

## Corporate Medical Policy

# Bone Marrow Transplant for Chronic Myelogenous Leukemia

<b>File Name:</b>	bone_marrow_transplant_for_chronic_myelogenous_leukemia
<b>Policy Number:</b>	SUR6090.8
<b>Origination:</b>	2/2001
<b>Last Review:</b>	11/2008
<b>Next Review:</b>	11/2010

### Description of Procedure or Service

---

This policy addresses high-dose chemotherapy with [hematopoietic stem-cell](#) support as a treatment of chronic myelogenous leukemia. Bone marrow transplants typically include high-dose chemotherapy (HDC).

"High-dose chemotherapy" (HDC) involves the administration of [cytotoxic agents](#) for the treatment of cancer. It uses doses several times greater than the standard therapeutic dose. In some cases, whole body or localized radiotherapy is also given and is included in the term HDC. The rationale for HDC is that many [cytotoxic agents](#) act according to a [steep dose response curve](#). Thus, small increments in dosage will result in relatively large increases in tumor cell kill. Increasing the dosage also increases the incidence and severity of adverse effects related primarily to bone marrow [ablation](#) (e.g., [opportunistic](#) infections, hemorrhage, organ failure).

Various techniques have been developed to counter the [myelosuppressive](#) effects, and secondary susceptibility to infections of HDC regimens. The main technique is the infusion into the patient of [hematopoietic stem cells](#) to repopulate the bone marrow. [Hematopoietic stem cells](#) are primitive cells capable of replication and formation into mature blood cells. [Stem cells](#) can be [harvested](#) from three sources:

1. Bone marrow cells: Bone marrow [stem cells](#) can be harvested from a related or unrelated donor.
2. Peripheral [stem cells](#): [Stem cells](#) may be harvested from the peripheral blood circulation. This may involve several pheresis procedures. Pheresis involves withdrawing blood from a donor in which a portion containing [stem cells](#) is separated and retained with the remainder retransfused back to the donor.
3. [Umbilical cord](#): Blood harvested from the [umbilical cord](#) and [placenta](#) shortly after the delivery of neonates contains [stem cells](#). Although cord blood is an allogeneic source, these [stem cells](#) are associated with a lower incidence of rejection or graft versus host disease.

When [harvested](#) from and infused back into the same patient, [stem cells](#) are referred to as [autologous](#). [Stem cells harvested](#) from a healthy, [histocompatible](#) donor and infused into a patient are referred to as [allogeneic](#).

Chronic myelogenous leukemia is a [malignancy](#) characterized by the over production of granulocytes and is almost always characterized by the presence of a chromosomal abnormality called the "Philadelphia" chromosome. This disease can occur at any age, but most often occurs in adults with a median age of 45.

### Policy

---

BCBSNC will provide coverage for Bone Marrow Transplant, high dose chemotherapy and [stem cell](#)

---

## Policy: Bone Marrow Transplant for Chronic Myelogenous Leukemia

support for Chronic Myelogenous Leukemia when it is determined to be medically necessary because the medical criteria and guidelines shown below are met.

If the medical criteria and guidelines are not met, some patients may be eligible for coverage under clinical trials. Refer to the policy, Clinical Trial Services for Life-Threatening Conditions.

### Benefits Application

---

Please refer to certificate for availability of benefits. This policy relates only to the services or supplies described herein. Benefits may vary according to benefit design, therefore certificate language should be reviewed before applying the terms of the policy.

**There may be certificates which exclude benefits for transplantation or for specific diagnoses.**

**Services for or related to the search for a donor are not covered.**

### When Bone Marrow Transplant for Chronic Myelogenous Leukemia is covered

---

**Note: The clinical indications and discussion of Bone Marrow Transplant for Chronic Myelogenous Leukemia is complex and technical. If you have any questions concerning this treatment, please talk with your physician.**

High Dose Chemotherapy with [allogeneic stem cell](#) support may be considered medically necessary as a treatment of chronic myelogenous leukemia.

### When Bone Marrow Transplant for Chronic Myelogenous Leukemia is not covered

---

High Dose Chemotherapy with [autologous stem cell](#) support is considered investigational as a treatment of chronic myelogenous leukemia.

### Policy Guidelines

---

Refer to the individual certificate for prior approval/precertification requirements.

While some HDC protocols can be administered on an outpatient basis, typically the patient is hospitalized for management of the marrow [ablative](#) complications of the therapy. All patients receiving whole body radiotherapy, typically those receiving an [allogeneic](#) transplant (from donor to patient), will require prolonged hospitalization.

The National Comprehensive Cancer Network (NCCN) guidelines on Chronic Myelogenous Leukemia recommend allogeneic bone marrow transplant for the treatment of primary CML and CML with disease progression. However, autologous bone marrow transplant for CML is not addressed in these guidelines.

### Billing/Coding/Physician Documentation Information

---

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at [www.bcbsnc.com](http://www.bcbsnc.com). They are listed in the Category Search on the Medical Policy search page.

*Applicable codes: 38205, 38206, 38230, 38240, 38241, 38242, S2150*

## Policy: Bone Marrow Transplant for Chronic Myelogenous Leukemia

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

### Policy Key Words

---

Key Words: High Dose Chemotherapy, HDC, Stem Cell Support, SCS, Autologous, Allogeneic, Chronic Myelogenous Leukemia, CML, Bone Marrow Transplant, BMT, SUR6090.8.

### Medical Term Definitions

---

#### **Ablation**

the removal of tissue or an abnormal growth, usually by cutting; may also refer to a very high dose of treatment that is calculated to kill a tumor.

#### **Allogeneic**

genetically dissimilar - involves a donor and a recipient; genes are not identical in each organism.

#### **Autologous**

derived from the same organism, i.e., self donation.

#### **Cytotoxic agents**

drugs which possess a specific destructive action on certain cells; often used to refer to drugs used to fight cancer, such as chemotherapy.

#### **Harvesting**

to remove tissues or cells from a donor and preserve for transplantation.

#### **Hematopoietic**

pertaining to or effecting the formation of blood cells.

#### **Histocompatible**

tissue compatible; donor and recipient are well enough matched that a transplant will be easily accepted.

#### **Malignancy**

a cancer.

#### **Myelosuppressive**

something that inhibits bone marrow activity, resulting in decreased production of blood cells and platelets.

#### **Opportunistic**

a microorganism that does not usually cause disease but that, under certain circumstances such as impaired immune system due to other diseases or drug treatment becomes pathogenic.

## Policy: Bone Marrow Transplant for Chronic Myelogenous Leukemia

### Placenta

Temporary organ formed from both fetal and maternal tissues that provides nutrients and oxygen to the developing fetus, carries away fetal metabolic wastes, and produces the hormones of pregnancy.

### Steep dose response curve

a theory in delivery of cytotoxic agents that small increments in dosage will result in relatively large increases in tumor cell kill.

### Stem cells

immature generic blood cells that will mature into the various types of blood cells in the body.

### Umbilical cord

a flexible structure through which the umbilical arteries and vein pass and which connects the fetus to the placenta.

## Scientific Background and Reference Sources

---

BCBSA Medical Policy Reference Manual, 12/1/1999

The Merck Manual of Diagnosis and Therapy, Seventeenth Edition, Centennial Edition, Section 11, Hematology and Oncology, Chapter 138, Leukemias. [www.merck.com](http://www.merck.com)

BCBSA Medical Policy Reference Manual, 10/8/2002; 8.01.30

Specialty Matched Consultant Advisory Panel - 11/2002

National Comprehensive Cancer Network. (2003). NCCN practice guidelines in oncology, chronic myelogenous leukemia. Retrieved 9/7/2004 from [http://www.nccn.org/physician\\_gls/PDF/cml.pdf](http://www.nccn.org/physician_gls/PDF/cml.pdf).

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.30, 7/15/2004

Specialty Matched Consultant Advisory Panel - 11/2004

National Comprehensive Cancer Network. (2006). NCCN practice guidelines in oncology, chronic myelogenous leukemia. Retrieved 8/7/2006 from [http://www.nccn.org/physician\\_gls/PDF/cml.pdf](http://www.nccn.org/physician_gls/PDF/cml.pdf).

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.30, 9/27/2005

Specialty Matched Consultant Advisory Panel - 11/2006

National Comprehensive Cancer Network. (2008). NCCN practice guidelines in oncology, chronic myelogenous leukemia. Retrieved 9/17/2008 from [http://www.nccn.org/professionals/physician\\_gls/PDF/cml.pdf](http://www.nccn.org/professionals/physician_gls/PDF/cml.pdf)

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.30, 6/12/2008

Specialty Matched Consultant Advisory Panel - 11/2008

## Policy Implementation/Update Information

---

1/01 Specialty Matched Consultant Advisory Group.

2/01 Original policy issued.

2/03 Specialty Matched Consultant Advisory Panel review 11/2002. No change in criteria. Codes 86812-86822 removed; codes 38231 and 86915 deleted and codes 38242, 38205 and 38206 added to the Billing/Coding section. System coding changes.

## **Policy: Bone Marrow Transplant for Chronic Myelogenous Leukemia**

- 1/04 Benefits Application and Billing/Coding sections updated for consistency.
- 2/04 Individual CPT codes listed for CPT code ranges 38240-38242 under Billing/Coding section.
- 7/29/04 HCPCS code S2150 added to Billing/Coding section.
- 12/9/04 Specialty Matched Consultant Advisory Panel review 11/29/04. No changes to criteria. Revised Description of Procedure or Service section. Revised wording in When Bone Marrow Transplant for Chronic Myelogenous Leukemia is covered section. Added rationale to Policy Guidelines section. Added policy number to Policy Key Words. "Hematopoietic" and "Opportunistic" added to Definitions. References added.
- 12/11/06 Specialty Matched Consultant Advisory Panel review 11/6/06. Added the following statement to the "Policy" section; "If the medical criteria and guidelines are not met, some patients may be eligible for coverage under clinical trials. Refer to the policy, Clinical Trial Services for Life-Threatening Conditions." References added.
- 12/22/08 Specialty Matched Consultant Advisory Panel review 11/13/2008. No change to policy statement. References added.

---

Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.