Hematopoietic Cell Transplantation for Plasma Cell Dyscrasias, Including Multiple Myeloma and POEMS Syndrome

Policy # 00060
Original Effective Date: 01/28/2002
Current Effective Date: 06/10/2024

Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc. (collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

Note: Hematopoietic Cell Transplantation for Primary Amyloidosis or Waldenstrom's Macroglobulinemia is addressed separately in medical policy 00138.

Multiple Myeloma

When Services Are Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider a single or second (salvage) autologous hematopoietic cell transplantation (HCT) to treat multiple myeloma (MM) to be **eligible for coverage.****

Based on review of available data, the Company may consider tandem** autologous-autologous hematopoietic cell transplantation (HCT) to treat multiple myeloma (MM) to be **eligible for coverage.****

**Tandem transplantation refers to a planned infusion (transplant) of previously harvested hematopoietic stem cells with a repeat hematopoietic cell infusion (transplant) that is performed within 6 months of the initial transplant. This is distinguished from a repeat transplantation requested or performed more than 6 months after the first transplant, and is used as salvage therapy after failure of initial transplantation or relapsed disease.

Based on review of available data, the Company may consider tandem transplantation with an initial round of autologous hematopoietic cell transplantation (HCT) followed by a non-marrow-ablative conditioning regimen and allogeneic hematopoietic cell transplantation (HCT) (i.e., reduced-intensity conditioning transplant) to treat individuals with newly diagnosed multiple myeloma to be **eligible for coverage.****

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers allogeneic hematopoietic cell transplantation (HCT), myeloablative or nonmyeloablative, as initial therapy of newly diagnosed multiple myeloma (MM) or as salvage therapy to be **investigational.***

POEMS Syndrome

When Services Are Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider autologous hematopoietic cell transplantation (HCT) to treat disseminated POEMS syndrome to be **eligible for coverage.****

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers allogeneic and tandem hematopoietic cell transplantation (HCT) to treat POEMS syndrome to be **investigational.***

Hematopoietic Cell Transplantation for Plasma Cell Dyscrasias, Including Multiple Myeloma and POEMS Syndrome

Policy # 00060
Original Effective Date: 01/28/2002
Current Effective Date: 06/10/2024

Policy Guidelines

The International Working Group on Myeloma has updated the European Group for Blood and Marrow Transplant criteria to describe a complete response to multiple myeloma therapy. The criteria include negative immunofixation on the serum and urine; disappearance of soft tissue plasmacytomas; and 5% or fewer plasma cells in bone marrow aspiration.

Individuals with disseminated POEMS syndrome may have diffuse sclerotic lesions or disseminated bone marrow involvement.

Background/Overview

Multiple Myeloma

Multiple myeloma is a systemic malignancy of plasma cells that represents approximately 18% of all hematologic cancers in the United States. It is treatable but rarely curable. At diagnosis, most individuals have generalized disease, and the selection of treatment is influenced by patient age, general health, prior therapy, and the presence of disease complications.

The disease is staged by estimating tumor mass, based on various clinical parameters such as hemoglobin, serum calcium, number of lytic bone lesions, and the presence or absence of renal failure. Multiple myeloma usually evolves from an asymptomatic premalignant stage (termed *monoclonal gammopathy of undetermined significance*). Treatment is usually reserved for individuals with symptomatic disease (usually progressive myeloma), whereas asymptomatic individuals are observed because there is little evidence that early treatment of asymptomatic MM prolongs survival compared with therapy delivered at the time of symptoms or end-organ damage. In some individuals, an intermediate asymptomatic but more advanced premalignant stage is recognized and referred to as smoldering MM. The overall risk of disease progression from smoldering to symptomatic MM is 10% per year for the first 5 years, approximately 3% per year for the next 5 years, and 1% for the next 10 years.

Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal gammopathy, and Skin abnormalities (POEMS) Syndrome

POEMS syndrome (also known as osteosclerotic myeloma, Crow-Fukase syndrome, or Takatsuki syndrome) is a rare, paraneoplastic disorder secondary to a plasma cell dyscrasia. This

complex, multiorgan disease was first described in 1938, but the acronym POEMS was coined in 1980, reflecting hallmark characteristics of the syndrome: polyneuropathy, organomegaly, endocrinopathy, M protein, and skin changes. No single test establishes the presence of POEMS syndrome. Its pathogenesis is undefined, although some evidence has suggested it is mediated by an imbalance of proinflammatory cytokines including interleukin (IL)-1β, IL-6, and tumor necrosis factor α; vascular endothelial growth factor may also be involved. However, specific criteria have been established, and the syndrome may entail other findings in the constellation of signs and symptoms, as shown in Table 1. Both mandatory major criteria, at least 1 of the other major criteria, and at least 1 of the minor criteria are necessary for diagnosis.

Table 1. Criteria and Associations for POEMS Syndrome

Mandatory Major Criteria	Other Major Criteria	Minor Criteria	Other Symptoms and Signs
Polyneuropathy	Castleman disease	Organomegaly (splenomegaly, hepatomegaly, lymphadenopathy)	Pulmonary hypertension/restrictive lung disease
Monoclonal plasma-proliferative disorder	Sclerotic bone lesions	Extravascular volume overload (edema, pleural effusion, ascites)	Clubbing
	Vascular endothelial growth factor elevation	Endocrinopathy (adrenal, thyroid, pituitary, gonadal, parathyroid, pancreatic)	Thrombotic diatheses
		Skin changes (hyperpigmentation, hypertrichosis, plethora,	Weight loss

Mandatory Major Criteria	Other Major Criteria	Minor Criteria	Other Symptoms and Signs
		hemangiomata, white nails)	
		Papilledema	Low vitamin B_{12} levels
		Thrombocytosis /polycythemia	Diarrhea
			Hyperhidrosis

The prevalence of POEMS syndrome is unclear. A national survey in Japan showed a prevalence of about 0.3 per 100,000. Other large series have been described in the United States, France, China, and India. In general, patients with POEMS have superior overall survival (OS) compared with that of MM (nearly 14 years in a large series). However, given the rarity of POEMS, there is a paucity of randomized controlled trial (RCT) evidence for POEMS therapies. Numerous approaches have been tried, including ionizing radiation, plasmapheresis, intravenous immunoglobulin, interferon-α, corticosteroids, alkylating agents, tamoxifen, trans-retinoic acid, and high-dose chemotherapy with autologous hematopoietic cell transplantation (HCT) support. Optimal treatment involves eliminating the plasma cell clone (eg, by surgical excision or local radiotherapy for an isolated plasmacytoma) or systemic chemotherapy in patients with disseminated disease (eg, medullary disease or multiple plasmacytomas). Given the underlying plasma cell dyscrasia of POEMS syndrome, newer approaches to MM, including bortezomib, lenalidomide, and thalidomide, have also been investigated.

Hematopoietic Cell Transplantation

Hematopoietic cell transplantation is a procedure in which hematopoietic stem cells are intravenously infused to restore bone marrow and immune function in cancer patients who receive bone marrow-toxic doses of cytotoxic drugs with or without whole-body radiotherapy. Hematopoietic stem cells may be obtained from the transplant recipient (autologous HCT) or a donor (allogeneic HCT [allo-HCT]). They can be harvested from bone marrow, peripheral blood, or umbilical cord blood shortly after delivery of neonates.

Immunologic compatibility between infused hematopoietic stem cells and the recipient is not an issue in autologous HCT. In allo-HCT, immunologic compatibility between donor and patient is a critical factor for achieving a successful outcome. Compatibility is established by typing of human leukocyte antigens (HLA) using cellular, serologic, or molecular techniques. HLA refers to the gene complex expressed at the HLA-A, -B, and -DR (antigen-D related) loci on each arm of chromosome 6. An acceptable donor will match the patient at all or most of the HLA loci.

Conditioning for Hematopoietic Cell Transplantation
Conventional Conditioning
The conventional ("classical") practice of allo-HCT involves administration of cytotoxic agents (e.g., cyclophosphamide, busulfan) with or without total body irradiation at doses sufficient to cause bone marrow ablation in the recipient. The beneficial treatment effect of this procedure is due to a combination of the initial eradication of malignant cells and subsequent graft-versus-malignancy effect mediated by non-self-immunologic effector cells. While the slower graft-versus-malignancy effect is considered the potentially curative component, it may be overwhelmed by existing disease in the absence of pretransplant conditioning. Intense conditioning regimens are limited to patients who are sufficiently medically fit to tolerate substantial adverse effects. These include opportunistic infections secondary to loss of endogenous bone marrow function and organ damage or failure caused by cytotoxic drugs. Subsequent to graft infusion in allo-HCT, immunosuppressant drugs are required to minimize graft rejection and graft-versus-host disease, which increases susceptibility to opportunistic infections.

The success of autologous HCT is predicated on the potential of cytotoxic chemotherapy, with or without radiotherapy, to eradicate cancerous cells from the blood and bone marrow. This permits subsequent engraftment and repopulation of the bone marrow with presumably normal hematopoietic stem cells obtained from the patient before undergoing bone marrow ablation. Therefore, autologous HCT is typically performed as consolidation therapy when the patient's disease is in complete remission. Patients who undergo autologous HCT are also susceptible to chemotherapy-related toxicities and opportunistic infections before engraftment, but not graft-versus-host disease.

Reduced-Intensity Conditioning Allogeneic Hematopoietic Cell Transplantation

Reduced-intensity conditioning (RIC) refers to the pretransplant use of lower doses of cytotoxic drugs or less intense regimens of radiotherapy than are used in traditional full-dose myeloablative conditioning treatments. Although the definition of RIC is variable, with numerous versions employed, all regimens seek to balance the competing effects of relapse due to residual disease and non-relapse mortality. The goal of RIC is to reduce disease burden and to minimize associated treatment-related morbidity and non-relapse mortality in the period during which the beneficial graft-versus-malignancy effect of allogeneic transplantation develops. Reduced-intensity conditioning regimens range from nearly total myeloablative to minimally myeloablative with lymphoablation, with intensity tailored to specific diseases and patient condition. Patients who undergo RIC with allo-HCT initially demonstrate donor cell engraftment and bone marrow mixed chimerism. Most will subsequently convert to full-donor chimerism. In this review, the term RIC will refer to all conditioning regimens intended to be nonmyeloablative.

Multiple Myeloma Treatment Overview

In the prechemotherapy era, the median survival for a patient diagnosed with MM was approximately 7 months. After the introduction of chemotherapy (eg, the alkylating agent melphalan in the 1960s), prognosis improved, with a median survival of 24 to 30 months and 10-year survival of 3%. In a large group of patients with newly diagnosed MM, there was no difference in OS reported during a 24-year period from 1971 to 1994, with a trend toward improvement from 1995 to 2000, and a statistically significant benefit in OS from 2001 to 2006. These data suggested that autologous HCT was responsible for the trends from 1994 to 2000, while novel agents have contributed to the improvement since 2001.

The introduction of novel agents and better prognostic indicators has been the major advances in the treatment of this disease. Novel agents such as the proteasome inhibitors (eg, bortezomib), the monoclonal antibody daratumumab, and the immunomodulatory derivatives thalidomide and lenalidomide first showed efficacy in relapsed and refractory myeloma and now have been integrated into first-line regimens. With the introduction of these novel treatments, it is now expected that most patients with MM will respond to initial therapy, and only a small minority will have refractory disease.

FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)

The U.S. FDA regulates human cells and tissues intended for implantation, transplantation, or infusion through the Center for Biologics Evaluation and Research, under Code of Federal Regulation, Title 21, parts 1270 and 1271. Hematopoietic stem cells are included in these regulations.

Rationale/Source

This medical policy was developed through consideration of peer-reviewed medical literature generally recognized by the relevant medical community, U.S. FDA approval status, nationally accepted standards of medical practice and accepted standards of medical practice in this community, technology evaluation centers, reference to federal regulations, other plan medical policies, and accredited national guidelines.

Multiple myeloma is a systemic malignancy of plasma cells that represents approximately 10% of all hematologic cancers. POEMS syndrome, characterized by polyneuropathy, organomegaly, endocrinopathy, M protein, and skin changes, is a rare, paraneoplastic disorder secondary to a plasma cell dyscrasia. Plasma cell dyscrasias are treatable but rarely curable. In some cases, autologous or allogeneic HCT is considered as therapy.

Summary of Evidence

Newly Diagnosed Multiple Myeloma

For individuals who have newly diagnosed multiple myeloma (MM) who receive autologous hematopoietic cell transplantation (HCT) as initial treatment, the evidence includes reviews, a retrospective study, and several prospective randomized controlled trials (RCTs) that compare high-dose chemotherapy plus autologous HCT to standard chemotherapy regimens or regimens containing newer MM agents. Relevant outcomes are overall survival (OS) and treatment-related morbidity. In general, the evidence has suggested OS rates are improved with autologous HCT compared with conventional chemotherapy in this setting. Limitations of the published evidence include patient heterogeneity, variability in treatment protocols, short follow-up periods, inconsistency in reporting important health outcomes, and inconsistency in reporting or collecting

outcomes. Recent RCTs comparing high-dose chemotherapy plus autologous HCT to regimens that include novel MM agents have also shown that high-dose chemotherapy plus autologous HCT improves progression-free survival (PFS). The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have newly diagnosed MM who receive tandem autologous HCT, the evidence includes several RCTs. Relevant outcomes are OS and treatment-related morbidity. Compared with single autologous HCT, RCTs have generally found that tandem autologous HCT improves OS and recurrence-free survival in newly diagnosed MM. Two recent RCTs found conflicting results on the benefit of tandem autologous HCT versus single autologous HCT; however, the study that found no additional benefit with tandem autologous HCT had a higher rate of nonadherence to the second planned HCT. Differences in initial therapy regimens between trials may also have led to conflicting results. Several RCTs and one restrospective study compared reduced-intensity conditioning (RIC) allogeneic HCT (allo-HCT) following a first autologous HCT with single or tandem autologous transplants. The RCTs were based on genetic randomization (ie, patients with a human leukocyte antigen-identical sibling were offered RIC allo-HCT following autologous HCT, whereas other patients underwent either 1 or 2 autologous transplants). Although the body of evidence has shown inconsistencies regarding OS and disease-free survival rates, some studies have shown a survival benefit with tandem autologous HCT followed by RIC allo-HCT, although at the cost of higher transplant-related mortality compared with conventional treatments. Factors across studies that may account for differing trial results include different study designs, nonuniform preparative regimens, different patient characteristics (including risk stratification), and criteria for advancing to a second transplant. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have newly diagnosed MM who receive allo-HCT as initial or salvage treatment, the evidence includes nonrandomized studies. Relevant outcomes are OS and treatment-related morbidity. Studies have reported on patients with both myeloablative conditioning and RIC. Limitations of the published evidence include patient sample heterogeneity, variability in treatment protocols, short follow-up periods, inconsistency in reporting important health outcomes, and inconsistency in reporting or collecting outcomes. Nonmyeloablative allo-HCT as first-line therapy is associated with lower transplant-related mortality but a greater risk of relapse; convincing

evidence is lacking that allo-HCT improves survival better than autologous HCT. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Relapsed or Refractory Multiple Myeloma
For individuals who have relapsed MM after failing an autologous HCT who receive autologous HCT, the evidence includes RCTs, retrospective studies, and reviews summarizing recent studies on a second autologous HCT in relapsed myeloma. Relevant outcomes are OS and treatment-related morbidity. Despite some limitations of the published evidence, including patient sample heterogeneity, variability in treatment protocols, and short follow-up periods, the available trial evidence has suggested OS rates are improved with autologous HCT compared with conventional chemotherapy or continuous lenalidomide plus dexamethasone in this setting. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have refractory multiple myeloma after failing a first HCT who receive tandem autologous HCT, the evidence includes systematic reviews and a retrospective study. Relevant outcomes are OS and treatment-related morbidity. The evidence has shown tandem autologous HCT improves OS rates in this setting. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal gammopathy, and Skin abnormalities (POEMS) Syndrome
For individuals who have POEMS syndrome who receive HCT, the evidence includes retrospective cohort studies, case reports, and case series. Relevant outcomes are OS and treatment-related morbidity. No RCTs of HCT of any type have been performed in patients with POEMS syndrome of any severity, nor is it likely such studies will be performed because of the rarity of this condition. Available case reports and series are subject to selection bias and are heterogeneous concerning treatment approaches and peritransplant support. However, for patients with disseminated POEMS syndrome, a chain of evidence and contextual factors related to the disease and MM would suggest improvement in health outcomes with autologous HCT. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

Supplemental Information

Clinical Input From Physician Specialty Societies and Academic Medical Centers

While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

2017 Input

In response to requests, input was received from 1 specialty medical society, 1 academic medical center, and 2 Blue Distinction Centers for Transplant while this policy was under review in 2017. There was a consensus that allogeneic HCT is investigational for newly diagnosed MM and as salvage therapy after primary graft failure and for the primary progressive disease.

2013 Input

In response to requests, input was received from 3 academic medical centers and 6 Blue Distinction Centers for Transplant while this policy was under review in 2013. There was near-consensus that autologous HCT is medically necessary for POEMS syndrome and near-consensus that allogeneic and tandem HCT are investigational for POEMS syndrome.

Practice Guidelines and Position Statements

Guidelines or position statements will be considered for inclusion in ‘Supplemental Information' if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

American Society of Clinical Oncology

In 2019, the American Society of Clinical Oncology (ASCO) published practice guidelines for the treatment of MM. The guidelines recommend offering up-front transplant to all eligible patients, although delayed HCT may be considered in select patients. Salvage or delayed HCT may be used as consolidation at first relapse in patients who choose not to proceed with HCT initially. Tandem autologous HCT and allogeneic HCT (allo-HCT) should not be routinely recommended. However,

up-front tandem autologous HCT can be considered for select high-risk patients or those with a suboptimal response to the initial transplant; allo-HCT may be considered in select high-risk patients in the context of a clinical trial. For relapsed MM, autologous HCT, if not received after primary induction therapy, should be offered to transplant-eligible patients. Repeat HCT may be considered in relapsed MM if progression-free survival after the first transplant was 18 months or greater.

American Society for Transplantation and Cellular Therapy
In 2015, the American Society for Blood and Marrow Transplantation (ASBMT; now referred to as the American Society for Transplantation and Cellular Therapy [ASTCT]) published evidence-based guidelines on the use of HCT in patients with MM. The ASBMT recognized that much of the evidence from randomized controlled trials (RCTs) summarized in the 2015 guidelines came from trials that predated the novel triple-therapy induction regimens. Furthermore, advances in supportive care and earlier disease detection have increasingly influenced decision making and allow individual tailoring of therapy. The ASBMT guidelines did not address POEMS or other plasma cell dyscrasias besides MM.

The ASTCT updated guidance for transplantation and cellular therapies in MM in 2022. The panel endorsed continued use of autologous HCT for patients with newly diagnosed MM as a standard-of-care option, and did not recommend front-line use of allo-HCT and CAR-T outside the setting of a clinical trial. For patients not undergoing autologous HCT upfront, the panel recommended its use in first relapse. The panel also encouraged allo-HCT in relapsed/refractory MM setting only in the context of clinical trial.

The ASBMT and 3 other groups (2015) published joint guidelines based on an expert consensus conference. These guidelines contained the following recommendations for HCT as salvage therapy:

"...autologous HCT: (1) In transplantation-eligible patients relapsing after primary therapy that did NOT include an autologous HCT, high-dose therapy with HCT as part of salvage therapy should be considered standard; (2) High-dose therapy and autologous HCT should be considered appropriate therapy for any patients relapsing after primary therapy that includes an autologous HCT with initial remission duration of more than 18 months; (3) High-dose therapy and autologous HCT can be used as bridging strategy to allogeneic HCT; (4) The role of post salvage HCT maintenance needs to be explored in the context of well-designed prospective trials that should include new agents, such as

monoclonal antibodies, -modulating agents, and oral proteasome inhibitors; (5) Autologous HCT consolidation should be explored as a strategy to develop novel conditioning regimens or post-HCT strategies in patients with short remission (less than 18 months remissions) after primary therapy; and (6) Prospective randomized trials need to be performed to define the role of salvage autologous HCT in patients with MM [multiple myeloma] relapsing after primary therapy comparing to 'best non-HCT' therapy.

Regarding allogeneic HCT... (1) Allogeneic HCT should be considered appropriate therapy for any eligible patient with early relapse (less than 24 months) after primary therapy that included an autologous HCT and/or with high-risk features (ie, cytogenetics, extramedullary disease, plasma cell leukemia, or high lactate dehydrogenase); (2) Allogeneic HCT should be performed in the context of a clinical trial if possible; (3) The role of post allogeneic HCT maintenance therapy needs to be explored in the context of well-designed prospective trials; and (4) Prospective randomized trials need to be performed to define the role of salvage allogeneic HCT in patients with MM relapsing after primary therapy."

In 2020, the ASTCT published a guideline on indications for HCT and immune effector cell therapy. Regarding plasma cell dyscrasias, the guideline states that MM remains the most common indication for autologous HCT. For rarer plasma cell dyscrasias like POEMS syndrome, autologous HCT may be considered a clinical option on the basis of single-center and registry data. Detailed recommendations in adults can be found in Table 2.

Table 2. Summary of Recommendations for Hematopoietic Cell Transplantation in Plasma Cell Disorders Including Multiple Myeloma and POEMS Syndrome

Indication	Allogeneic HCT	Autologous HCT
Myeloma, initial response	D	S
Myeloma, sensitive relapse	S	S
Myeloma, refractory	C	C
POEMS syndrome	N	C

Indication	Allogeneic HCT	Autologous HCT
Relapse after autologous transplant	C	C

C: standard of care, clinical evidence available; D: developmental; HCT: hematopoietic cell transplantation; N: not generally recommended; S: standard of care

International Myeloma Working Group

The 2010 conclusions and recommendations of the International Myeloma Working Group consensus statement on the current status of allo-HCT for MM are as follows: myeloablative allo-HCT may cure a minority of patients but is associated with high transplant-related mortality, but could be evaluated in well-designed prospective clinical trials. Nonmyeloablative allo-HCT as first-line therapy is associated with lower transplant-related mortality but a greater risk of relapse and convincing evidence is lacking that allo-HCT improves survival compared with autologous HCT.

National Comprehensive Cancer Network

Autologous Hematopoietic Cell Transplantation

The National Comprehensive Cancer Network (NCCN) guideline for multiple myeloma (v.2.2024) states that autologous HCT is the preferred option after induction therapy in transplant-eligible patients, but a delayed HCT after early stem cell collection and storage is appropriate as well (category 1 recommendation). A repeat HCT can be considered for refractory/progressive disease after primary treatment in patients with prolonged response to initial HCT.

Tandem Hematopoietic Cell Transplantation

The NCCN guideline for multiple myeloma (v.2.2024) recommends collecting enough stem cells for 2 transplants in younger patients if tandem transplant or salvage transplant would be considered. A tandem transplant with or without maintenance therapy can be considered for all patients who are candidates for HCT and is an option for patients who do not achieve at least a very good partial response after the first autologous HCT and those with high-risk features.

Allogeneic Hematopoietic Cell Transplantation
The NCCN guideline for multiple myeloma (v.2.2024) states the following for allo-HCT: "Allogeneic HCT includes either myeloablative or nonmyeloablative (ie, "mini" transplant) transplants. Allogeneic HCT has been investigated as an alternative to autologous HCT to avoid the contamination of reinfused autologous tumor cells, but also to take advantage of the beneficial graft-versus-tumor effect associated with allogeneic transplants. However, lack of a suitable donor and increased morbidity has limited this approach, particularly for the typical older MM population".

Polyneuropathy, Organomegaly, Endocrinopathy, Monoclonal gammopathy, and Skin abnormalities (POEMS) Syndrome
The NCCN guideline for multiple myeloma (v.2.2024) recommends autologous HCT in patients with POEMS syndrome who are eligible as sole therapy or as consolidation therapy after induction therapy.

U.S. Preventive Services Task Force Recommendations
Not applicable.

Medicare National Coverage
Medicare has the following national coverage determination for the use of HCT for MM. “Effective … January … 2016, allogeneic HSCT [hematopoietic stem cell transplantation] for multiple myeloma is covered by Medicare only for beneficiaries with Durie-Salmon Stage II or III multiple myeloma, or International Staging System (ISS) Stage II or Stage III multiple myeloma, and participating in an approved prospective clinical study that meets the criteria below. There must be appropriate statistical techniques to control for selection bias and confounding by age, duration of diagnosis, disease classification, International Myeloma Working Group (IMWG) classification, ISS stage, comorbid conditions, type of preparative/conditioning regimen, graft vs. host disease (GVHD) prophylaxis, donor type and cell source.

A prospective clinical study seeking Medicare coverage for allogeneic HSCT for multiple myeloma pursuant to CED must address the following question:

Compared to patients who do not receive allogeneic HSCT, do Medicare beneficiaries with multiple myeloma who receive allogeneic HSCT have improved outcomes as indicated by:

- GVHD (acute and chronic);
- Other transplant-related adverse events;
- Overall survival; and
- (optional) Quality of life?"

Ongoing and Unpublished Clinical Trials
Some currently unpublished trials that might influence this review are listed in Table 3.

Table 3. Summary of Key Trials

NCT No.	Trial Name	Planned Enrollment	Completion Date
Ongoing			
NCT01208662[a]	A Randomized Phase III Study Comparing Conventional Dose Treatment Using a Combination of Lenalidomide, Bortezomib, and Dexamethasone (RVD) to High-dose Treatment With Peripheral Stem Cell Transplant in the Initial Management of Myeloma in Patients up to 65 Years of Age	660	Sep 2025
NCT05675319	Allogeneic Stem Cell Transplantation vs. Conventional Therapy as Salvage Therapy for Relapsed / Progressive Patients With Multiple Myeloma After First-line Therapy	482	Mar 2033
Unpublished			
NCT02322320	Continued, Long-Term Follow-Up and Lenalidomide Maintenance Therapy for Patients on BMT CTN 0702 (BMT CTN #Q07LT)	273 (actual enrollment)	Jun 2019 (Completed)

NCT: national clinical trial.
[a] Denotes industry-sponsored or cosponsored trial.

References

1. Kyle RA, Rajkumar SV. Multiple myeloma. Blood. Mar 15 2008; 111(6): 2962-72. PMID 18332230
2. Palumbo A, Rajkumar SV. Treatment of newly diagnosed myeloma. Leukemia. Mar 2009; 23(3): 449-56. PMID 19005483
3. Durie BG, Harousseau JL, Miguel JS, et al. International uniform response criteria for multiple myeloma. Leukemia. Sep 2006; 20(9): 1467-73. PMID 16855634
4. National Comprehensive Cancer Network (NCCN). NCCN Clinical Practice Guidelines in Oncology: Multiple Myeloma. Version 2.2024. https://www.nccn.org/professionals/physician_gls/pdf/myeloma.pdf.
5. Dispenzieri A. Long-term outcomes after autologous stem cell transplantation in patients with POEMS syndrome. Clin Adv Hematol Oncol. Nov 2012; 10(11): 744-6. PMID 23271262
6. Dispenzieri A. POEMS syndrome: update on diagnosis, risk-stratification, and management. Am J Hematol. Aug 2012; 87(8): 804-14. PMID 22806697
7. Bardwick PA, Zvaifler NJ, Gill GN, et al. Plasma cell dyscrasia with polyneuropathy, organomegaly, endocrinopathy, M protein, and skin changes: the POEMS syndrome. Report on two cases and a review of the literature. Medicine (Baltimore). Jul 1980; 59(4): 311-22. PMID 6248720
8. Dispenzieri A, Kyle RA, Lacy MQ, et al. POEMS syndrome: definitions and long-term outcome. Blood. Apr 01 2003; 101(7): 2496-506. PMID 12456500
9. Dispenzieri A. POEMS Syndrome: 2019 Update on diagnosis, risk-stratification, and management. Am J Hematol. Jul 2019; 94(7): 812-827. PMID 31012139
10. Nasu S, Misawa S, Sekiguchi Y, et al. Different neurological and physiological profiles in POEMS syndrome and chronic inflammatory demyelinating polyneuropathy. J Neurol Neurosurg Psychiatry. May 2012; 83(5): 476-9. PMID 22338030
11. Reece DE. Recent trends in the management of newly diagnosed multiple myeloma. Curr Opin Hematol. Jul 2009; 16(4): 306-12. PMID 19491669
12. Qiao SK, Guo XN, Ren JH, et al. Efficacy and Safety of Lenalidomide in the Treatment of Multiple Myeloma: A Systematic Review and Meta-analysis of Randomized Controlled Trials. Chin Med J (Engl). May 05 2015; 128(9): 1215-22. PMID 25947406
13. Rajkumar SV, Kumar S. Multiple myeloma current treatment algorithms. Blood Cancer J. Sep 28 2020; 10(9): 94. PMID 32989217

14. Fonseca R. Strategies for risk-adapted therapy in myeloma. Hematology Am Soc Hematol Educ Program. 2007: 304-10. PMID 18024644
15. Rajkumar SV. Multiple myeloma: 2020 update on diagnosis, risk-stratification and management. Am J Hematol. May 2020; 95(5): 548-567. PMID 32212178
16. Mian H, Mian OS, Rochwerg B, et al. Autologous stem cell transplant in older patients (age ≥ 65) with newly diagnosed multiple myeloma: A systematic review and meta-analysis. J Geriatr Oncol. Jan 2020; 11(1): 93-99. PMID 31153809
17. Koreth J, Cutler CS, Djulbegovic B, et al. High-dose therapy with single autologous transplantation versus chemotherapy for newly diagnosed multiple myeloma: A systematic review and meta-analysis of randomized controlled trials. Biol Blood Marrow Transplant. Feb 2007; 13(2): 183-96. PMID 17241924
18. Richardson PG, Jacobus SJ, Weller EA, et al. Triplet Therapy, Transplantation, and Maintenance until Progression in Myeloma. N Engl J Med. Jul 14 2022; 387(2): 132-147. PMID 35660812
19. Cavo M, Gay F, Beksac M, et al. Autologous haematopoietic stem-cell transplantation versus bortezomib-melphalan-prednisone, with or without bortezomib-lenalidomide-dexamethasone consolidation therapy, and lenalidomide maintenance for newly diagnosed multiple myeloma (EMN02/HO95): a multicentre, randomized, open-label, phase 3 study. Lancet Haematol. Jun 2020; 7(6): e456-e468. PMID 32359506
20. Attal M, Lauwers-Cances V, Hulin C, et al. Lenalidomide, Bortezomib, and Dexamethasone with Transplantation for Myeloma. N Engl J Med. Apr 06 2017; 376(14): 1311-1320. PMID 28379796
21. Gay F, Oliva S, Petrucci MT, et al. Chemotherapy plus lenalidomide versus autologous transplantation, followed by lenalidomide plus prednisone versus lenalidomide maintenance, in patients with multiple myeloma: a randomized, multicentre, phase 3 trial. Lancet Oncol. Dec 2015; 16(16): 1617-29. PMID 26596670
22. Attal M, Harousseau JL. The role of high-dose therapy with autologous stem cell support in the era of novel agents. Semin Hematol. Apr 2009; 46(2): 127-32. PMID 19389496
23. Attal M, Harousseau JL, Stoppa AM, et al. A prospective, randomized trial of autologous bone marrow transplantation and chemotherapy in multiple myeloma. Intergroupe Français du Myélome. N Engl J Med. Jul 11 1996; 335(2): 91-7. PMID 8649495
24. Barlogie B, Kyle RA, Anderson KC, et al. Standard chemotherapy compared with high-dose chemoradiotherapy for multiple myeloma: final results of phase III US Intergroup Trial S9321. J Clin Oncol. Feb 20 2006; 24(6): 929-36. PMID 16432076

25. Bladé J, Rosiñol L, Sureda A, et al. High-dose therapy intensification compared with continued standard chemotherapy in multiple myeloma patients responding to the initial chemotherapy: long-term results from a prospective randomized trial from the Spanish cooperative group PETHEMA. Blood. Dec 01 2005; 106(12): 3755-9. PMID 16105975
26. Child JA, Morgan GJ, Davies FE, et al. High-dose chemotherapy with hematopoietic stem-cell rescue for multiple myeloma. N Engl J Med. May 08 2003; 348(19): 1875-83. PMID 12736280
27. Fermand JP, Ravaud P, Chevret S, et al. High-dose therapy and autologous peripheral blood stem cell transplantation in multiple myeloma: up-front or rescue treatment? Results of a multicenter sequential randomized clinical trial. Blood. Nov 01 1998; 92(9): 3131-6. PMID 9787148
28. Palumbo A, Bringhen S, Petrucci MT, et al. Intermediate-dose melphalan improves survival of myeloma patients aged 50 to 70: results of a randomized controlled trial. Blood. Nov 15 2004; 104(10): 3052-7. PMID 15265788
29. Marini C, Maia T, Bergantim R, et al. Real-life data on safety and efficacy of autologous stem cell transplantation in elderly patients with multiple myeloma. Ann Hematol. Feb 2019; 98(2): 369-379. PMID 30368589
30. Attal M, Harousseau JL, Facon T, et al. Single versus double autologous stem-cell transplantation for multiple myeloma. N Engl J Med. Dec 25 2003; 349(26): 2495-502. PMID 14695409
31. Stadtmauer EA. Multiple myeloma, 2004--one or two transplants?. N Engl J Med. Dec 25 2003; 349(26): 2551-3. PMID 14695416
32. Cavo M, Tosi P, Zamagni E, et al. Prospective, randomized study of single compared with double autologous stem-cell transplantation for multiple myeloma: Bologna 96 clinical study. J Clin Oncol. Jun 10 2007; 25(17): 2434-41. PMID 17485707
33. Stadtmauer EA, Pasquini MC, Blackwell B, et al. Autologous Transplantation, Consolidation, and Maintenance Therapy in Multiple Myeloma: Results of the BMT CTN 0702 Trial. J Clin Oncol. Mar 01 2019; 37(7): 589-597. PMID 30653422
34. Continued, Long-Term Follow-Up and Lenalidomide Maintenance Therapy for Patients on BMT CTN 0702 Protocol (BMT CTN 07LT). Clinicaltrials.gov. Updated May 11, 2020. https://clinicaltrials.gov/ct2/show/NCT02322320.
35. Villalba A, Gonzalez-Rodriguez AP, Arzuaga-Mendez J, et al. Single versus tandem autologous stem-cell transplantation in patients with newly diagnosed multiple myeloma and high-risk cytogenetics. A retrospective, open-label study of the PETHEMA/Spanish Myeloma Group (GEM). Leuk Lymphoma. Dec 2022; 63(14): 3438-3447. PMID 36124538

36. Garban F, Attal M, Michallet M, et al. Prospective comparison of autologous stem cell transplantation followed by dose-reduced allograft (IFM99-03 trial) with tandem autologous stem cell transplantation (IFM99-04 trial) in high-risk de novo multiple myeloma. Blood. May 01 2006; 107(9): 3474-80. PMID 16397129
37. Moreau P, Garban F, Attal M, et al. Long-term follow-up results of IFM99-03 and IFM99-04 trials comparing nonmyeloablative allotransplantation with autologous transplantation in high-risk de novo multiple myeloma. Blood. Nov 01 2008; 112(9): 3914-5. PMID 18948589
38. Bruno B, Rotta M, Patriarca F, et al. A comparison of allografting with autografting for newly diagnosed myeloma. N Engl J Med. Mar 15 2007; 356(11): 1110-20. PMID 17360989
39. Rosiñol L, Pérez-Simón JA, Sureda A, et al. A prospective PETHEMA study of tandem autologous transplantation versus autograft followed by reduced-intensity conditioning allogeneic transplantation in newly diagnosed multiple myeloma. Blood. Nov 01 2008; 112(9): 3591-3. PMID 18612103
40. Bjorkstrand B, Iacobelli S, Hegenbart U, et al. Autologous stem cell transplantation (ASCT) versus ASCT followed by reduced-intensity conditioning allogeneic SCT with identical sibling donor in previously untreated multiple myeloma: preliminary analysis of a prospective controlled trial by the EBMT [abstract]. Bone Marrow Transplant. 2008;41:S38.
41. Gahrton G, Iacobelli S, Björkstrand B, et al. Autologous/reduced-intensity allogeneic stem cell transplantation vs autologous transplantation in multiple myeloma: long-term results of the EBMT-NMAM2000 study. Blood. Jun 20 2013; 121(25): 5055-63. PMID 23482933
42. Krishnan A, Pasquini MC, Logan B, et al. Autologous haemopoietic stem-cell transplantation followed by allogeneic or autologous haemopoietic stem-cell transplantation in patients with multiple myeloma (BMT CTN 0102): a phase 3 biological assignment trial. Lancet Oncol. Dec 2011; 12(13): 1195-203. PMID 21962393
43. Maffini E, Storer BE, Sandmaier BM, et al. Long-term follow up of tandem autologous-allogeneic hematopoietic cell transplantation for multiple myeloma. Haematologica. Feb 2019; 104(2): 380-391. PMID 30262560
44. Giralt S, Koehne G. Allogeneic hematopoietic stem cell transplantation for multiple myeloma: what place, if any?. Curr Hematol Malig Rep. Dec 2013; 8(4): 284-90. PMID 24146203
45. Giralt S, Costa L, Schriber J, et al. Optimizing autologous stem cell mobilization strategies to improve patient outcomes: consensus guidelines and recommendations. Biol Blood Marrow Transplant. Mar 2014; 20(3): 295-308. PMID 24141007

46. Harousseau JL. The allogeneic dilemma. Bone Marrow Transplant. Dec 2007; 40(12): 1123-8. PMID 17680016
47. Crawley C, Iacobelli S, Björkstrand B, et al. Reduced-intensity conditioning for myeloma: lower nonrelapse mortality but higher relapse rates compared with myeloablative conditioning. Blood. Apr 15 2007; 109(8): 3588-94. PMID 17158231
48. Gahrton G, Björkstrand B. Allogeneic transplantation in multiple myeloma. Haematologica. Sep 2008; 93(9): 1295-300. PMID 18757850
49. Ziogas DC, Terpos E, Dimopoulos MA. When to recommend a second autograft in patients with relapsed myeloma?. Leuk Lymphoma. Apr 2017; 58(4): 781-787. PMID 27894207
50. Garderet L, Cook G, Auner HW, et al. Treatment options for relapse after autograft in multiple myeloma - report from an EBMT educational meeting. Leuk Lymphoma. Apr 2017; 58(4): 797-808. PMID 27650125
51. Goldschmidt H, Baertsch MA, Schlenzka J, et al. Salvage autologous transplant and lenalidomide maintenance vs. lenalidomide/dexamethasone for relapsed multiple myeloma: the randomized GMMG phase III trial Relapse. Leukemia. Apr 2021; 35(4): 1134-1144. PMID 32694619
52. Cook G, Williams C, Brown JM, et al. High-dose chemotherapy plus autologous stem-cell transplantation as consolidation therapy in patients with relapsed multiple myeloma after previous autologous stem-cell transplantation (NCRI Myeloma X Relapse [Intensive trial]): a randomized, open-label, phase 3 trial. Lancet Oncol. Jul 2014; 15(8): 874-85. PMID 24948586
53. Cook G, Ashcroft AJ, Cairns DA, et al. The effect of salvage autologous stem-cell transplantation on overall survival in patients with relapsed multiple myeloma (final results from BSBMT/UKMF Myeloma X Relapse [Intensive]): a randomized, open-label, phase 3 trial. Lancet Haematol. Jul 2016; 3(7): e340-51. PMID 27374467
54. Ikeda T, Mori K, Kawamura K, et al. Comparison between autologous and allogeneic stem cell transplantation as salvage therapy for multiple myeloma relapsing/progressing after autologous stem cell transplantation. Hematol Oncol. Dec 2019; 37(5): 586-594. PMID 31674032
55. Michaelis LC, Saad A, Zhong X, et al. Salvage second hematopoietic cell transplantation in myeloma. Biol Blood Marrow Transplant. May 2013; 19(5): 760-6. PMID 23298856
56. Qazilbash MH, Saliba R, De Lima M, et al. Second autologous or allogeneic transplantation after the failure of first autograft in patients with multiple myeloma. Cancer. Mar 01 2006; 106(5): 1084-9. PMID 16456814

57. Hahn T, Wingard JR, Anderson KC, et al. The role of cytotoxic therapy with hematopoietic stem cell transplantation in the therapy of multiple myeloma: an evidence-based review. Biol Blood Marrow Transplant. Jan 2003; 9(1): 4-37. PMID 12533739
58. McCarthy PL, Holstein SA. Role of stem cell transplant and maintenance therapy in plasma cell disorders. Hematology Am Soc Hematol Educ Program. Dec 02 2016; 2016(1): 504-511. PMID 27913522
59. Olin RL, Vogl DT, Porter DL, et al. Second auto-SCT is safe and effective salvage therapy for relapsed multiple myeloma. Bone Marrow Transplant. Mar 2009; 43(5): 417-22. PMID 18850013
60. Kuwabara S, Dispenzieri A, Arimura K, et al. Treatment for POEMS (polyneuropathy, organomegaly, endocrinopathy, M-protein, and skin changes) syndrome. Cochrane Database Syst Rev. Jun 13 2012; 2012(6): CD006828. PMID 22696361
61. Autore F, Innocenti I, Luigetti M, et al. Autologous peripheral blood stem cell transplantation and the role of lenalidomide in patients affected by poems syndrome. Hematol Oncol. Apr 2018; 36(2): 392-398. PMID 28913957
62. Cook G, Iacobelli S, van Biezen A, et al. High-dose therapy and autologous stem cell transplantation in patients with POEMS syndrome: a retrospective study of the Plasma Cell Disorder sub-committee of the Chronic Malignancy Working Party of the European Society for Blood Marrow Transplantation. Haematologica. Jan 2017; 102(1): 160-167. PMID 27634201
63. D'Souza A, Lacy M, Gertz M, et al. Long-term outcomes after autologous stem cell transplantation for patients with POEMS syndrome (osteosclerotic myeloma): a single-center experience. Blood. Jul 05 2012; 120(1): 56-62. PMID 22611150
64. Jang IY, Yoon DH, Kim S, et al. Advanced POEMS syndrome treated with high-dose melphalan followed by autologous blood stem cell transplantation: a single-center experience. Blood Res. Mar 2014; 49(1): 42-8. PMID 24724066
65. Mikhael J, Ismaila N, Cheung MC, et al. Treatment of Multiple Myeloma: ASCO and CCO Joint Clinical Practice Guideline. J Clin Oncol. May 10 2019; 37(14): 1228-1263. PMID 30932732
66. Shah N, Callander N, Ganguly S, et al. Hematopoietic Stem Cell Transplantation for Multiple Myeloma: Guidelines from the American Society for Blood and Marrow Transplantation. Biol Blood Marrow Transplant. Jul 2015; 21(7): 1155-66. PMID 25769794
67. Dhakal B, Shah N, Kansagra A, et al. ASTCT Clinical Practice Recommendations for Transplantation and Cellular Therapies in Multiple Myeloma. Transplant Cell Ther. Jun 2022; 28(6): 284-293. PMID 35306217

68. Giralt S, Garderet L, Durie B, et al. American Society of Blood and Marrow Transplantation, European Society of Blood and Marrow Transplantation, Blood and Marrow Transplant Clinical Trials Network, and International Myeloma Working Group Consensus Conference on Salvage Hematopoietic Cell Transplantation in Patients with Relapsed Multiple Myeloma. Biol Blood Marrow Transplant. Dec 2015; 21(12): 2039-2051. PMID 26428082
69. Kanate AS, Majhail NS, Savani BN, et al. Indications for Hematopoietic Cell Transplantation and Immune Effector Cell Therapy: Guidelines from the American Society for Transplantation and Cellular Therapy. Biol Blood Marrow Transplant. Jul 2020; 26(7): 1247-1256. PMID 32165328
70. Lokhorst H, Einsele H, Vesole D, et al. International Myeloma Working Group consensus statement regarding the current status of allogeneic stem-cell transplantation for multiple myeloma. J Clin Oncol. Oct 10 2010; 28(29): 4521-30. PMID 20697091
71. Centers for Medicare & Medicaid Services. National Coverage Determination (NCD) for Stem Cell Transplantation (Formerly 110.8.1) (110.23). 2016; https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?NCDId=366&ncdver=1&bc=AAAAIAAAAAAA&

Policy History

Original Effective Date: 01/28/2002
Current Effective Date: 06/10/2024

12/06/2001	Medical Policy Committee review
01/28/2002	Managed Care Advisory Council approval
12/06/2006	Medical Director review
12/20/2006	Medical Policy Committee approval. Coverage eligibility unchanged.
09/05/2007	Medical Director review
09/19/2007	Medical Policy Committee approval. Policy statement language regarding tandem transplants in newly diagnosed or responsive multiple myeloma clarified.
09/09/2008	Medical Director review
09/17/2008	Medical Policy Committee approval. No change to coverage eligibility.
09/03/2009	Medical Policy Committee approval
09/16/2009	Medical Policy Implementation Committee approval. No change to coverage eligibility.
09/09/2010	Medical Policy Committee review

Policy # 00060
Original Effective Date: 01/28/2002
Current Effective Date: 06/10/2024

09/15/2010	Medical Policy Implementation Committee approval. Policy title changed from "High-Dose Chemotherapy with Stem-Cell Support for Multiple Myeloma" to "Hematopoietic Stem-Cell Transplantation for Multiple Myeloma". Policy language and statements extensively updated to reflect current practice.
09/01/2011	Medical Policy Committee review
09/14/2011	Medical Policy Implementation Committee approval. No changes to coverage.
09/06/2012	Medical Policy Committee review
09/19/2012	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
03/04/2013	Coding updated
10/03/2013	Medical Policy Committee review
10/16/2013	Medical Policy Implementation Committee approval. Title changed. Coverage for POEMS syndrome added.
11/06/2014	Medical Policy Committee review
11/21/2014	Medical Policy Implementation Committee approval. No change to coverage.
03/05/2015	Medical Policy Committee review
03/19/2015	Medical Policy Implementation Committee approval. Tandem autologous-autologous hematopoietic stem-cell transplantation to treat multiple myeloma clarified.
03/03/2016	Medical Policy Committee review
03/16/2016	Medical Policy Implementation Committee approval. No change to coverage.
01/01/2017	Coding update: Removing ICD-9 Diagnosis Codes
03/02/2017	Medical Policy Committee review
03/15/2017	Medical Policy Implementation Committee approval. No change to coverage.
03/01/2018	Medical Policy Committee review
03/21/2018	Medical Policy Implementation Committee approval. No change to coverage.
03/07/2019	Medical Policy Committee review
03/20/2019	Medical Policy Implementation Committee approval. No change to coverage.
03/05/2020	Medical Policy Committee review
03/11/2020	Medical Policy Implementation Committee approval. No change to coverage.
03/04/2021	Medical Policy Committee review
03/10/2021	Medical Policy Implementation Committee approval. No change to coverage.
05/05/2022	Medical Policy Committee review

Coding

The five character codes included in the Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)‡, copyright 2023 by the American Medical Association (AMA). CPT is developed by the AMA as a listing of descriptive terms and five character identifying codes and modifiers for reporting medical services and procedures performed by physician.

The responsibility for the content of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines is with Blue Cross and Blue Shield of Louisiana and no endorsement by the AMA is intended or should be implied. The AMA disclaims responsibility for any consequences or liability attributable or related to any use, nonuse or interpretation of information contained in Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines. Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein. Any use of CPT outside of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines should refer to the most current Current Procedural Terminology which contains the complete and most current listing of CPT codes and descriptive terms. Applicable FARS/DFARS apply.

CPT is a registered trademark of the American Medical Association.

Hematopoietic Cell Transplantation for Plasma Cell Dyscrasias, Including Multiple Myeloma and POEMS Syndrome

Policy # 00060
Original Effective Date: 01/28/2002
Current Effective Date: 06/10/2024

Codes used to identify services associated with this policy may include (but may not be limited to) the following:

Code Type	Code
CPT	38204, 38205, 38206, 38207, 38208, 38209, 38210, 38211, 38212, 38213, 38214, 38215, 38230, 38232, 38240, 38241, 38242, 38243
HCPCS	S2140, S2142, S2150
ICD-10 Diagnosis	All related diagnoses

*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or
B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:
    1. Consultation with technology evaluation center(s);
    2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
    3. Reference to federal regulations.

**Medically Necessary (or "Medical Necessity") - Health care services, treatment, procedures, equipment, drugs, devices, items or supplies that a Provider, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury, disease or its symptoms, and that are:

A. In accordance with nationally accepted standards of medical practice;

B. Clinically appropriate, in terms of type, frequency, extent, level of care, site and duration, and considered effective for the patient's illness, injury or disease; and
C. Not primarily for the personal comfort or convenience of the patient, physician or other health care provider, and not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.

For these purposes, "nationally accepted standards of medical practice" means standards that are based on credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community, Physician Specialty Society recommendations and the views of Physicians practicing in relevant clinical areas and any other relevant factors.

‡ Indicated trademarks are the registered trademarks of their respective owners.

NOTICE: If the Patient's health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

NOTICE: Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.

NOTICE: Federal and State law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage.