Medical Policy

Blue Cross Blue Shield Blue Care Network of Michigan

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***Current Policy Effective Date: 3/1/24**
(See policy history boxes for previous effective dates)

Title: Placental and Umbilical Cord Blood Collection and Storage

Description/Background

Hematopoietic Cell Transplantation (HCT) is a procedure in which hematopoietic stem cells are intravenously infused to restore bone marrow and immune function in individuals with cancer, immune dysfunction and genetic disorders 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.

Blood harvested from the umbilical cord and placenta shortly after delivery of neonates contains stem and progenitor cells capable of restoring hematopoietic function after myeloablation. This cord blood has been used as an alternative source of allogeneic stem cells.

Several cord blood banks have been created in the U.S. and Europe. In addition to obtaining cord blood for specific related or unrelated individuals, some cord blood banks collect and store neonate cord blood for some unspecified future use in the unlikely event that the child develops a condition that would require autologous transplantation. Also, some neonate cord blood is collected and stored for use by a sibling in whom an allogeneic transplant is anticipated due to a history of leukemia or other condition requiring an allogeneic transplant.

Regulatory Status

According to the U.S. Food and Drug Administration (FDA), cord blood stored for potential use by an individual unrelated to the donor meets the definitions of “drug” and “biological products.” As such, products must be licensed under a biologics license application or an investigational new drug application before use. Facilities that prepare cord blood units only for autologous or related-donor transplants are required to register and list their products, adhere to Good Tissue

Practices issued by the FDA, and use applicable processes for donor suitability determination.(1)

Medical Policy Statement

Collection and storage of cord blood from a neonate may be considered established when an allogeneic transplant is proposed or imminent in an identified related recipient with a diagnosis that is consistent with the need for a transplant.

Collection and storage of cord blood from a neonate for an unknown/potential future diagnosis is considered experimental/ investigational when proposed as an autologous **or** allogeneic stem-cell transplant in the original donor, a related, or unrelated donor.

Inclusionary and Exclusionary Guidelines

Inclusions

- Collection and storage of cord blood from a neonate when an allogeneic transplant is proposed or imminent in an identified related recipient, with a diagnosis that is consistent with the need for a transplant[a]

[a] ***Refer to the appropriate BMT policy to determine if the transplant is covered for a specific diagnosis***

Exclusions

- Collection and storage of cord blood from a neonate when proposed in any of the following situations:
  - For some unknown/potential future diagnosis as an autologous stem-cell transplant in the original donor, or
  - For some unknown/potential future diagnosis as an allogeneic stem-cell transplant in a related or unrelated donor.
- Cord blood collection and storage for any of the following:
  - An unrelated recipient
  - A diagnosis that is not consistent with the need for transplantation
  - A diagnosis that is not covered within the related BMT policies

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CPT/HCPCS Level II Codes *(Note: The inclusion of a code in this list is not a guarantee of coverage. Please refer to the medical policy statement to determine the status of a given procedure)*

Established codes:

38205 88240[a] S2140 S2150[a]

Other codes (investigational, not medically necessary, etc.):

88240[b] S2150[b]

[a] *Applies to allogeneic transplant*
[b] *Applies to autologous transplant*

Rationale

CORD BLOOD AS SOURCE OF STEM CELLS FOR STEM CELL TRANSPLANT

A variety of malignant diseases and nonmalignant bone marrow disorders are treated with myeloablative therapy followed by infusion of the allogeneic stem and progenitor cells collected from immunologically compatible donors, either family members or an unrelated donor identified through a bone marrow donor bank. In some cases, a suitable donor is not found.

Cord blood is readily available and is thought to be antigenically “naive,” thus potentially minimizing the incidence of graft-versus-host disease (GVHD) and permitting the broader use of unrelated cord blood transplants. Unrelated donors are typically typed at low resolution for human leukocyte antigen A and B and at high resolution only for human leukocyte antigen DR; human leukocyte antigen matching at 4 of 6 loci is considered acceptable. Under this matching protocol, an acceptable donor can be identified for almost any recipient.

Standards and accreditation for cord blood banks are important for assisting transplant programs in knowing whether individual banks have quality control measures in place to address issues such as monitoring cell loss, change in potency, and prevention of product mix-up.(2) Two major organizations have created accreditation standards for cord blood banks in the United States: the American Association of Blood Banks and the International NetCord Foundation/Foundation for the Accreditation of Cellular Therapy. Both the American Association of Blood Banks and the International NetCord Foundation/Foundation for the Accreditation of Cellular Therapy have developed and implemented a program of voluntary inspection and accreditation for cord blood banking. The American Association of Blood Banks and the International NetCord Foundation/Foundation for the Accreditation of Cellular Therapy publish standards for cord blood banks that define the collection, testing, processing, storage, and release of cord blood products.(3)

Clinical Context and Therapy Purpose

The purpose of using placental and umbilical cord blood as a source of stem cells is to provide an alternative to or an improvement on existing donor sources in recipients with an appropriate indication for allogeneic stem cell transplant.

The following PICOs were used to select literature to inform this review.

Populations

The relevant population of interest are individuals with an appropriate indication for allogeneic stem cell transplant.

Interventions

The therapy being considered is placental or umbilical cord blood as a source of stem cells for allogeneic stem cell transplantation.

Individuals with an appropriate indication for allogeneic stem cell transplant are managed by a transplant specialist in an inpatient clinical setting.

Comparators
Comparators of interest include stem cells from other donor sources.

Outcomes
The general outcomes of interest are overall survival (OS), disease-specific survival, resource utilization, and treatment-related mortality.

The timing of follow-up is initially the first post-transplant year for successful engraftment and monitoring relevant outcomes. Follow-up is life-long for successful transplantation.

Study Selection Criteria
Methodologically credible studies were selected using the following principles:

- To assess efficacy outcomes, comparative controlled prospective trials were sought, with a preference for RCTs;
- In the absence of such trials, comparative observational studies were sought, with a preference for prospective studies.
- To assess long-term outcomes and adverse effects, single-arm studies that capture longer periods of follow-up and/or larger populations were sought.
- Studies with duplicative or overlapping populations were excluded.

REVIEW OF EVIDENCE

Related Allogeneic Cord Blood Transplant
The first cord blood transplant was a related cord blood transplant for a child with Fanconi's anemia; results were reported in 1989.(4) At least 60 other cord transplants have subsequently been performed in matched siblings. The results of these transplants demonstrated that cord blood contains sufficient numbers of hematopoietic stem and progenitor cells to reconstitute pediatric patients. A lower incidence of acute and chronic graft-versus-host disease (GVHD) when cord blood, as compared with bone marrow, was used as the source of donor cells was also observed.(5) This led to the hypothesis that cord blood could be banked and used as a source of unrelated donor cells, possibly without full HLA matching.(6)

Unrelated Allogeneic Cord Blood Transplant
The first prospective study of unrelated cord blood transplant was the Cord Blood Transplantation study (COBLT) from 1997-2004, published in 2005. COBLT was designed to examine the safety of unrelated cord blood transplantation in infants, children, and adults. In children with malignant and nonmalignant conditions, 2-year event-free survival was 55% in children with high-risk malignancies,(7) and 78% in children with nonmalignant conditions.(8) Across all groups, the cumulative incidence of engraftment by day 42 was 80%. Engraftment and survival were adversely affected by lower cell doses, pretransplant cytomegalovirus seropositivity in the recipient, non-European ancestry, and higher HLA mismatching. This slower engraftment leads to longer hospitalizations and greater utilization of medical resources.(9) In the COBLT study, outcomes in adults were inferior to the outcomes achieved in children.

Zhang et al (2012) published a meta-analysis of studies comparing unrelated donor cord blood transplantation to unrelated donor bone marrow transplantation in patients with acute leukemia.(10) Reviewers identified 7 studies with a total of 3,389 patients. Pooled rates of engraftment failure (n=5 studies) were 127 events in 694 patients (18%) in the cord blood

transplantation group and 57 events in 951 patients (6%) in bone marrow transplantation patients. The rate of engraftment graft failure was significantly higher in cord blood transplantation recipients, p<0.0001. However, rates of acute GVHD were significantly lower in the group receiving cord blood transplantation. Pooled rates of GVHD (n=7 studies) were 397 of 1,179 (34%) in the cord blood group and 953 of 2,189 (44%) in the bone marrow group, p<0.0001. Relapse rates, reported in all studies, did not differ significantly between groups. Several survival outcomes including overall survival, leukemia-free survival and non-relapse mortality favored the bone marrow transplantation group.

Also, numerous retrospective and registry studies have generally found that unrelated cord blood transplantation is effective in both children and adults with hematologic malignancies and children with a variety of nonmalignant conditions.(11-13) For example, Liu et al (2014) compared outcomes after unrelated donor cord blood transplantation and matched-sibling donor peripheral blood transplantation.(13) The study included patients ages 16 years or older who had hematologic malignancies. A total of 70 patients received unrelated cord blood and 115 patients received HLA-identical peripheral blood stem cells, alone or in combination with bone marrow. Primary engraftment rates were similar in the 2 groups (97% in the cord blood group, 100% in the peripheral blood stem cell group). Rates of most outcomes, including grades III to IV acute GVHD and 3-year disease-free survival, were also similar between groups. However, the rate of chronic GVHD was lower in the unrelated-donor cord blood group. Specifically, limited or extensive chronic GVHD occurred in 12 (21%) of 58 evaluable patients in the cord blood group and 46 (42%) of 109 evaluable patients in the peripheral blood stem cell group (p=0.005).

Fuchs et al (2020) reported on outcomes of 2 parallel phase 2 trials comparing unrelated umbilical cord blood transplantation versus haploidentical bone marrow transplantation in 368 patients aged 18 to 70 years old.(14) The 2-year progression-free survival (the primary endpoint) was 35% (95% confidence interval [CI], 28% to 42%) after cord blood transplants and 41% (95% CI, 34% to 48%) after haploidentical bone marrow transplants (p=0.41). The 2-year non-relapse mortality was 18% (95% CI, 13% to 24%) with cord blood transplant versus 11% (95% CI, 6% to 16%) with haploidentical transplants (p=0.04), resulting in a 2-year OS of 46% (95% CI, 38% to 53%) with cord blood transplant versus 57% (95% CI, 49% to 64%) with haploidentical bone marrow transplants (p=0.04).

Haplo-Cord Blood Transplantation

Haplo-cord transplants involve a combination of donated cord blood stem cells and half-matched (haploidentical) cells from a related donor.

Mo et al (2016) reported on outcomes after umbilical cord blood and haploidentical hematopoietic cell transplantation (haplo-HCT) in 129 children younger than 14 years old.(15) The 2-year probability of OS was 82% (95% confidence interval [CI], 72.2% to 91.8%) in the haplo-HCT group and 69.9% (95% CI, 58.0% to 81.2%) in the cord blood group. The difference in OS between groups was not statistically significant (p=0.07). The 2-year incidence of relapse was also similar in the 2 groups: 16% (95% CI, 6.1% to 26.1%) in the haplo-identical-HCT group and 24.1% (95% CI, 12.5% to 37.5%) in the cord blood group (p=0.17).

Hsu et al (2018) reported on patients with lymphoma or chronic lymphoblastic leukemia who underwent haplo-cord allogeneic stem cell transplantation.(16) Forty-two patients treated

between 2007 and 2016 were included in the analysis. After a median survivor follow-up of 42 months, the median 3-year GVHD relapse-free survival, progression-free survival, and OS were 53% (95% CI: 36-68%), 62% (95% CI: 44-75%), and 65% (95% CI: 48-78%), respectively. The cumulative incidence of relapse was 12% at 100 days and 19.5% at 1 year.(16)

Poonsombudlert et al (2019) performed a meta-analysis of 7 studies (N=3,434) comparing haploidentical transplant utilizing post-transplant cyclophosphamide versus umbilical cord transplant in patients without a matched relative.(17) Compared with umbilical cord transplant, haploidentical transplant utilizing cyclophosphamide was associated with a decreased risk of acute GVHD (odds ratio [OR], 0.78; 95% CI, 0.67 to 0.92) and relapse (OR, 0.74; 95% CI, 0.57 to 0.97) and an improved rate of chronic GVHD (OR, 1.41; 95% CI, 1.02 to 1.95) and OS (OR, 1.77; 95% CI, 1.1 to 2.87).

Li et al (2020) performed a meta-analysis of 7 studies in adult and pediatric patients with hematological malignancies (N=2,422) undergoing umbilical cord blood transplantation or haploidentical transplantation.(18) The results revealed a similar incidence of chronic GVHD and disease-free survival at 2 years between the 2 types of transplant in children. In adults, grade II to IV acute GVHD occurred at a higher rate with umbilical cord blood transplantation versus haploidentical transplantation (relative risk [RR], 1.17; 95% CI, 1.02 to 1.34; p=0.02). Rates of grade III to IV acute GVHD, chronic GVHD, relapse, non-relapse mortality, and disease-free survival at 2 years were similar between the 2 transplant types in adults.

Wu et al (2020) performed a meta-analysis of 12 studies (N=2,793) comparing haploidentical HCT versus umbilical cord blood transplantation for hematologic malignancies.(19) Compared with umbilical cord blood transplantation, HCT improved OS (OR, 0.74; 95% CI, 0.68 to 0.80), progression-free survival (OR, 0.77; 95% CI, 0.72 to 0.83), non-relapse mortality (OR, 0.72, 95% CI, 0.64 to 0.80), and acute GVHD (OR, 0.87; 95% CI, 0.77 to 0.98) but also increased the risk for chronic GVHD (OR, 1.40; 95% CI, 1.22 to 1.62).

Double Unit Cord Blood Transplantation

Transplantation of 2 umbilical cord blood units (or double-unit transplants) have been evaluated as a strategy to overcome cell-dose limitations with 1 cord blood unit in older and heavier patients. Initial experience at the University of Minnesota has shown that using 2 units of cord blood for a single transplant in adults improved rates of engraftment and overall survival.(20) Although cell doses are higher with double-unit transplants, studies published to date have found that survival rates are similar to transplants using single cord blood units and there is some suggestion of higher rates of GVHD (See Tables 1 and 2).(21)

Table 1. Summary of Key Trial Characteristics

Author (Year)	Countries	Sites	Dates	Participants	Active	Comparator
					Interventions	
Wagner et al (2014)		1		Patients (age range, 1 to 21 y) who had high-risk acute leukemia, chronic myeloid leukemia, or myelodysplastic syndrome for whom there were 2 HLA-matched cord blood units available	2 units	1 unit

HLA: human leukocyte antigen

Table 2. Summary of Key Trial Results

Study (Year)	1-Year OS	1-Year DFS	Acute GVHD	Chronic GVHD

Wagner et al (2014)				
Single unit (95% CI), %	73 (63 to 80)	70 (60 to 77)	13 (7 to 20)	30 (22 to 39)
Double unit (95% CI), %	65 (56 to 74)	64 (54 to 72)	23 (15 to 31)	32 (23 to 40)
p	0.17	0.011	0.02	0.51

CI: confidence interval; DFS: disease free survival; GVHD: graft-versus-host disease; OS: overall survival

Results of observational studies are similar to those of the Wagner et al (2014) RCT (see Tables 3 and 4). In a study by Scaradavou et al (2013), there was a significantly higher risk of acute GVHD (grade II-IV) in recipients of double-cord blood units treated during the first several years of observation.(22) In the later period (2004-2009), rates of acute GVHD (grade II-IV) did not differ significantly between single and double units of cord blood. A 2017 analysis by Baron et al found no significant differences between single- and double- cord blood transplantation for relapse or non-relapse mortality, with a trend (p=0.08) toward a higher incidence of GVHD with double units.(23)

Table 3. Summary of Key Observational Study Characteristics

Author (Year)	Study Type	Dates	Participants	Arm 1	Arm 2	Follow-Up
				Treatment		
Scaradavou et al (2013)	Comparative cohort	2002 to 2004 2004 to 2009		Single unit	Double unit	
Baron et al (2017)	Registry	2004-2014	Adults with first CBT for AML or ALL	Single unit	Double unit	

ALL: acute lymphocytic leukemia; AML: acute myeloid leukemia; CBT: cord blood transplantation

Table 4. Summary of Key Observational Study Results

Study (Year)	N	Relapse Mortality	Non-relapse Mortality	2002-2004	2004-2009
				Acute GVHD (95% CI)	
Scaradavou et al (2013)					
Single unit					
Double unit					
HR (95% CI)				6.14 (2.54 to 14.87)	1.69 (0.68 to 4.18)
P				<0.001	0.30
				2004-2014	
Baron et al (2017)					
Single unit	172			28%	
Double unit	362			36%	
HR (95% CI)		0.9 (0.6 to 1.3)	0.8 (0.5 to 1.2)		
P		0.5	0.3	0.08	

CI: confidence interval; GVHD: graft-versus-host disease; HR: hazard ratio; OS: overall survival

Section Summary: Cord Blood as Source of Stem Cells for Stem Cell Transplant

A number of observational studies and a meta-analysis of observational studies have compared outcomes after cord blood transplantation with stem cells from a different source. The meta-analysis found similar survival outcomes and lower GVHD after cord blood transplantation than bone marrow transplantation. In addition, an RCT has compared single- and double-unit cord blood transplantation and found similar outcomes.

PROPHYLACTIC COLLECTION AND STORAGE OF CORD BLOOD

Clinical Context and Therapy Purpose
The purpose of prophylactic collection and storage of placental or umbilical cord blood stem cells is to provide an alternative donor source for individuals without or with an unspecified potential future need for stem cell transplant.

The following PICOs were used to select literature to inform this review.

Populations
The relevant population of interest are individuals without or with an unspecified potential future need for stem cell transplant.

Interventions
The test being considered is prophylactic collection and storage of placental or umbilical cord blood stem cells.

The collection and preservation of placental or umbilical cord for future use is carried out at the time of labor and delivery and is carried out by commercial service providers.

Comparators
Comparators of interest include usual care without prophylactic storage of cord blood.

Outcomes
The general outcomes of interest are OS, disease-specific survival, resource utilization, and treatment-related mortality.

The future use of stored stem cells is unknown and, thus, the follow-up time period to transplant is indeterminate.

REVIEW OF EVIDENCE

No studies have compared outcomes after prophylactic collection and storage of cord blood from a neonate for individuals who have an unspecified future need for transplant to standard care without cord blood collection and storage.

Also, although blood banks are collecting and storing neonate cord blood for potential future use, data on the use of cord blood for autologous stem cell transplantation are limited. A 2017 position paper from the American Academy of Pediatrics noted that there is no evidence of the safety or effectiveness of autologous cord blood transplantation for treatment of malignant neoplasms.(24) Also, a 2009 survey of pediatric hematologists noted few transplants have been performed using cord blood stored in the absences of a known indication.(25)

Section Summary: Prophylactic Collection and Storage of Cord Blood
There is a lack of published evidence comparing outcomes after prophylactic collection and storage of cord blood from a neonate for individuals who have an unspecified future need for transplant to standard care without cord blood collection and storage.

SUMMARY OF EVIDENCE

For individuals who have an appropriate indication for allogeneic stem cell transplant who receive cord blood as a source of stem cells, the evidence includes a number of observational studies, a meta-analysis of observational studies, and a randomized controlled trial (RCT) comparing outcomes after single- or double-cord blood units. Relevant outcomes are overall survival, disease-specific survival, hospitalizations, resource utilization, and treatment-related mortality and morbidity. The meta-analysis of observational studies found similar survival outcomes and lower graft versus host disease after cord blood transplantation than bone marrow transplantation. In the RCT, survival rates were similar after single-unit and double-unit cord blood transplantation. The evidence is sufficient to determine qualitatively that the technology results in a meaningful improvement in the net health outcome.

For individuals who have an unspecified potential future need for stem cell transplant who receive prophylactic collection and storage of cord blood, the evidence includes no published studies. The relevant outcomes are OS, disease-specific survival, resource utilization and treatment-related mortality. No evidence was identified on the safety or effectiveness of autologous cord blood transplantation from prophylactically stored cord blood for the treatment of malignant neoplasms. The evidence is insufficient to determine the effects of the technology on health outcomes.

Ongoing and Unpublished Clinical Trials

Some currently unpublished trials that might influence this review are listed in Table 5.

Table 5. Summary of Key Trials

NCT No.	Trial Name	Planned Enrollment	Completion Date
Ongoing			
NCT01728545	The collection and storage of umbilical cord blood for transplantation	250,000	June 2099
NCT00012545	Collection and storage of umbilical cord stem cells for treatment of sickle cell disease	99,999,999	None

NCT: national clinical trial

Supplemental Information

PRACTICE GUIDELINES AND POSITION STATEMENTS

American Academy of Pediatrics

A position statement on cord blood banking for potential future transplantation was published by the American Academy of Pediatrics in 2017.(24) The Academy recommended cord blood banking for public use, with a more limited role for private cord blood banking for families with a known fatal illness that could be rescued by cord blood transplant.

American College of Obstetricians and Gynecologists

The American College of Obstetricians and Gynecologists (2015; updated 2019) published an opinion on umbilical cord blood banking UCB).(26) The statement discussed counseling patients about options for umbilical cord blood banking, as well as benefits and limitations of this practice. Relevant recommendations include the following:

- "[UCB] collected from a neonate cannot be used to treat a genetic disease or malignancy in that same individual."
- "The routine collection and storage of umbilical cord blood with a private cord blood bank is not supported by the available evidence."
- "Private [UCB] banking may be considered when there is knowledge of a family member with a medical condition(malignant or genetic) who could potentially benefit from cord blood transplantation."
- "Public [UCB] banking is the recommended method of obtaining [UBC] for use in transplantation, immune therapies, or other medically validated indications."
- "Umbilical cord blood collection should not compromise obstetric or neonatal care or alter routine practice for the timing of umbilical cord clamping."
- "The current indications for cord blood transplant are limited to select genetic, hematologic, and malignant disorders."
- "If a patient requests information about [UCB] banking, balanced and accurate information regarding the advantages and disadvantages of public and private [UCB] banking should be provided."

American Society for Blood and Marrow Transplantation
On behalf of the American Society for Blood and Marrow Transplantation, in 2008 Ballen et al published recommendations related to the banking of umbilical cord blood:(27)

- Public banking of cord blood is "encouraged"
- Storing cord blood for autologous (i.e., personal) use "is not recommended."
- Family member banking (collecting and storing cord blood for a family member) is recommended when there is a sibling with a disease that may be successfully treated with an allogeneic transplant.
- Family member banking on behalf of a parent with a disease that may be successfully treated with an allogeneic transplant is only recommended when there are shared HLA antigens between the parents.

American Society of Transplantation and Cellular Therapy
In 2020, the American Society of Transplantation and Cellular Therapy released an evidence-based review on hematopoietic cell transplantation for treating newly diagnosed adult acute myeloid leukemia.(28) The summary stated that a haploidentical related donor is preferred over umbilical cord blood (UCB) in the absence of a fully HLA-matched donor, but UCB unit transplantation is an option for centers with this expertise.

Government Regulations
National/Local:

Medicare has a national coverage determination (NCD) addressing stem cell transplants. Coverage is determined by diagnosis, rather than the cell source utilized.

There is no NCD or local coverage determination (LCD) specifically addressing the collection or storage of umbilical cord blood for potential use of an undefined/unknown condition or in an indeterminate time frame.

(The above Medicare information is current as of the review date for this policy. However, the coverage issues and policies maintained by the Centers for Medicare & Medicare Services [CMS, formerly HCFA] are updated

and/or revised periodically. Therefore, the most current CMS information may not be contained in this document. For the most current information, the reader should contact an official Medicare source.)

Related Policies

- BMT – Hematopoietic Cell Transplantation for Acute Lymphoblastic Leukemia
- BMT - Hematopoietic Cell Transplantation for Acute Myeloid Leukemia and Blastic Plasmacytoid Dendritic Cell Neoplasm (BPDCN)
- BMT – Hematopoietic Cell Transplantation for Autoimmune Diseases
- BMT – Hematopoietic Cell Transplantation for Chronic Lymphocytic Leukemia and Small Cell Lymphocytic Lymphoma – Autologous or Allogeneic
- BMT – Hematopoietic Cell Transplantation for Chronic Myeloid Leukemia
- BMT – Hematopoietic Cell Transplantation for CNS Tumors, Embryonal Tumors and Ependymoma
- BMT – Hematopoietic Cell Transplantation for Epithelial Ovarian Cancer
- BMT – Hematopoietic Cell Transplantation for Genetic Diseases and Acquired Anemias (Allogeneic)
- BMT – Hematopoietic Cell Transplantation for Germ-Cell Tumors
- BMT – Hematopoietic Cell Transplantation for Hodgkin Lymphoma
- BMT – Hematopoietic Cell Transplantation for Malignant Astrocytomas and Gliomas (Autologous)
- BMT – Hematopoietic Cell Transplantation for Miscellaneous Solid Tumors in Adults
- BMT – Hematopoietic Cell Transplantation for Myelodysplastic Syndromes and Myeloproliferative Neoplasms
- BMT – Hematopoietic Cell Transplantation for Non-Hodgkin Lymphomas
- BMT - Hematopoietic Cell Transplantation for Plasma Cell Dyscrasias, Including Multiple Myeloma, Plasma Cell Leukemia, Plasmacytoma, and POEMS Syndrome
- BMT – Hematopoietic Cell Transplantation for Primary Amyloidosis
- BMT – Hematopoietic Cell Transplantation for Solid Tumors of Childhood
- BMT – Hematopoietic Cell Transplantation for Waldenström's Macroglobulinemia
- Donor Lymphocyte Infusion for Malignancies Treated with an Allogeneic Hematopoietic Cell Transplant
- Orthopedic Applications of Stem-Cell Therapy (Including Allografts and Bone Substitutes used with Autologous Bone Marrow)

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The articles reviewed in this research include those obtained in an Internet based literature search for relevant medical references through October 23, 2023, the date the research was completed.

Joint BCBSM/BCN Medical Policy History

Policy Effective Date	BCBSM Signature Date	BCN Signature Date	Comments
9/1/10	7/22/10	6/15/10	Joint policy established; S code requested for cord blood harvesting for potential use, autologous.
11/1/12	8/21/12	8/21/12	Routine maintenance.
11/1/13	8/20/13	9/3/13	Routine maintenance; policy updated to mirror BCBSA Title changed from "Umbilical Cord Blood Collection & Storage—Prophylactic" to "Placental and Umbilical Cord Blood as a Source of Stem Cells."
3/1/15	12/12/14	12/29/14	Routine update. No substantive changes.
3/1/16	12/10/15	12/10/15	Routine update to references. No change in policy status.
3/1/17	12/13/16	12/13/16	Routine policy maintenance, updated rationale and references.
3/1/18	12/12/17	12/12/17	Routine policy maintenance, updated rationale, added references 16, 20 and 22. No change in policy status.
5/1/19	2/19/19		Routine policy update, added reference # 20-21. No change in policy status.
5/1/20	2/18/20		Routine policy update, added reference #17. No change in policy status.
5/1/21	2/16/21		Routine maintenance
5/1/22	2/15/22		Routine policy maintenance, no change in policy status.
5/1/23	2/21/23		Routine policy maintenance, no change in policy status. (ds)
3/1/24			• Routine maintenance (slp) • Vendor Managed: N/A • Title changed from: "Placental and Umbilical Cord Blood as a Source of Stem Cells" to "Placental and

			Umbilical Cord Blood Collection and Storage."
			• Code updates:
			  ○ S2142 removed
			  ○ 38205 and 88240 added as EST
			  ○ S2150 split – EI for autologous and EST for allogeneic
			• Background, criteria, and rationale adjusted to focus on cord blood collection and storage
			• "proposed or" added to MPS and inclusions for clarification

Next Review Date: 4th Qtr. 2024

BLUE CARE NETWORK BENEFIT COVERAGE
POLICY: PLACENTAL AND UMBILICAL CORD BLOOD COLLECTION AND STORAGE

I. Coverage Determination:

Commercial HMO (includes Self-Funded groups unless otherwise specified)	Covered; criteria applies
BCNA (Medicare Advantage)	Refer to Government Regulations
BCN65 (Medicare Complementary)	Coinsurance covered if primary Medicare covers the service.

II. Administrative Guidelines:

- The member's contract must be active at the time the service is rendered.
- Coverage is based on each member's certificate and is not guaranteed. Please consult the individual member's certificate for details. Additional information regarding coverage or benefits may also be obtained through customer or provider inquiry services at BCN.
- The service must be authorized by the member's PCP except for Self-Referral Option (SRO) members seeking Tier 2 coverage.
- Services must be performed by a BCN-contracted provider, if available, except for Self-Referral Option (SRO) members seeking Tier 2 coverage.
- Payment is based on BCN payment rules, individual certificate and certificate riders.
- Appropriate copayments will apply. Refer to certificate and applicable riders for detailed information.
- CPT - HCPCS codes are used for descriptive purposes only and are not a guarantee of coverage.