Medical Policy
Placental/Umbilical Cord Blood as a Source of Stem Cells

Table of Contents
- Policy: Commercial
- Policy: Medicare
- Authorization Information
- Coding Information
- Description
- Information Pertaining to All Policies
- Policy History
- References

Policy Number: 285
BCBSA Reference Number: 7.01.50
NCD/LCD: N/A

Related Policies
- Hematopoietic Cell Transplantation for Non-Hodgkin Lymphomas, #143
- Allogeneic Cell Transplantation for Myelodysplastic Syndromes and Myeloproliferative Neoplasms, #155
- Allogeneic Hematopoietic Cell Transplantation for Genetic Diseases and Acquired Anemias, #190
- Hematopoietic Cell Transplantation for Epithelial Ovarian Cancer, #204
- Hematopoietic Cell Transplantation for Miscellaneous Solid Tumors in Adults, #191
- Hematopoietic Cell Transplantation for Autoimmune Diseases, #192
- Hematopoietic Cell Transplantation for Acute Myeloid Leukemia, #150
- Hematopoietic Cell Transplantation for Central Nervous System Embryonal Tumors and Ependymoma, #205
- Hematopoietic Cell Transplantation for Hodgkin Lymphoma, #207
- Hematopoietic Cell Transplantation for Chronic Myelogenous Leukemia, #212
- Hematopoietic Cell Transplantation as a Treatment of Acute Lymphoblastic Leukemia, #076
- High-Dose Rate Temporary Prostate Brachytherapy, #353
- Hematopoietic Cell Transplantation in the Treatment of Germ Cell Tumors, #247
- Hematopoietic Cell Transplantation for Waldenström Macroglobulinemia, #322

Policy
Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity
Medicare HMO BlueSM and Medicare PPO BlueSM Members

Transplantation of cord blood stem cells from related or unrelated donors may be MEDICALLY NECESSARY in patients with an appropriate indication for allogeneic stem-cell transplant.

Collection and storage of cord blood from a neonate may be MEDICALLY NECESSARY when an allogeneic transplant is imminent in an identified recipient with a diagnosis that is consistent with the possible need for allogeneic transplant.
Transplantation of cord blood stem cells from related or unrelated donors in all other situations is **INVESTIGATIONAL**.

Prophylactic collection and storage of cord blood from a neonate when proposed for some unspecified future use as an autologous stem-cell transplant in the original donor, or for some unspecified future use as an allogeneic stem-cell transplant in a related or unrelated donor is **NOT MEDICALLY NECESSARY**.

### Prior Authorization Information

**Inpatient**
- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed **inpatient**.

**Outpatient**
- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed **outpatient**.

<table>
<thead>
<tr>
<th>Commercial Managed Care (HMO and POS)</th>
<th>Prior authorization is required.</th>
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<tbody>
<tr>
<td>Commercial PPO and Indemnity</td>
<td>Prior authorization is required.</td>
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<tr>
<td>Medicare HMO Blue℠</td>
<td>Prior authorization is required.</td>
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<tr>
<td>Medicare PPO Blue℠</td>
<td>Prior authorization is required.</td>
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</table>

### CPT Codes / HCPCS Codes / ICD Codes

Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member’s contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following codes are included below for informational purposes only; this is not an all-inclusive list.

The above **medical necessity criteria MUST** be met for the following codes to be covered for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

### HCPCS Codes

<table>
<thead>
<tr>
<th>HCPCS codes:</th>
<th>Code Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2140</td>
<td>Cord blood harvesting for transplantation, allogeneic</td>
</tr>
<tr>
<td>S2142</td>
<td>Cord blood-derived stem-cell transplantation, allogeneic</td>
</tr>
<tr>
<td>S2150</td>
<td>Bone marrow or blood-derived stem cells (peripheral or umbilical), allogeneic or autologous, harvesting, transplantation, and related complications; including: pheresis and cell preparation/storage; marrow ablative therapy; drugs, supplies, hospitalization with outpatient follow-up; medical/surgical, diagnostic, emergency, and rehabilitative services; and the number of days of pre and post-transplant care in the global definition</td>
</tr>
</tbody>
</table>

### ICD-10 Procedure Codes

<table>
<thead>
<tr>
<th>ICD-10-PCS procedure codes:</th>
<th>Code Description</th>
</tr>
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<tbody>
<tr>
<td>30233Y0</td>
<td>Transfusion of Autologous Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach</td>
</tr>
</tbody>
</table>
Transfusion of Autologous Cord Blood Stem Cells into Peripheral Vein, Percutaneous Approach

Transfusion of Non autologous Cord Blood Stem Cells into Peripheral Vein, Percutaneous Approach

Transfusion of Non autologous Hematopoietic Stem Cells into Peripheral Vein, Percutaneous Approach

Transfusion of Autologous Cord Blood Stem Cells into Central Vein, Percutaneous Approach

Transfusion of Non autologous Cord Blood Stem Cells into Central Vein, Percutaneous Approach

Transfusion of Autologous Hematopoietic Stem Cells into Central Vein, Percutaneous Approach

Transfusion of Non autologous Hematopoietic Stem Cells into Central Vein, Percutaneous Approach

Transfusion of Autologous Cord Blood Stem Cells into Central Artery, Percutaneous Approach

Transfusion of Non autologous Cord Blood Stem Cells into Central Artery, Percutaneous Approach

Transfusion of Autologous Hematopoietic Stem Cells into Central Artery, Percutaneous Approach

Transfusion of Non autologous Hematopoietic Stem Cells into Central Artery, Percutaneous Approach

Introduction of Other Antineoplastic into Peripheral Vein, Percutaneous Approach

Introduction of Other Antineoplastic into Central Vein, Percutaneous Approach

Introduction of Other Antineoplastic into Peripheral Artery, Percutaneous Approach

Introduction of Other Antineoplastic into Central Artery, Percutaneous Approach

Description

Bone Marrow Disorders

A variety of malignant diseases and nonmalignant bone marrow disorders are treated with myeloablative therapy followed by infusion of 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.

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. Cord blood is readily available and is thought to be antigenically “naive,” thus potentially minimizing the incidence of graft-versus-host disease 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 patient.

Several cord blood banks have been created in the United States and Europe. In addition to obtaining cord blood for specific related or unrelated patients, 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.

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. Two major organizations have created accreditation standards for cord blood banks in the U.S.: the American Association of Blood Banks and the International NetCord Foundation/Foundation for the Accreditation of Cellular Therapy.
(NetCord/FACT). Both the AABB and the NetCord/FACT have developed and implemented a program of voluntary inspection and accreditation for cord blood banking. The AABB and the NetCord/FACT publish standards for cord blood banks that define the collection, testing, processing, storage, and release of cord blood products.²

Summary
This evidence review addresses the collection, storage, and transplantation of placental and umbilical cord blood (“cord blood”) as a source of stem cells for allogeneic and autologous stem cell transplantation. Potential indications for the use of cord blood are not addressed herein; they are discussed in the disease-specific evidence reviews.

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 comparing outcomes after single- or double-cord blood units. The relevant outcomes are overall survival, disease-specific survival, resource utilization, and treatment-related mortality. 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 randomized controlled trial, survival rates were similar after single- and double-unit cord blood transplantation. The evidence is sufficient to determine 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 overall survival, 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.

Policy History

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>8/2019</td>
<td>Clarified coding information</td>
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<tr>
<td>2/2018</td>
<td>New references added from BCBSA National medical policy.</td>
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<tr>
<td>2/2017</td>
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<tr>
<td>12/2016</td>
<td>Clarified coding information.</td>
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<tr>
<td>11/2015</td>
<td>New references added from BCBSA National medical policy.</td>
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<tr>
<td>6/2014</td>
<td>Updated Coding section with ICD10 procedure and diagnosis codes. Effective 10/2015.</td>
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<td>12/2013</td>
<td>New references from BCBSA National medical policy.</td>
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<tr>
<td>12/2012</td>
<td>Updated to add new CPT code 38243.</td>
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<tr>
<td>5/2011</td>
<td>Updated to remove information referencing related policies #092 and #126. The same information was removed from policy #092, Allogeneic Stem Cell Transplants.</td>
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<tr>
<td>1/1/2011</td>
<td>New policy effective 1/1/2011 describing ongoing non-coverage.</td>
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</tbody>
</table>

Information Pertaining to All Blue Cross Blue Shield Medical Policies
Click on any of the following terms to access the relevant information:
Medical Policy Terms of Use
References


5. Blue Cross and Blue Shield Association Technology Evaluation Center (TEC). Transplanting Adult Patients with Hematopoietic Stem Cells from Placental and Umbilical Cord Blood TEC Assessments. 2001;Volume 16:Tab 17. PMID


