Molina Clinical Policy
Hematopoietic Stem Cell Transplantation for Wilms Tumor: Policy No. 283

Last Approval: 6/14/2023
Next Review Due By: June 2024

DISCLAIMER

This Molina Clinical Policy (MCP) is intended to facilitate the Utilization Management process. Policies are not a supplementation or recommendation for treatment; Providers are solely responsible for the diagnosis, treatment, and clinical recommendations for the Member. It expresses Molina's determination as to whether certain services or supplies are medically necessary, experimental, investigational, or cosmetic for purposes of determining appropriateness of payment. The conclusion that a particular service or supply is medically necessary does not constitute a representation or warranty that this service or supply is covered (e.g., will be paid for by Molina) for a particular Member. The Member's benefit plan determines coverage – each benefit plan defines which services are covered, which are excluded, and which are subject to dollar caps or other limits. Members and their Providers will need to consult the Member's benefit plan to determine if there are any exclusion(s) or other benefit limitations applicable to this service or supply. If there is a discrepancy between this policy and a Member's plan of benefits, the benefits plan will govern. In addition, coverage may be mandated by applicable legal requirements of a State, the Federal government or CMS for Medicare and Medicaid Members. CMS's Coverage Database can be found on the CMS website. The coverage directive(s) and criteria from an existing National Coverage Determination (NCD) or Local Coverage Determination (LCD) will supersede the contents of this MCP and provide the directive for all Medicare members. References included were accurate at the time of policy approval and publication.

OVERVIEW

Wilms tumor is the most common renal malignancy in children, accounting for nearly 650 new cases in the United States annually (Leslie et al. 2023). The average age at diagnosis is 3 to 5 years (Leslie et al. 2023). It is also the most common pediatric abdominal cancer and the fourth most common pediatric cancer overall (Leslie et al. 2023). Among those under age 15, the annual incidence of renal tumors is approximately 7 cases per 1 million (or 5 percent of all childhood cancers). Wilms tumor is the most common renal malignancy in those under age 15 (95 percent of all cases) (NORD 2019). Renal cell carcinoma (RCC) is diagnosed more in those ages 15 to 19 years old. Two-thirds of Wilms tumor diagnoses are made before the child is age 5; 95 percent of cases are diagnosed before age 10. (Smith & Chintagumpala 2022). Five-year overall survival (OS) rates have dramatically improved with multimodal therapy and now approach 92 percent (Leslie et al. 2023).

Wilms tumor can occur unilaterally (one kidney) or bilaterally (both kidneys); it can spread through the body. Cells begin to develop in the kidneys while a fetus is in the womb. These cells become mature around age 3; children with Wilms tumor have cells that do not mature and cluster into a mass which leads to a tumor in the kidney. Symptoms may be absent in children however, the first sign seen in patients is a large lump or mass in the abdomen that presents with abdominal pain and swelling. Many parents do not notice the mass until it is large enough to be felt, such as when assisting the child with bathing or dressing. Common symptoms in older children include pain, anemia, fever, blood in the urine, nausea or vomiting (or both), constipation, loss of appetite, shortness of breath and high blood pressure. If the tumor ruptures, severe abdominal pain is present. (NORD 2019).

Wilms tumor is more common in Africans and African Americans; it is less common in East Asians. Asian patients also had fewer unfavorable histology tumors, often have lower-stage disease, and have improved survival outcomes – European and North American rates are around the same. Bilateral disease accounts for approximately 5% of patients and is more commonly found in girls. (Leslie et al. 2023).

While the precise cause of Wilms tumor is unknown, there is a tie to genetic alterations involved with the normal embryological development of the genitourinary tract. Approximately 1% of patients have a relative with the disease who is usually not a parent. Genetic markers associated with Wilms tumor include WT1, CTNNB1, and WTX gene alterations (found in about 30% of all Wilms tumors). TP53 (TUMOR PROTEIN 53) and MYNC are additional genes that are associated with Wilms tumor; a poorer prognosis has been linked to TP53 and with the loss of heterozygosity at chromosomes 1p, 1q, 11p15, and 16q. Development of the disease is from persistent metanephric tissue or nephrogenic rests. This may occur in 1% of infantile kidneys, however it usually regresses during childhood. Abnormal metanephric cells are found in up to 100% of cases of bilateral cases but only 35% of unilateral tumors. (Leslie et al. 2023).

Associated syndromes of Wilms tumor are noted below (Leslie et al. 2023):

- **Wilms tumor-aniridia (WAGR) Syndrome** is a rare genetic condition caused by a deletion of a group of genes located on chromosome number 11. It also refers to the presence of Wilms tumor, aniridia, genitourinary anomalies, and intellectual disability. Children with WAGR syndrome have a 50/50 chance of developing

Wilms tumor. Children with this syndrome have a specific chromosomal abnormality in the WT1 gene involved in renal and gonadal development.

- **Denys-Drash Syndrome (or Drash Syndrome)** includes male pseudo-hermaphroditism and progressive renal failure starting in infancy. Renal disease starts with simple proteinuria in newborns and infants – it gradually progresses to nephrotic syndrome and total renal failure. Ninety percent of these patients eventually develop Wilms tumor.
- **Sotos Syndrome**
- **Perlman Syndrome**
- **Trisomy 18 (Edward's Syndrome)**
- **Frasier Syndrome**
- **Bloom Syndrome**
- **Li-Fraumeni Syndrome**
- **Simpson-Golabi-Behmel Syndrome**

Among males, Wilms tumor may present with cryptorchidism, varicocele, or hypospadias. Approximately 10% of females will have congenital uterine anomalies. Other renal congenital abnormalities may also be present (e.g., duplication and renal ectopia). Findings from perilobar nephrogenic rests in children younger under age 1 may have an increased risk of developing a contralateral Wilms tumor.

Treatment and Staging

Management of Wilms tumor is determined by tumor histology, disease stage, and patient age. For many who are newly diagnosed, management includes nephrectomy and chemotherapy with or without radiation therapy. Radiation is reserved for patients with an increased risk of recurrence, advanced stage disease, anaplastic histology, metastases, or relapse. Following treatment, screening for recurrence includes abdominal ultrasound every 3 months for 3 to 6 years (DynaMed 2022). Stages of Wilms Tumor include (NORD 2019):

- **Stage I.** Tumor remained in the kidney without spreading and shows no vascular invasion. Stage I is the most common and accounts for 40-45% of all Wilms tumors.
- **Stage II.** Tumor is confined to the kidney but involves the capsule around the kidney or the collecting system of the kidney. The tumor is surgically removable as it is centralized to the kidney. Accounts for 20% of cases.
- **Stage III.** Tumor has spread beyond the kidney. Margins of resection may contain tumor cells; the cancer may spread to regional lymph nodes near the kidney or along the aorta or inferior vena cava. Also, tumor that spills from the mass (by biopsy or tumor rupture) is also included in this stage.
- **Stage IV.** Tumor has spread through the vascular system; tumor has spread through the blood to organs such as the lungs, liver, brain, or bones. Stage IV accounts for 10-15% of all Wilms tumors.
- **Stage V.** Both kidneys have tumors at the time of diagnosis; accounts for 5-10% of all Wilms tumors.

For additional information regarding the treatment and management of Wilms tumor, access StatPearls

Prognosis

The prognosis of Wilms tumor depends on the tumor stage and histology. Survival rates for cases with favorable histology are 86-99% while cases with unfavorable histology survival rates range 38-84%, depending on the stage. End-stage renal failure occurs in approximately 1% of patients and is typically due to metachronous bilateral tumors. Females with Wilms tumor-aniridia (WAGR) syndrome may develop streaked ovaries and are at an increased risk for developing gonadoblastoma. A poorer prognosis is associated with the following characteristics (Leslie et al. 2023):

- Anaplastic histology in stage II to IV tumors
- Diffuse anaplasia is worse than focal
- Loss of heterozygosity at chromosomes 1p, 1q, 11p15, and 16q or presence of TP53
- Higher stage (most epithelial predominant tumors are stage I; most blastema predominant tumors are stage III and IV)
- Age older than two years
- Higher positive lymph node density

- Large tumor size
- Even small tumor foci can be associated with a poorer prognosis due to resistance to chemotherapy

COVERAGE POLICY

All transplants require prior authorization from the Corporate Transplant Department. Solid organ transplant requests will be reviewed by the Corporate Senior Medical Director or qualified clinical designee. All other transplants will be reviewed by the Corporate Senior Medical Director or covering Medical Director. If the criteria are met using appropriate NCD and/or LCD guidelines, State regulations, and/or MCP policies the Corporate Senior Medical Director's designee can approve the requested transplant.

Office visits with participating Providers do NOT require prior authorization. Providers should see the Member in office visits as soon as possible and without delay. Failure to see the Member in office visits may be considered a serious quality of care concern.

Transplant Evaluation

(Deeg & Sandmaier 2022; NCI 2023; Smith & Chintagumpala 2023; Smith & Chintagumpala 2022; NCCN 2023; CMS 2016; ECOG date unknown; [1-4] NMDP date unknown)

Please see MCP-323 Pre-Transplant Evaluation for additional criteria and information.

Criteria for transplant evaluation include:

1. History and physical examination; **AND**
2. Psychosocial evaluation and clearance:
   a. No behavioral health disorder by history or psychosocial issues:
      - If history of behavioral health disorder, no severe psychosis or personality disorder;
      - Mood/anxiety disorder must be excluded or treated;
      - Member has understanding of surgical risk and post procedure compliance and follow-up required.

   AND
   b. Adequate family and social support.

AND

3. EKG; **AND**
4. Chest x-ray; **AND**
5. Cardiac clearance in the presence of any of the following:
   a. Chronic smokers; **OR**
   b. Members > 50 years age; **OR**
   c. Those with a clinical or family history of heart disease or diabetes.

AND

6. Pulmonary clearance if evidence of pulmonary artery hypertension or chronic pulmonary disease; **AND**
7. Neurological exam and clearance for transplant including **ONE** of the following:
   - Normal exam by H&P; **OR**
   - Abnormal neurological exam with positive findings including **ONE** of the following:
     - Lumbar puncture normal cytology; **OR**
     - Lumbar puncture with cytological exam abnormal: CNS (Central nervous system) disease treated prior to clearance.

AND

8. A Performance Status that includes **ONE** of the following:
    a. Karnofsky score 70-100%; **OR**
    b. Eastern Cooperative Oncology Group (ECOG) Grade 0-2.

AND

9. Lab studies that include:
    a. Complete blood count; kidney profile (blood urea nitrogen, creatinine); electrolytes; calcium; phosphorous; albumin; liver function tests; and coagulation profile (prothrombin time, and partial thromboplastin time); *
    b. Serologic screening for: Human Immunodeficiency Virus (HIV); Epstein Barr virus (EBV); Hepatitis B virus(HBV); Hepatitis C virus (HCV); cytomegalovirus (CMV); rapid plasma reagin (RPR) and/or fluorescent treponemal antibody (FTA): *
        - If HIV positive **ALL** of the following must be met:
            i. CD4 count >200 cells/mm-3 for >6 months; **AND**
            ii. Human Immunodeficiency Virus 1 (HIV-1) ribonucleic acid undetectable; **AND**
            iii. On stable anti-retroviral therapy >3 months; **AND**
            iv. No other complications from Acquired Immunodeficiency Syndrome (AIDS)(e.g., opportunistic infection, including aspergillus, tuberculosis, coccidioides mycosis, resistant fungal infections, Kaposi's sarcoma, or other neoplasm).
    c. Urine drug screen if Member is current or gives a history of past drug abuse.

AND

10. Colonoscopy (if indicated or if Member is age ≥ 45) with complete workup and treatment of abnormal results as indicated; an initial screening colonoscopy after initial negative screening requires a follow-up colonoscopy every 10 years). *

AND

11. Gynecological examination with Pap smear for women ages ≥ 21 to ≤ 65 years of age or if indicated (not indicated in women who have had a total abdominal hysterectomy or a total vaginal hysterectomy) within the last three years with complete workup and treatment of abnormal results as indicated. *

Within the last 12 months:

1. Dental examination or oral exam showing good dentition and oral care or no abnormality on panorex or plan for treatment of problems pre- or post-transplant; **AND**
2. Mammogram (if indicated or > age 40) with complete workup and treatment of abnormal results as indicated; * **AND**
3. Prostate Specific Antigen (PSA) if history of prostate cancer or previously elevated PSA with complete workup and treatment of abnormal results as indicated. *

* Participating Centers of Excellence may waive these criteria.

Criteria for Autologous Hematopoietic Stem Cell Transplantation (HSCT)

Autologous (HSCT **may be considered medically necessary** and may be authorized for the treatment of Wilms tumor when the following criteria are met:

1. All transplant criteria are met:
    a. Initially treated with four or more chemotherapeutic agents and disease is recurrent or refractory: Defined as a tumor that does not achieve a complete remission after initial standard-dose chemotherapy; **OR**
    b. Multiple relapses or progression on salvage therapy.

AND

2. The requesting transplant recipient should not have any of the following absolute contraindications:

a. Cardiac, pulmonary, and nervous system disease that cannot be corrected and is a prohibitive risk for surgery; **OR**
b. Malignant neoplasm with a high risk for reoccurrence, non-curable malignancy (excluding localized skin cancer); **OR**
c. Systemic and/or uncontrolled infection; **OR**
d. AIDS (CD4 count < 200cells/mm3); **OR**
e. Unwilling or unable to follow post-transplant regimen:
   - Documented history of non-compliance
   - Inability to follow through with medication adherence or office follow-up

OR

f. Chronic illness with one year or less life expectancy; **OR**
g. Limited, irreversible rehabilitation potential; **OR**
h. Active untreated substance abuse issues, requires documentation supporting free from addiction for minimally 6 months if previous addiction was present; **OR**
i. No adequate social/family support.

AND

3. The requesting transplant recipient should be evaluated carefully and potentially treated if any of the relative contraindications below are present. (Irreversible lung disease patients need consultation and clearance by a Pulmonologist before considering transplantation).
   a. Smoking, documentation supporting free from smoking for 6 months; **OR**
   b. Active peptic ulcer disease; **OR**
   c. Active gastroesophageal reflux disease; **OR**
   d. Cerebrovascular accident (CVA) with long term impairment that is not amendable to rehabilitation or a patient with CVA/transient ischemic attack within past 6 months; **OR**
   e. Obesity with body mass index of >30 kg/m^2 may increase surgical risk; **OR**
   f. Chronic liver disease such as Hepatitis B/C/D, or cirrhosis which increases the risk of death from sepsis and hepatic failure requires consultation by a gastroenterologist or hepatologist; **OR**
   g. Gall bladder disease requires ultrasound of the gall bladder with treatment prior to transplantation.

Criteria for Subsequent HSCT

HSCT **may be considered medically necessary** and may be authorized after *the first prior HSCT* has occurred only one time for members with Wilms tumor who meet all the above criteria for transplant and have **ANY** of the following:

1. Primary graft failure indicated by no signs of engraftment* by 42 days after the transplant; **OR**
2. Failure to engraft. *

*Note: Engraftment is defined as the first 3 consecutive days on which the absolute neutrophil count (ANC) exceeds 5 x 10^9/L or > ANC500 at any time after transplantation.

Continuation of Therapy

When extension of a previously approved transplant authorization is requested, review using updated clinical information is appropriate.

1. If Molina Healthcare has authorized prior requests for transplantation **ALL** the following information is required for medical review:
   a. Presence of no absolute contraindication as listed above; **AND**
   b. History and physical within the last 12 months; **AND**
   c. Kidney profile within the last 12 months; **AND**
   d. Cardiac update if history of cardiac disease within two years (≥ 50 years of age); **AND**
   e. Psychosocial evaluation or update within the last 12 months; **AND**
   f. Per initial and updated history and physical, any other clinically indicated tests and/or scans as determined by transplant center physician or Molina Medical Director.

2. If authorized prior requests for transplantation were obtained from another insurer, **ALL** the following information is required for medical review:
   a. Authorization letter/documentation from previous insurer; **AND**
   b. Presence of no absolute contraindication as listed above; **AND**
   c. History and physical within the last 12 months; **AND**
   d. Cardiac update if history of cardiac disease within two years (≥ 50 years of age); **AND**
   e. Psychosocial evaluation or update within the last 12 months; **AND**
   f. Per initial and updated history and physical, any other clinically indicated tests and/or scans as determined by transplant center physician or Molina Medical Director.

For Members with Significant or Daily Cannabis Use

1. Documentation of compliance with a physician prescribed and managed program of abstinence, and a reasonable expectation that the Member will be abstinent from cannabis use during the transplant and immediate post-transplant time period. Daily cannabis use is an absolute contraindication for both transplant and pre-transplant evaluation unless there is a state mandate applicable for medical cannabis use and transplants, and there is documentation of Member compliance with a physician prescribed plan of care for prescribed cannabis use.
2. If the Member's cannabis use follows a formal, State-based program for managed medical cannabis, the request should include:
   - Documentation of the Plan of Care for medical cannabis (including the medical decision making that supports the use of medical cannabis); **AND**
   - Transplant Provider agreement with the Plan of Care (including agreement to be accountable for managing the Member's use of medical cannabis).

Limitations and Exclusions

1. Autologous HSCT when the above criteria are not met.
2. Allogeneic HSCT.
3. Tandem autologous HSCT.
4. Hematopoietic stem cell collection, storage and freezing for a future unplanned transplant.

DOCUMENTATION REQUIREMENTS. Molina Healthcare reserves the right to require that additional documentation be made available as part of its coverage determination; quality improvement; and fraud; waste and abuse prevention processes. Documentation required may include, but is not limited to, patient records, test results and credentials of the provider ordering or performing a drug or service. Molina Healthcare may deny reimbursement or take additional appropriate action if the documentation provided does not support the initial determination that the drugs or services were medically necessary, not investigational, or experimental, and otherwise within the scope of benefits afforded to the member, and/or the documentation demonstrates a pattern of billing or other practice that is inappropriate or excessive.

SUMMARY OF MEDICAL EVIDENCE

Spreafico et al. (2021) researched a critical (non-redundant) role that genes for Wilms tumor play in early nephrogenesis. To improve patient outcomes, it is imperative to understand decades of research in targeting multiple genes and cellular control pathways in the development of Wilms tumor. Ninety percent of children with Wilms tumor found curative therapy, including patients with a spread of the disease. Current treatments for Wilms tumor include conventional cytotoxic chemotherapy and surgery, and radiation therapy when applicable. The authors noted areas of future research should focus on advanced imaging to capture tumor composition, optimizing irradiation techniques to reduce target volumes, and evaluation of newer surgical procedures.

The typical course of treatment for Wilms tumor is nephrectomy then systemic chemotherapy. However, certain protocols initiate chemotherapy first and then perform the nephrectomy. To ensure that the cancer has not spread, the opposite kidney may be explored. This may be unnecessary for low-stage tumors with favorable histology when imaging is negative. In addition, lymph nodes surrounding the aorta are sampled for staging to improve survival. Due to improvements in chemotherapy, most children now survive. Five-year survival in the United States is 92% however, in other parts of the world with less resources the five-year survival rate is 78%. Use of postoperative radiation may or

may not be recommended based on tumor histology and any spread. For patients without metastases who will receive radiation, initiation of therapy within 14 days of surgery improves OS. Combination chemotherapy is typically recommended for aggressive disease. Initial chemotherapy usually includes vincristine and dactinomycin – doxorubicin, cyclophosphamide, etoposide, and carboplatin may also be used. (Leslie et al. 2023).

Chintagumpala et al. (2022) reported on the Children's Oncology Group AREN0534 Study which focused on improving outcomes and survival of patients with bilateral Wilms tumors by using preoperative chemotherapy. The authors found that a risk-adapted treatment approach for this patient population has excellent outcomes. Treatment was limited in duration and postoperative therapy was tailored based on histopathologic response. Patients received treatment with vincristine, dactinomycin, and doxorubicin for 6 or 12 weeks followed by surgery. Postoperative therapy was prescribed based on the highest risk tumor according to the International Society of Pediatric Oncology classification and the Children's Oncology Group staging system. The analysis involved data from 180 evaluable children. The 4-year event-free survival (EFS) and OS rates were 81% and 95%, respectively.

- Seven patients who were diagnosed with completely necrotic tumors experienced a 4-year EFS rate of 100%.
- Of 118 patients who had tumors (intermediate-risk histopathology), the 4-year EFS and OS rates were 82% and 97%, respectively.
- Fourteen patients with blastemal-type tumors had 4-year EFS and OS rates of 79% and 93%, respectively.
- Eighteen patients who had diffuse anaplasia had 4-year EFS and OS rates of 61% and 72%, respectively; the 4-year EFS and OS rates of 7 patients who had focal anaplasia were 71% and 100%, respectively.
- There was no difference in the outcomes of patients who had different histopathologic subtypes within the intermediate-risk group.

Leslie et al. (2023) state that radiation and chemotherapy can increase survival rates for patients with higher-stage Wilms tumors. However, this may also be responsible for an increased risk of future secondary malignancies. An increased radiation therapy risk has been established for bone, breast, colon, and thyroid cancers and an increased risk of osteoporosis. Chemotherapy with dactinomycin, doxorubicin, and vincristine contributes to a higher risk of secondary malignancies as well as specific toxicities such as hearing (carboplatin), cardiac function (Adriamycin), and peripheral neuropathy (vincristine).

Imaging

Aldrink et al. (2019) reviewed the current evidence-based treatment standards for children with Wilms tumor. The summary includes clinical trials completed by the Children's Oncology Group. Initial imaging of a renal mass typically includes abdominal ultrasound to identify the organ of origin, followed by cross-sectional chest/abdominal/pelvis imaging with either CT (Computed Tomography) or MRI (Magnetic Resonance Imaging) to further evaluate the primary site and to identify any metastases. These scans can provide additional data including the status of the contralateral kidney, tumor involvement of the renal veins or inferior vena cava, presence of retroperitoneal adenopathy, preoperative tumor rupture, and the existence of ascites. The authors note that imaging characteristics may not always correlate with operative or pathologic findings and should not replace surgical exploration and tissue analysis for local and disease staging. Imaging with 3-D computer reformatting and printing models may also aid in planning operative approaches, especially for patients in whom nephron sparing surgery is recommended.

Hematopoietic Stem Cell Transplant

Spreafico et al. (2020) examined data on subgroups of patients with Wilms tumor, in particular those who suffer from relapse. Patient treatment plans that included high-dose chemotherapy (HDT) with autologous hematopoietic cell transplantation (aHCT) were analyzed. Data from the European Blood and Marrow Transplantation Registry included children (n=69) receiving aHCT as consolidation of first or second remission (after first relapse). Different HDT regimens were administered – most with either melphalan-containing (n = 34) or thiotepa-containing (n = 14). For the total population, the 5-year OS and EFS probabilities were 0.67 and 0.63, respectively and included a median observation time of 7.8 years); for children transplanted in first remission, OS and EFS were 0.69 and 0.72. Using a given pretransplant regimen (e.g., melphalan alone versus regimens with multiple drugs) did not appear to influence OS and EFS probability after aHCT, but significantly influenced platelet engraftment (more delayed with thiotepa).

Malogolowkin et al. (2017) described the outcomes of 253 patients with Wilms tumor who experienced relapse who received high-dose chemotherapy (HDT) followed by aHCT. Data was collected between 1990 and 2013 by the Center for International Blood and Marrow Transplantation Research. The 5-year estimates for EFS and OS were 36% and 45%, respectively. Relapse of primary disease was the cause of death in 81% of the population. Data suggest that HDT followed by aHCT for relapsed Wilms tumor is well tolerated and outcomes are similar to other reports in the medical literature.

Prognosis and Potential Treatments

Leslie et al. (2023) state that survival of patients after undergoing treatment is about 80-90%; the addition of radiation has increased survival compared to the use of surgery alone. Highlights of current research include:

- Research continues regarding how to prevent drug toxicity associated with combination chemotherapy. Most children with one kidney can live a normal life.
- Female adult survivors of Wilms tumor have an increased risk of developing invasive breast cancer before age 40 – risk was highest in those who previously received chest radiation.
- A risk of delayed development of Wilms in the contralateral kidney is found in approximate 1% of patients; this is usually within two years of initial discovery of Wilms tumor in the original kidney. The cause may be due to persistent focal nephrogenic rests in the contralateral kidney.
- Risk of recurrence in patients with anaplastic histology is approximately 50%; among patients with low-risk histological features, risk of recurrence is 15%.
- Approximately 15% of patients with Wilms are at risk for a recurrence; a majority of cases these will be identified within the first 2 years after surgery.

Circulating tumor DNA (deoxyribonucleic acid) may be a useful diagnostic tool; however, it is considered investigational for diagnosing pediatric tumors. Chemotherapy drugs (topotecan and irinotecan) show promise while stem cell transplants and targeted therapies show promising new approaches to treatment for Wilms tumor.

Long-term survival for patients in specific subgroups may experience poor EFS and are at increased risk for significant late therapy effects. These subgroups include those who relapse; those with anaplastic histology; and those with bilateral or unilateral high-risk tumors. Chronic health conditions secondary to treatment impact nearly 25% Wilms tumor survivors – this includes renal failure, infertility, cardiac toxicity, restrictive pulmonary disease, and the development of subsequent malignancies. (Aldrink et al. 2019).

CODING & BILLING INFORMATION

CPT (Current Procedural Terminology) Codes

CPT	Description
	Collection Codes
38205	Blood-derived hematopoietic progenitor cell harvesting for transplantation, per collection; allogeneic
38206	Blood-derived hematopoietic progenitor cell harvesting for transplantation, per collection; autologous
38230	Bone marrow harvesting for transplantation; allogeneic
38232	Bone marrow harvesting for transplantation; autologous
	Cell Processing Services
38207	Transplant preparation of hematopoietic progenitor cells; cryopreservation and storage
38208	Transplant preparation of hematopoietic progenitor cells; thawing of previously frozen harvest, without washing, per donor
38209	Transplant preparation of hematopoietic progenitor cells; thawing of previously frozen harvest, with washing, per donor
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
	Cell Infusion codes
38240	Hematopoietic progenitor cell (HPC); allogeneic transplantation per donor
38241	Hematopoietic progenitor cell (HPC); autologous transplantation
38242	Allogeneic lymphocyte infusions
38243	Hematopoietic progenitor cell (HPC); HPC boost

HCPCS (Healthcare Common Procedure Coding System) Codes

HCPCS	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 of pre-and post-transplant care in the global definition

CODING DISCLAIMER. Codes listed in this policy are for reference purposes only and may not be all-inclusive. Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement. Listing of a service or device code in this policy does not guarantee coverage. Coverage is determined by the benefit document. Molina adheres to Current Procedural Terminology (CPT®), a registered trademark of the American Medical Association (AMA). All CPT codes and descriptions are copyrighted by the AMA; this information is included for informational purposes only. Providers and facilities are expected to utilize industry standard coding practices for all submissions. When improper billing and coding is not followed, Molina has the right to reject/deny the claim and recover claim payment(s). Due to changing industry practices, Molina reserves the right to revise this policy as needed.

APPROVAL HISTORY

6/14/2023	Policy reviewed, changes to the coverage section include “Pre-Transplant Evaluation” changed to “Transplant Evaluation,” new criteria 7b, clarification edit to criteria #8 that only one of the sub-criteria need to be met, pertinent tests added to second sub-criteria for physician plan and/or treatment, removed abnormal serology statement under criteria 9b, criteria 10 changed to age 45 years, and added an asterisk to criteria 11 to denote it may be waived by a participating Center of Excellence. Grammatical edits to Disclaimer section and “Documentation Requirements” under Coverage Policy section. Replaced “marijuana” with “cannabis.” Supplemental Information section removed. Added codes 38221, 38222, 86812, 86813, 86816, 86817 and code descriptions updated for other codes.ICD-10 codes removed. Policy reviewed in May 2023 by a Dane Street practicing, board-certified physician in Hematology.
6/8/2022	Policy reviewed, no changes to criteria; included section on marijuana use; updated Overview, Summary of Medical Evidence and Reference sections.
7/10/2018, 6/19/2019, 6/17/2020, 6/9/2021	Policy reviewed, no changes, updated references.
1/5/2017	New policy.

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