CarePartners of Connecticut MEDICARE ADVANTAGE

Medical Necessity Guidelines
Medical Benefit Drugs

Zynteglo® (betibeglogene autotemcel)

Effective: January 1, 2026

Prior Authorization Required If REQUIRED, submit supporting clinical documentation pertinent to service request.	Yes ☒ No ☐

Applies to:

☒ CarePartners of Connecticut Medicare Advantage HMO plans, Fax 617-673-0956
☒ CarePartners of Connecticut Medicare Advantage PPO plans, Fax 617-673-0956

Note: While you may not be the provider responsible for obtaining prior authorization, as a condition of payment you will need to ensure that prior authorization has been obtained.

Overview

Beta-thalassemia is a type of inherited blood disorder that causes a reduction of normal hemoglobin and red blood cells in the blood, through mutations in the beta-globin subunit, leading to insufficient delivery of oxygen in the body. The reduced levels of red blood cells can lead to a number of health issues including dizziness, weakness, fatigue, bone abnormalities and more serious complications. Transfusion-dependent beta-thalassemia, the most severe form of the condition, generally requires life-long red blood cell transfusions (usually every 2 to 5 weeks) as the standard course of treatment. These regular transfusions can be associated with multiple health complications of their own, including problems in the heart, liver and other organs due to an excessive build-up of iron in the body.

Zynteglo was approved by the FDA on August 17, 2022 for the treatment of adult and pediatric patients with beta thalassemia who require regular blood cell (RBC) transfusions. The product was approved for single intravenous administration only; repeat administration of Zynteglo and its use for the treatment of other indications have not been evaluated.

Zynteglo gene therapy involves inserting a copy of a functional copy of the human beta-globin (HBB) gene into a patient's hematopoietic stem cells outside of the body using a lentiviral vector and then transplanting the modified stem cells back into the patient's blood stream, with the aim that the functional HBB gene will result in normal beta-globin protein expression. The use of autologous stem cells in gene replacement therapy removes the need for a compatible stem cell donor which has limited the ability of individuals to receive allogenic SCT. Lentivirus factors are used because they are capable of accepting the insertion and complex DNA sequences.

Food and Drug Administration (FDA) Approved Indications:

- ZYNTEGLO (betibeglogene autotemcel) is an autologous hematopoietic stem cell-based gene therapy indicated for the treatment of adult and pediatric patients with β-thalassemia who require regular red blood cell (RBC) transfusions.

Zynteglo works by inserting functional copies of a modified form of the beta-globin gene into a patient's own hematopoietic stem cells to enable the production of a modified functional adult hemoglobin. Full myeloablative conditioning must be administered before infusion of Zynteglo. The administration and preparation processes are complex and require hospitalization. The main steps involved include:

- HSC mobilization and apheresis (occurs 70-90 days before infusion of Zynteglo)
- Myeloablative conditioning using busulfan
- Zynteglo intravenous infusion
- Hospitalization for 3 to 6 weeks after infusion. In clinical trials, the median duration of hospitalization was 45 days from conditioning to discharge

Note: Zynteglo can only be administered at a Zynteglo Qualified Treatment Center (QTC). Each Zynteglo QTC has been carefully selected based on their expertise in areas such as transplant, cell and gene therapy. For information on locating a Zynteglo Qualified Treatment Center, please go to https://www.zynteglo.com/treatment-center-locator or call 1-833-888-NEST (6378).

The Plan uses guidance from the Centers for Medicare and Medicaid Services (CMS) for its Medicare Advantage plan members. CMS National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Local Coverage Articles (LCAs) and documentation included in the Medicare manuals are the basis for coverage determinations. When CMS does not provide guidance, the Plan's internally developed medical necessity guidelines are used. CMS coverage guidelines is not established for this service. Point32Health covers Zynteglo in accordance with MassHealth coverage criteria.

For the therapy Zynteglo, evidence is sufficient for coverage based on FDA approval in August 2022. This approval was based off of the NorthStar-2, NorthStar 3, and a long term follow up study LTF-303. Eighty nine percent (89%) of patients achieved transfusion independence, meaning they did not need red blood cell (RBC) transfusions for at least 12 months post receiving Zynteglo, while also maintaining a weighted average hemoglobin level. Given the effectiveness of Zynteglo, FDA approval, and lack of alternative options for patients who do not have a matched HSCT donor, Zynteglo would be an appropriate one-time treatment option for select Members.

The use of this criteria in the utilization management process will ensure access to evidence based clinically appropriate care. See References section below for all evidence accessed in the development of these criteria.

Clinical Guideline Coverage Criteria

The Plan may cover a one-time infusion of Zynteglo for Members when all of the following criteria are met and supporting clinical documentation is submitted:

1. The provider attests that the member has a diagnosis of transfusion dependent beta thalassemia* ("β -Thalassemia Major" or "TDT"); **and**
2. The Member has a genetic test confirming diagnosis; **and**
3. The Provider is a hematologist or consult notes from a hematologist are provided; **and**
4. Member is less than 51 years of age; **and**
5. Appropriate dosing and treatment dates (Member's weight and dates must be provided); **and**
6. The Member has a negative serology test for HIV; **and**
7. The Member has required ≥100 mL/kg/year of pRBC or ≥ 8 transfusions within the last 12 months; **and**
8. The infusion will take place in a qualified treatment center; **and**
9. The Member is clinically stable and would be considered a candidate for allogenic hematopoietic stem cell transplantation (HSCT).
10. Member has not received any prior gene therapy for TDT

Limitations

- Authorization of Zynteglo will be limited to one treatment per lifetime. Any Member who has previously received Zynteglo through a clinical trial or while insured under another health plan will not be approved for a repeat course of treatment. The safety and efficacy of repeat doses of Zynteglo has not been evaluated.

Codes

The following code(s) require prior authorization:

Table 1: HCPCS Codes

HCPCS Codes	Description
J3393	Injection, betibeglogene autotemcel, per treatment

References:

1. FDA Approves First Cell-Based Gene Therapy to Treat Adult and Pediatric Patients with Beta-thalassemia Who Require Regular Blood Transfusions. US Food and Drug Administration. August 17, 2022. Accessed online August 18, 2022 at https://web.archive.org/web/20220821044703/http:/www.fda.gov/news-events/press-announcements/fda-approves-first-cell-based-gene-therapy-treat-adult-and-pediatric-patients-beta-thalassemia-who
2. Clinical Study Protocol HGB-207.Cambridge, MA; bluebird bio, inc.; 27 January 2016
3. Lai, X., Liu, L., Zhang, Z. et al. Hepatic veno-occlusive disease/sinusoidal obstruction syndrome after hematopoietic stem cell transplantation for thalassemia major: incidence, management, and outcome. Bone Marrow Transplant 56, 1635–1641 (2021).
4. Lentiglobin and Luspatercept for Beta-Thalassemia: Effectiveness and Value. Institute for Clinical and Economic Review (ICER).January 6, 2020.
5. Locatelli F, Thompson AA, Kwiatkowski JL, et al. Betibeglogene Autotemcel Gene Therapy for Non-β 0 /β0 Genotype β-Thalassemia. N Engl J Med. 2022;386(5):415-427.
6. Locatelli F, Thompson AA, Kwiatkowski JL, et al. Supplementary Appendix: Betibeglogene Autotemcel Gene Therapy for Non-β 0 /β0 Genotype β-Thalassemia. N Engl J Med. 2022;386(5):415-427.

7. MassHealth Drug List - health and human services. Table 45: Beta Thalassemia, Myelodysplastic Syndrome, and Sickle Cell Disease Agents. April 2024. Accessed June 7, 2024. https://mhdl.pharmacy.services.conduent.com/MHDL/pubtheradetail.do?id=16
8. Zynteglo (betibeglogene autotemcel) [prescribing information]. Somerville, MA; bluebird bio, inc.; August 2022.
9. Taher AT, et. al. editors. Guidelines for the Management of Transfusion-Dependent β-Thalassaemia (TDT) [Internet]. 5th ed. Nicosia, Cyprus: Thalassaemia International Federation; 2025. PMID: 40367250.
10. Kansal AR, et. al. Economic evaluation of betibeglogene autotemcel (Beti-cel) gene addition therapy in transfusion-dependent β-thalassemia. J Mark Access Health Policy. 2021 Jun 7;9(1):1922028. doi: 10.1080/20016689.2021.1922028. PMID: 34178295; PMCID: PMC8205006.
11. Whitney D, et. al. Drug product attributes predict clinical efficacy in betibeglogene autotemcel gene therapy for β-thalassemia. Mol Ther Methods Clin Dev. 2023 Nov 10;31:101155. doi: 10.1016/j.omtm.2023.101155. PMID: 38074412; PMCID: PMC10709156.

Approval And Revision History

March 15, 2023: Reviewed and Approved at Medical Policy Approval Committee (MPAC)

Subsequent endorsement date(s) and changes made:

- Originally approved November 16, 2022 by MPAC committees, effective January 1, 2023
- Administrative update: March 2023 added Medical Benefit Drugs to title and CPCT logo update
- March 15, 2023: Updated criteria 1. Removed “And does not have the β/β genotype of the HBB gene” effective July 1, 2023
- November 16, 2023: Annual review, no changes
- November 2023: Updated overview effective January 1, 2024
- December 1, 2023: reviewed and approved by UM Committee effective January 1, 2024
- May 15, 2024: Reviewed by MPAC, criteria update to align with MassHealth criteria and administrative update: Zynteglo code J3393 added effective July 1, 2024
- June 13, 2024: reviewed and approved by UM Committee effective July 1, 2024
- November 21, 2024: Reviewed by MPAC, criteria updated to align with MassHealth criteria, effective January 1, 2025.
- December 13, 2024: Reviewed and approved by the UM Committee, effective January 1, 2025
- November 19, 2025: Reviewed by MPAC for annual review, renewed without changes, references updated, effective January 1, 2026
- December 8, 2025: Reviewed by UM Committee for annual review, renewed without changes effective January 1, 2026

Background, Product and Disclaimer Information

Medical Necessity Guidelines are developed to determine coverage for benefits and are published to provide a better understanding of the basis upon which coverage decisions are made. We make coverage decisions using these guidelines, along with the Member’s benefit document, and in coordination with the Member’s physician(s) on a case-by-case basis considering the individual Member's health care needs.

Medical Necessity Guidelines are developed for selected therapeutic or diagnostic services found to be safe and proven effective in a limited, defined population of patients or clinical circumstances. They include concise clinical coverage criteria based on current literature review, consultation with practicing physicians in our service area who are medical experts in the particular field, FDA and other government agency policies, and standards adopted by national accreditation organizations. We revise and update Medical Necessity Guidelines annually, or more frequently if new evidence becomes available that suggests needed revisions.

Treating providers are solely responsible for the medical advice and treatment of Members. The use of this guideline is not a guarantee of payment or a final prediction of how specific claim(s) will be adjudicated. Claims payment is subject to eligibility and benefits on the date of service, coordination of benefits, referral/authorization, utilization management guidelines when applicable, and adherence to plan policies, plan procedures, and claims editing logic.