Donor Program (NMDP) has navigation available for patients before and after receiving cellular therapy and an organization

in D.C., Cancer Support Center, offers proactive navigation from the time of referral through consultation and treatment for patients to help overcome barriers such as lodging, transportation, or anxiety related to the consultation.⁴⁰ Many patient-partner organizations such as Lymphoma Research Foundation, International Myeloma Foundation, and the Healthtree Foundation offer navigation resources for patients who are exploring the option of CAR-T cell therapy. Many of the companies that provide CAR-T cell therapy also have programs that provide housing and cover some transportation costs related to CAR-T cell therapy and post-infusion monitoring.

To overcome many financial and situational barriers that patients face in receiving CAR-T, increased advocacy is needed to raise concerns regarding the discrepancies surrounding Medicare, Medicaid, and private payer policies in their coverage policies for CAR-T.

Conclusions

CAR-T cell therapy has been approved for 2nd line treatment and beyond for relapsed and refractory lymphoma, myeloma, and acute lymphoblastic lymphoma. However, only 20% of potentially eligible patients are receiving CAR-T cell therapy. Barriers that lead to this dismal proportion of patients receiving this potent treatment include financial burden of treatment due to differences in insurance policies, burden of caregiving, distance of treatment center, lack of robust referral and navigation methods, and hidden costs of receiving therapy including transportation, time off of work, and childcare.

Although there are scientific and community-based efforts to help increase access to CAR-T cell therapy, policy and system changes are needed to substantially increase the reach of CAR-T to the patients who require this treatment. Restrictions on use due to state-based insurance policies, lack of treatment centers within a 30-mile radius of vulnerable patients, and lack of adequate caregiving require larger systems-based solutions to help bring this life-saving therapy to all patients who can benefit from it. With more education geared towards increasing awareness in local communities, oncology practices, and policy-makers on benefits and tolerability of CAR-T, we can hope to improve

the access to CAR-T further through these multiple approaches.

Conflict(s) of Interest

The authors declare no conflicts of interest.

Funding Information

N/A

Ethical Statements

N/A. This review involved no primary data collection from human participants.

Informed Consent

N/A

Data Availability Statement

No new data were generated or analyzed in this study.

Declaration of AI Use in Scientific Writing

Not applicable. AI tools were not used to generate scientific content, interpret data, or influence the conclusions of this review.

Author Contributions

Concept and design: KS, KB

Data acquisition: KS, KB

Data analysis and interpretation: KS, KB

Drafting of the manuscript: KS, KB

Critical revision of the manuscript: KS, KB

All authors (KS, KB) approved the final version of the manuscript and agree to be accountable for all aspects of the work, in accordance with the International Committee of Medical Journal Editors criteria.

References

1. Locke FL, Miklos DB, Jacobson CA, et al. Axicabtagene ciloleucel as second-line therapy for large B-cell lymphoma. *N Engl J Med*. 2022;386(7):640-654.
2. Shah BD, Ghobadi A, Oluwole OO, et al. Three-year analysis of adult patients with relapsed or refractory B-cell acute lymphoblastic leukemia treated with brexucabtagene autoleucel in ZUMA-3. *Leukemia*. 2025;39(5):1058-1068.
3. Muhsen IN, Gourdin TS, Geer M, et al. Outcomes of brexucabtagene autoleucel in patients with relapsed/refractory acute lymphoblastic leukemia with CNS involvement. *Blood Adv*. 2025;9(16):4081-4089.
4. Wang M, Munoz J, Goy A, et al. Lisocabtagene maraleucel in relapsed/refractory mantle cell lymphoma: primary analysis of the mantle cell lymphoma cohort from TRANSCEND NHL 001, a phase I multicenter seamless design study. *J Clin Oncol*. 2024;42(10):1146-1157.
5. Huang J, Siddiqi T, Ghia P, et al. Superior real-world outcomes of lisocabtagene maraleucel in chronic lymphocytic leukemia. *Blood*. 2025;146(Supplement 1):798-798.
6. Morschhauser F, Fowler NH, Dickinson M, et al. Lisocabtagene maraleucel in follicular lymphoma: the phase 2 TRANSCEND FL study. *Nat Med*. 2024;30(8):2199-2207.
7. Abramson JS, Solomon SR, Arnason J, et al. Lisocabtagene maraleucel as second-line therapy for large B-cell lymphoma: primary analysis of the phase 3 TRANSFORM study. *Blood*. 2023;141(14):1675-1684.
8. Perales MA, Shadman M, Engelen K, et al. Real-world treatment patterns of large B-cell lymphoma patients over time in a post-CAR T approval era. *Transplant Cell Ther*. 2025;31(2):S391.
9. Kourelis T, Bansal R, Ailawadhi S, et al. Ethical challenges with CAR T slot allocation with idecabtagene vicleucel manufacturing access. *J Clin Oncol*. 2022;40(16_suppl):e20021-e20021.
10. Kara Wacker M. FACT—Number of FACT-accredited clinical programs grows in midst of increased patient demand and calls for improved patient access. ISCT Global. 2025. Accessed May 26, 2026. <https://www.isctglobal.org/telegrafthub/blogs/isct-head-office1/2025/09/10/fact-number-of-fact-accredited-clinical-programs-g>

11. Directory of CAR T-cell therapy centers. BMT InfoNet. Accessed May 26, 2026. <https://bmtinfonet.org/directory-car-t-cell-therapy-centers>
12. Singh S, Nair V, Goel G, et al. Operationalizing access for chimeric antigen receptor T cell therapies: a cross-functional perspective. *Mayo Clin Proc Innov Qual Outcomes*. 2026;10(1):100682.
13. Hunter BD, Jacobson CA, Oluwale OO, et al. CRS or ICANS are rare beyond 2 weeks after lisocabtagene maraleucel infusion: data from clinical trials and the real-world setting. *Transplant Cell Ther*. 2026;32(2):171.e1-171.e12.
14. Fiorenza S, Ritchie DS, Ramber SF, et al. Value and affordability of CAR T-cell therapy in the United States. *Bone Marrow Transplant*. 2020;55(9):1706-1715.
15. Shadman M, Pasquini MC, Ahn KW, et al. Who is eligible for chimeric antigen receptor T cell therapy? Expert perspectives on overcoming referral barriers. *Transplant Cell Ther*. 2026;32(3):277-287.
16. Sureda A, Villacampa G, Bosch F, et al. Logistical challenges of CAR T-cell therapy in non-Hodgkin lymphoma: a survey of healthcare professionals. *Future Oncol*. 2024;20(36):2855-2868.
17. Chung AP, Narra RK, Sun Q, et al. Inequalities in CAR T-cell therapy access for US patients with relapsed/refractory DLBCL: a SEER-Medicare data analysis. *Blood Adv*. 2025;9(18):4727-4735.
18. Newell A, Lim B, McGinnis J, et al. The burdens associated with receiving CAR T-cell therapy: a qualitative study of CAR T patients and caregivers. *Blood*. 2025;146:7689.
19. Popat D, Chennapragada SS, Nair R, et al. Disparities in access to CAR-T therapy in a Medicaid-predominant population: a Louisiana case study highlighting policy lag. *Blood*. 2025;146:6318.
20. Chennapragada SS, Nair R, Popat D, et al. CAR-T therapy access with Louisiana Medicaid: a single institution retrospective analysis. *J Clin Oncol*. 2023;41(16_suppl):e18580-e18580.
21. Keating SJ, Taylor MD, Garfield S, et al. Health care resource utilization and total costs of care among patients with diffuse large B cell lymphoma treated with chimeric antigen receptor T cell therapy in the United States. *Transplant Cell Ther*. 2022;28(7):404.e1-404.e6.
22. Keating SJ, Taylor MD, Garfield S, et al. Health care resource utilization and total costs of care among patients with diffuse large B cell lymphoma treated with chimeric antigen receptor T cell therapy in the United States.
23. Alqazaqi R, Mohan M, Shune L, et al. Geographic and racial disparities in access to chimeric antigen receptor-T cells and bispecific antibodies trials for multiple myeloma. *JAMA Netw Open*. 2022;5(8):e2228877-e2228877.
24. Davidson J, Nair V, Singh S, et al. Investigating CAR-T treatment access for multiple myeloma patients using real-world evidence. *Cancers*. 2026;18(4):669.
25. Ahmed N, Shahzad M, Shippey E, et al. Socioeconomic and racial disparity in chimeric antigen receptor T cell therapy access. *Transplant Cell Ther*. 2022;28(7):358-364.
26. Karmali R, Patel K, Engelen K, et al. Impact of race and social determinants of health on outcomes in patients with aggressive B-cell NHL treated with CAR-T therapy. *Blood Adv*. 2024;8(10):2592-2599.
27. Locke FL, Jacobson CA, Miklos DB, et al. Real-world outcomes of axicabtagene ciloleucel (Axi-cel) for the treatment of large B-cell lymphoma (LBCL) by race and ethnicity. *J Clin Oncol*. 40(16_suppl):7571-7571.
28. Faruqi AA, Slade M, Vij R, et al. The impact of race, ethnicity, and obesity on CAR T-cell therapy outcomes.
29. Peres LC, Rein LAM, Engel-Riedel W, et al. Racial and ethnic differences in clinical outcomes among patients with multiple myeloma treated with CAR T-cell therapy. *Blood Adv*. 2024;8(1):251-259.
30. Iyer N, Patel K, Engelen K, et al. Uneven access to CAR T-cell therapy: a socioeconomic snapshot across hematologic cancers. *JCO Oncol Pract*. 2025;21(10_suppl):186-186.
31. Chao C, Yang DD, Henk HJ, et al. Survival differences by race/ethnicity and neighborhood socioeconomic status in adolescents and young

- adults diagnosed with non-Hodgkin lymphoma. *J Adolesc Young Adult Oncol.* 2015;4(2):76-83.
32. Hong YD, Peres LC, Thompson RC, et al. Association of individual low-income status and area deprivation with mortality in multiple myeloma. *J Geriatr Oncol.* 2023;14(2):101415.
 33. Chavez JC, Locke FL, Jain MD, et al. Three-year follow-up analysis of first-line axi-cabtagene ciloleucel for high-risk large B-cell lymphoma: the ZUMA-12 study. *Blood.* 2025;145(20):2303-2311.
 34. Hervé T, Tilly H, Morschhauser F, et al. Polatuzumab vedotin in previously untreated diffuse large B-cell lymphoma. *N Engl J Med.* 2022;386(4):351-363.
 35. Vic S, Brecht A, Lemieux C, et al. Transplant-ineligible but chimeric antigen receptor T-cells eligible: a real and relevant population. *Eur J Cancer.* 2022;175:246-253.
 36. Cliff ERS, Kesselheim AS, Neelapu SS, et al. High cost of chimeric antigen receptor T-cells: challenges and solutions. *Am Soc Clin Oncol Educ Book.* 2023;(43):e397912.
 37. Bot A, Maus MV, Parente-Pereira AC, et al. In vivo chimeric antigen receptor (CAR)-T cell therapy. *Nat Rev Drug Discov.* 2026;25(2):116-137.
 38. Shaver J. The state of telehealth before and after the COVID-19 pandemic.
 39. Simmons GL, Cross S, Pittos EC. Advancing access to CAR T-cell therapy: insights and real-world experience from a community oncology practice.
 40. Costello K, Moodie K, Lim B, et al. Barriers to care identified and interventions provided by Cancer Support Community's proactive CAR T navigation program: bridging the gap in patient & caregiver needs. *Blood.* 2024;144:3716.
 41. Cliff EAX, Kesselheim AS, Neelapu SS, et al. High cost of chimeric antigen receptor T-cells: challenges and solutions.