



# CIGNA MEDICAL COVERAGE POLICY

The following Coverage Policy applies to all plans administered by CIGNA Companies including plans administered by Great-West Healthcare, which is now a part of CIGNA.

**Subject Stem-Cell Transplantation for Renal Cell Carcinoma**

**Effective Date .....5/15/2010**  
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**Coverage Policy Number .....0322**

## Table of Contents

Coverage Policy .....	1
General Background .....	1
Coding/Billing Information .....	3
References .....	4
Policy History.....	6

## Hyperlink to Related Coverage Policies

Cryoablation of Renal Tumors  
 Radiofrequency Ablation (RFA) of Renal Masses  
 Stem-Cell Transplantation for Adult Solid Tumors

### INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans as well as benefit plans formerly administered by Great-West Healthcare. Please note, the terms of a participant's particular benefit plan document [Group Service Agreement (GSA), Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a participant's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a participant's benefit plan document **always supercedes** the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable group benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. Proprietary information of CIGNA. Copyright ©2010 CIGNA

## Coverage Policy

**CIGNA does not cover hematopoietic stem-cell transplantation (HSCT) for the treatment of renal cell carcinoma, because it is considered experimental, investigational or unproven.**

## General Background

Renal cell carcinoma, also known as renal adenocarcinoma, kidney cancer or hypernephroma, is a form of cancer that affects the renal tubules. Approximately 90% of all renal tumors are renal cell carcinoma; 85% of these are clear cell tumors (National Comprehensive Cancer Network Guidelines™ [NCCN Guidelines™], 2010). Up to 30% of patients have metastatic disease upon initial diagnosis, and up to 50% of patients with local disease subsequently develop metastases. Metastatic disease confers a poor prognosis, with < 10% survival at five years (Arya, et al., 2004).

The probability of cure is directly related to the stage or degree of tumor dissemination. Because many patients are diagnosed when the tumor is still generally localized and amenable to surgical resection, there is an overall five-year survival rate of 40%. Estimated five-year disease-free survival rates are 96% for stage I disease and 23% for stage IV and recurrent renal cell carcinoma (National Cancer Institute [NCI], 2009).

Simple or radical surgical resection of the tumor is the mainstay of treatment. Most renal cell cancers are resistant to systemic chemotherapy, limiting the efficacy of this approach (National Cancer Institute [NCI], 2009).

Other treatment strategies include the use of interferon alfa, interleukin-2, and more recently, tyrosine kinase inhibitors. Palliative care is provided to patients who are not candidates for surgery. Because of the lack of curative therapy for metastatic disease and the promise of targeted therapies patients should be considered for the many ongoing clinical trials testing single or combination therapies (NCI, 2009). Stem-cell transplantation has been proposed as a treatment for renal cell carcinoma.

### **Stem-Cell Transplantation**

Stem-cell transplantation refers to the transplantation of hematopoietic stem cells (HSCs) from a donor into a recipient. HSCs are immature cells that can develop into any of the three types of blood cells (i.e., red cells, white cells or platelets). Hematopoietic stem-cell transplantation (HSCT) can be either autologous (i.e., using the patient's own stem cells) or allogeneic (i.e., using stem cells from a donor).

**Autologous HSCT:** Data are lacking in the published, peer-reviewed scientific literature regarding the safety and/or effectiveness of autologous HSCT for the treatment of renal cell carcinoma. At this time the role of this therapy has not been established.

**Allogeneic HSCT:** Early studies of ablative regimens for treatment of chemotherapy-refractory metastatic solid tumors demonstrated that the high doses of chemotherapy required to ablate the recipient's bone marrow lead to unacceptably high treatment-related mortality rates of 20–35% (Arya, 2004). The NCI (2009) notes responses to cytotoxic chemotherapy generally have not exceeded 10% for any regimen that has been studied in adequate numbers of patients.

In a retrospective analysis, Nakayama et al. (2007) studied 99 patients with metastatic renal cell carcinoma to characterize the natural history of the disease, identify prognostic factors, and compare outcomes in patients who did (n=23) or did not (n=76) undergo allogeneic HSCT. For those who did not undergo transplantation, patients with poor performance status and brain metastasis were excluded for the purposes of comparison with the transplant group. Overall response rate (i.e. complete and partial response) in the transplant group was 26%; of these, 17% achieved complete response. Treatment-related mortality was 17% and 26% at 100 days and 12 months after transplant, respectively. At a median of seven months, 74% of patients had died in the transplant group. At a median follow-up of 17.4 months, overall survival rates were comparable in the transplant and non-transplant groups (p=.92).

In theory, allogeneic HSCT for solid organ malignancies may induce a graft-versus-tumor reaction. The high treatment-related mortality and suggestion of a graft-versus-tumor effect associated with myeloablative preparative regimens has led to the study of reduced-intensity and non-myeloablative preparative regimens as conditioning for allogeneic stem-cell transplantation. In several nonrandomized case series and retrospective analyses with small patient populations, complete donor chimerism was observed in the majority of patients. Response rates were variable at 0%–42%. Despite reduced intensity or nonmyeloablative conditioning, treatment-related mortality rates are 12%–33%, primarily from graft-versus-host disease (Bregni, 2009; Peres, 2007; Yun, 2007; Barkholt, 2006; Artz, 2005; Massenkeil, 2004; Bregni, 2002; Rini, 2002; Childs, 2000). One-year survival rates are 18%–59%; there are scarce data regarding long-term outcomes.

High treatment-related toxicity remains an obstacle to the safety and effectiveness of HSCT for renal cell carcinoma. Optimal patient selection criteria, most effective conditioning regimen, and strategies to exploit the graft-versus-tumor effect continue to be identified. While promising, there is insufficient evidence to demonstrate the safety and effectiveness of HSCT for this indication. The role of HSCT has not yet been established for renal cell carcinoma.

### **Professional Societies/Organizations**

The National Cancer Institute, National Comprehensive Cancer Network<sup>®</sup>, and the American Cancer Society guidelines do not comment on the use of hematopoietic stem-cell transplantation for the treatment of renal cell carcinoma.

### **Summary**

There is insufficient evidence in the published, peer-reviewed scientific literature to support the safety or effectiveness of hematopoietic stem-cell transplantation for the treatment of renal cell carcinoma.

## Coding/Billing Information

**Note:** This list of codes may not be all-inclusive.

### Experimental/Investigational/Unproven/Not Covered:

CPT* Codes	Description
38205	Blood-derived hematopoietic progenitor cell harvesting for transplantation, per collection; allogeneic
38206	Blood-derived hematopoietic progenitor cell harvesting for transplantation, per collection; autologous
38207	Transplant preparation of hematopoietic progenitor cells; cryopreservation and storage
38208	Transplant preparation of hematopoietic progenitor cells; thawing of previously frozen harvest, without washing
38209	Transplant preparation of hematopoietic progenitor cells; thawing of previously frozen harvest, with washing
38210	Transplant preparation of hematopoietic progenitor cells; specific cell depletion within harvest, T-cell depletion
38211	Transplant preparation of hematopoietic progenitor cells; tumor cell depletion
38212	Transplant preparation of hematopoietic progenitor cells; red blood cell removal
38213	Transplant preparation of hematopoietic progenitor cells; platelet depletion
38214	Transplant preparation of hematopoietic progenitor cells; plasma (volume) depletion
38215	Transplant preparation of hematopoietic progenitor cells; cell concentration in plasma, mononuclear, or buffy coat layer
38230	Bone marrow harvesting for transplantation
38240	Bone marrow or blood-derived peripheral stem cell transplantation; allogeneic
38241	Bone marrow or blood-derived peripheral stem cell transplantation; autologous
38242	Bone marrow or blood-derived peripheral stem cell transplantation; allogeneic donor lymphocyte infusions

HCPCS Codes	Description
S2140	Cord blood harvesting for transplantation, allogeneic
S2142	Cord blood-derived stem cell transplantation, allogeneic
S2150	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 or pre-and post-transplant care in the global definition

ICD-9-CM Diagnosis Codes	Description
189.0	Malignant neoplasm of kidney and other and unspecified urinary organs; kidney, except pelvis
189.1	Malignant neoplasm of kidney and other and unspecified urinary organs; renal pelvis

\*Current Procedural Terminology (CPT®) © 2010 American Medical Association: Chicago, IL.

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## Policy History

<b>Pre-Merger Organizations</b>	<b>Last Review Date</b>	<b>Policy Number</b>	<b>Title</b>
CIGNA HealthCare	5/15/2008	0322	Stem-Cell Transplant for Renal Cell Carcinoma

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