

Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

Pembrolizumab (Keytruda®)

NDC CODE(S) 00006-3026-XX KEYTRUDA 100 MG/4ML Solution (MERCK SHARP & DOHME)

DESCRIPTION

Pembrolizumab is a human programmed death receptor (PD-1)-blocking humanized monoclonal antibody. It blocks the interaction between PD-1 and its ligands, PD-L1 and PD-L2 by binding to the PD-1 receptor which is found on T-cells. This releases PD-1 pathway-mediated inhibition of the immune response, including the anti-tumor immune response, which results in decreased tumor growth.

POLICY

- Pembrolizumab for the treatment of the following is considered **medically necessary** if the medical appropriateness criteria are met: **(See Medical Appropriateness below.)**
 - Adrenal Gland Tumors
 - Anal Carcinoma
 - Central Nervous System Cancers
 - Cervical Cancer
 - Cutaneous Squamous Cell Carcinoma (cSCC)
 - Diffuse Large B-Cell Lymphoma (see Primary Mediastinal Large B-Cell Lymphoma [PMBCL])
 - Endometrial Carcinoma (Uterine Cancer)
 - Esophageal Cancer
 - Gastric or Gastroesophageal Junction Cancer
 - Gestational Trophoblastic Neoplasia
 - Head and Neck Cancers
 - Hepatocellular Carcinoma (HCC)
 - Hodgkin Lymphoma, Classical
 - Melanoma, Cutaneous
 - Melanoma, Uveal
 - Merkel Cell Carcinoma
 - Mesothelioma
 - Microsatellite Instability-High (MSI-H)/ Mismatch Repair Deficient (dMMR) Cancers
 - Mycosis Fungoides/Sézary Syndrome
 - Non-Small Cell Lung Cancer (NSCLC)
 - Primary Mediastinal Large B-Cell Lymphoma (PMBCL)
 - Renal Cell Carcinoma (RCC) (Kidney Cancer)
 - Soft Tissue Sarcoma
 - T-Cell Lymphoma/Extranodal NK, nasal type
 - Thymic Carcinoma
 - Triple Negative Breast Cancer (TNBC)
 - Tumor Mutational Burden-High (TMB-H) Cancer
 - Urothelial Carcinoma (Bladder Cancer)
 - Vulvar Cancer
- Pembrolizumab for the treatment of other conditions/diseases is considered **investigational**.

MEDICAL APPROPRIATENESS

INITIAL APPROVAL CRITERIA



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

- Patient is at least 18 years of age (unless otherwise specified); **AND**

Universal Criteria

- Patient has not received previous therapy with a programmed death (PD-1/PD-L1)-directed therapy (e.g., cemiplimab, avelumab, nivolumab, atezolizumab, durvalumab, etc.) unless otherwise specified; **AND**

Cutaneous Melanoma

- Used as first-line therapy as a single agent for unresectable or metastatic disease; **OR**
- Used as subsequent therapy for unresectable or metastatic* disease after disease progression or maximum clinical benefit from BRAF targeted therapy; **AND**
 - Used as a single agent; **AND**
 - Anti-PD-1 immunotherapy was not previously used; **OR**
 - Used as re-induction therapy in patients who experienced disease control (*i.e., complete response, partial response, or stable disease with no residual toxicity*) from prior anti-PD-1 immunotherapy but subsequently have disease progression/relapse > 3 months after treatment discontinuation; **OR**
 - Used in combination with ipilimumab; **AND**
 - Used after progression on single-agent anti-PD-1 immunotherapy and combination ipilimumab/anti-PD-1 immunotherapy not previously used; **OR**
 - Used as re-induction therapy in patients who experienced disease control (*i.e., complete response, partial response, or stable disease with no residual toxicity*) from prior combination ipilimumab/anti-PD-1 immunotherapy, but subsequently have disease progression/relapse > 3 months after treatment discontinuation; **OR**
- Used as a single agent for adjuvant treatment; **AND**
 - Patient has lymph node involvement and has undergone complete resection, complete lymph node dissection (CLND), therapeutic lymph node dissection (TLND), or nodal basin ultrasound surveillance; **OR**
 - Patient has satellite/in-transit metastases or recurrence and has no evidence of disease after complete excision; **OR**
 - Patient has undergone TLND and/or complete resection of nodal recurrence; **OR**
 - Patient has undergone complete resection of distant metastatic disease

**Metastatic disease includes stage III clinical satellite/in transit metastases or local satellite/in-transit recurrence in patients with limited resectable and unresectable disease, unresectable nodal recurrence, and disseminated (unresectable) distant metastatic disease*

Uveal Melanoma

- Used as a single agent; **AND**
- Patient has distant metastatic disease

Gastric Cancer

- Patient has recurrent, unresectable (or is not a candidate for surgery) locally advanced, or metastatic disease; **AND**
 - Used as a single agent: **AND**
 - Patient has adenocarcinoma histology; **AND**
 - Tumor expresses PD-L1 (Combined Positive Score [CPS] ≥ 1) as determined by an FDA-approved or CLIA compliant test \diamond ; **AND**
 - Patient progressed on or after at least two prior systemic treatments

Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

Esophageal Cancer **or Gastroesophageal Junction Cancer**

- Used in combination with platinum- and fluoropyrimidine-based chemotherapy: **AND**
 - Used as first-line therapy for recurrent, locally advanced, or metastatic disease; **AND**
 - Disease is not amenable to surgical resection or definitive chemoradiation; **OR**
- Used as a single agent; **AND**
 - Patient has recurrent, unresectable (or is not a candidate for surgery) locally advanced, or metastatic disease; **AND**
 - Patient has squamous cell carcinoma; **AND**
 - Tumor expresses PD-L1 (CPS ≥ 10) as determined by an FDA-approved or CLIA compliant test❖; **AND**
 - Patient progressed on or after at least one prior systemic treatment; **OR**
 - Patient has adenocarcinoma; **AND**
 - Tumor expresses PD-L1 (CPS ≥ 1) as determined by an FDA-approved or CLIA compliant test❖; **AND**
 - Used as palliative third-line or subsequent therapy

Merkel Cell Carcinoma (MCC)

- Patient is at least 2 years of age; **AND**
- Used as a single agent; **AND**
 - Patient has recurrent disease AND both curative surgery and curative radiation therapy are not feasible; **OR**
 - Patient has recurrent locally advanced or metastatic disease

Non-Small Cell Lung Cancer (NSCLC)

- Used for stage III disease; **AND**
 - Used as first-line therapy as a single-agent in patients who are not candidates for surgical resection or definitive chemoradiation with tumors that are expressing PD-L1 (TPS $\geq 1\%$) as determined by an FDA-approved or CLIA compliant test❖ and with no EGFR or ALK genomic tumor aberrations; **OR**
- Used for recurrent, advanced, or metastatic disease (excluding locoregional recurrence or symptomatic local disease without evidence of disseminated disease) or mediastinal lymph node recurrence with prior radiation therapy; **AND**
 - Used as first-line therapy; **AND**
 - Used for one of the following:
 - PD-L1 expression-positive (TPS $\geq 1\%$) tumors, as detected by an FDA or CLIA compliant test❖ that are EGFR, ALK, ROS1, BRAF, NTRK1/2/3 gene fusion, MET exon 14 skipping mutation, and RET rearrangement negative*
 - Patients with performance status (PS) 0-1 who have EGFR, ALK, ROS1, BRAF, NTRK1/2/3 gene fusion, MET exon 14 skipping mutation, and RET rearrangement negative* tumors and PD-L1 expression $< 1\%$
 - Patients with PS 0-1 who are positive for one of the following molecular biomarkers: BRAF V600E mutation, NTRK1/2/3 gene fusion, MET exon 14 skipping mutation, or RET rearrangements; **AND**
 - Used in combination with pemetrexed AND either carboplatin or cisplatin for non-squamous cell histology; **OR**
 - Used in combination with carboplatin AND either paclitaxel or albumin-bound paclitaxel for squamous cell histology; **OR**
 - Used as single agent therapy (*for PD-L1 expression-positive tumors ONLY*); **OR**

Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

- Used as subsequent therapy; **AND**
 - Used in patients with tumors expressing PD-L1 (TPS $\geq 1\%$) as determined by an FDA-approved or CLIA compliant test **❖**; **AND**
 - Used as single agent therapy; **OR**
 - Used for one of the following:
 - Patients with PS 0-1 who have EGFR, ALK, or ROS1 positive tumors and prior targeted therapy§
 - Patients with PS 0-1 who are positive for one of the following molecular biomarkers: BRAF V600E mutations, NTRK1/2/3 gene fusions, MET exon 14 skipping mutation or RET rearrangements; **AND**
 - Used in combination with carboplatin AND either paclitaxel or albumin-bound paclitaxel for squamous cell histology; **OR**
 - Used in combination with pemetrexed AND either carboplatin or cisplatin for non-squamous cell histology; **OR**
- Used as continuation maintenance therapy in patients who have achieved tumor response or stable disease following initial therapy; **AND**
 - Used in combination with pemetrexed following a first-line pembrolizumab/pemetrexed/(carboplatin or cisplatin) regimen for disease of nonsquamous cell histology; **OR**
 - Used as a single agent following a first-line pembrolizumab/carboplatin/(paclitaxel or nab-paclitaxel) regimen for disease of squamous cell histology; **OR**
 - Used as a single agent following a first-line pembrolizumab monotherapy regimen

** Note: If there is insufficient issue to allow testing for all of EGFR, ALK, ROS1, BRAF, NTRK1/2/3, MET and RET, repeat biopsy and/or plasma testing should be done. If these are not feasible, treatment is guided by available results and, if unknown, these patients are treated as though they do not have driver oncogenes.*

Squamous Cell Carcinoma of the Head and Neck (SCCHN)

- Patient has unresectable, recurrent/persistent, or metastatic disease; **AND**
 - Used as first-line therapy; **AND**
 - Used as a single-agent for tumors expressing PD-L1 (CPS ≥ 1) as determined by an FDA-approved or CLIA-compliant test **❖**; **OR**
 - Used in combination with fluorouracil and a platinum chemotherapy agent; **OR**
 - Used as subsequent therapy; **AND**
 - Used as a single-agent therapy for disease that has progressed on or after platinum-containing chemotherapy; **OR**
 - Used in combination with fluorouracil and a platinum chemotherapy agent in patients with non-nasopharyngeal disease and performance status 0-1

Adult Classical Hodgkin Lymphoma (cHL)

- Used as a single agent for relapsed or refractory disease

Pediatric Classical Hodgkin Lymphoma

- Patient is at least 2 years of age*; **AND**
- Used as a single agent; **AND**
 - Patient has refractory disease; **OR**
 - Patient has relapsed disease after two or more prior lines of therapy; **OR**
 - Used in patients heavily pretreated with platinum or anthracycline-based chemotherapy; **OR**



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

- Used as subsequent therapy in patients with an observed decrease in cardiac function

* *Pediatric Classical Hodgkin Lymphoma may be applicable to adolescent and young adult (AYA) patients up to the age of 39 years.*

Primary Mediastinal Large B-Cell Lymphoma (PMBCL)

- Patient is at least 2 years of age; **AND**
- Used as single agent; **AND**
- Patient has relapsed or refractory disease; **AND**
- Patient does not require urgent cytoreductive therapy

Urothelial Carcinoma (Bladder Cancer)

- Patient has Bacillus Calmette-Guerin (BCG)-unresponsive, high-risk, non-muscle invasive bladder cancer (NMIBC) defined as one of the following:
 - Persistent disease despite adequate BCG therapy*; **OR**
 - Disease recurrence after an initial tumor free state following an adequate BCG course of therapy*; **OR**
 - T1 disease following a single induction course of BCG; **AND**
 - Patient has carcinoma in situ (CIS); **AND**
 - Patient is ineligible for or has elected not to undergo cystectomy; **AND**
 - Used as a single agent

* *Adequate BCG therapy is defined as administration of at least five of six doses of an initial induction course AND at least two of three doses of maintenance therapy or at least two of six doses of a second induction course*

- **OR** -

- Used as a single agent; **AND**
- Patient has one of the following diagnoses:
 - Locally advanced or metastatic urothelial carcinoma; **OR**
 - Muscle invasive bladder cancer with local recurrence or persistent disease in a preserved bladder; **OR**
 - Metastatic or local bladder cancer recurrence post-cystectomy; **OR**
 - Primary carcinoma of the urethra; **AND**
 - Used for metastatic or recurrent disease (*excluding recurrence of stage T3-4 disease or palpable inguinal lymph nodes*); **OR**
 - Used for clinical stage T3-4, cN1-2 disease, or cN1-2 palpable inguinal lymph nodes (*first-line therapy only*); **AND**
 - Metastatic upper genitourinary (GU) tract tumors; **OR**
 - Metastatic urothelial carcinoma of the prostate; **AND**
- Used as subsequent therapy after previous platinum treatment*; **OR**
- Used as first-line therapy in cisplatin-ineligible patients*; **AND**
 - Patient is carboplatin-ineligible*; **OR**
 - Tumors express PD-L1 (CPS ≥ 10) as determined by an FDA-approved or CLIA-compliant test ❖

* *Note:*

- *If platinum treatment occurred greater than 12 months ago, the patient should be re-treated with platinum-based therapy if the patient is still platinum eligible (see below for cisplatin- or carboplatin-ineligible comorbidities).*
 - *Cisplatin-ineligible comorbidities may include the following: GFR < 60 mL/min, PS ≥ 2 , hearing loss of ≥ 25 decibels (dB) at two contiguous frequencies, or grades ≥ 2 peripheral neuropathy. Carboplatin may be substituted for cisplatin particularly in those patients with a GFR < 60 mL/min or a PS of 2.*
 - *Carboplatin-ineligible comorbidities may include the following: GFR < 30 mL/min, PS ≥ 3 , grade ≥ 3 peripheral neuropathy, or NYHA class ≥ 3 , etc.*



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

Cervical Cancer

- Used as a single agent; **AND**
- Patient has persistent, recurrent, or metastatic disease; **AND**
- Tumor expresses PD-L1 (e.g., CPS \geq 1) as determined by an FDA-approved or CLIA-compliant test \diamond ; **AND**
- Disease has progressed on or after chemotherapy

Microsatellite Instability-High (MSI-H) Cancer

- Patient must be at least 2 years of age; **AND**
- Used as a single agent; **AND**
- Patient's disease must be microsatellite instability-high (MSI-H) or mismatch repair deficient (dMMR); **AND**
- Pediatric patients must not have a diagnosis of MSI-H central nervous system cancer; **AND**
- Patient has one of the following cancers:
 - Colorectal Cancer
 - Used as first-line therapy in patients with unresectable (or medically inoperable) or metastatic disease; **OR**
 - Used as primary treatment for resectable liver and/or lung metastases (Rectal Cancer only); **OR**
 - Used as neoadjuvant therapy for resectable liver and/or lung metastases (Colon Cancer only); **OR**
 - Used for unresectable metastases that remain unresectable after primary systemic therapy; **OR**
 - Used for disease progression on non-intensive therapy with improvement in functional status (excluding patients previously treated with fluoropyrimidine); **OR**
 - Used for unresectable, advanced, or metastatic disease that has progressed following treatment with a fluoropyrimidine, oxaliplatin, and/or irinotecan
 - Pancreatic Adenocarcinoma
 - Used as subsequent therapy for locally advanced or metastatic disease after progression; **OR**
 - Used for recurrent or metastatic disease after resection; **OR**
 - Used as first-line therapy for metastatic disease for in patients with poor performance status (i.e., ECOG \geq 2)
 - Bone Cancer (Ewing Sarcoma, Chondrosarcoma [excluding dedifferentiated or mesenchymal subtypes], or Osteosarcoma [excluding high-grade undifferentiated pleomorphic sarcoma])
 - Used for unresectable or metastatic disease that has progressed following prior treatment; **AND**
 - Patient has no satisfactory alternative treatment options
 - Gastric Adenocarcinoma OR Esophageal/Gastroesophageal Junction Adenocarcinoma or Squamous Cell Carcinoma
 - Used as subsequent therapy for unresectable (or not a candidate for surgery) locally advanced, recurrent, or metastatic disease
 - Ovarian Cancer (epithelial ovarian, fallopian tube, and primary peritoneal cancers)
 - Patient has carcinosarcoma, clear cell, endometrioid, mucinous, or serous histology; **AND**
 - Used for patients with persistent or recurrent disease; **AND**
 - Patient is not experiencing an immediate biochemical relapse (i.e., rising CA-125 with no radiographic evidence of disease)
 - Uterine Cancer (endometrial carcinoma)
 - Patient has recurrent, metastatic, or high-risk disease that has progressed following prior treatment
 - Penile Cancer
 - Used as subsequent treatment of unresectable or metastatic disease that has progressed following prior treatment; **AND**
 - Patient has no satisfactory alternative treatment options
 - Testicular Cancer



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

- Used as third-line therapy
- Hepatobiliary Adenocarcinoma (gallbladder cancer, intra-/extra-hepatic cholangiocarcinoma)
 - Used as primary treatment for unresectable or metastatic disease; **OR**
 - Used for unresectable or metastatic disease that has progressed following prior treatment
- Vulvar Squamous Cell Carcinoma
 - Used for advanced, recurrent, or metastatic disease as second-line therapy
- Cervical Cancer
 - Used as second-line therapy for persistent, recurrent, or metastatic disease
- Small Bowel Adenocarcinoma or Advanced Ampullary Cancer
 - Used for advanced or metastatic disease
- Breast Cancer
 - Used for recurrent, metastatic, or unresectable disease that has progressed following prior treatment; **AND**
 - Patient has no satisfactory alternative treatment options
- Occult Primary/Cancer of Unknown Primary (CUP)
 - Used in symptomatic patients with PS 1-2 OR asymptomatic patients with PS 0 and aggressive disease; **AND**
 - Patient has adenocarcinoma or carcinoma not otherwise specified; **AND**
 - Patient has one of the following:
 - Axillary involvement in men if clinically indicated
 - Lung nodules or breast marker-negative pleural effusion
 - Resectable liver disease
 - Peritoneal mass or ascites with non-ovarian histology
 - Retroperitoneal mass of non-germ cell histology in selected patients
 - Unresectable liver disease or disseminated metastases
- Very Advanced Squamous Cell Carcinoma of the Head and Neck (SCCHN)
 - Patient has non-nasopharyngeal cancer
- Prostate Cancer
 - Patient has castration-resistant metastatic disease; **AND**
 - Patient will continue androgen deprivation therapy (ADT); **AND**
 - Patient previously received docetaxel or novel hormone therapy; **OR**
 - Patient previously received docetaxel and novel hormone therapy; **AND**
 - Patient does not have visceral metastases
- Other Solid Tumor (e.g., adrenal gland tumors, poorly differentiated-high grade neuroendocrine tumors [NET], large or small cell carcinoma [other than lung], etc.)
 - Used for unresectable or metastatic disease that progressed following prior treatment; **AND**
 - Patient has no satisfactory alternative treatment options

Vulvar Squamous Cell Carcinoma

- Used as a single agent; **AND**
- Patient has advanced, recurrent, or metastatic disease; **AND**
- Tumor expresses PD-L1 (CPS ≥ 1) as determined by an FDA-approved or CLIA-compliant test \diamond ; **AND**
- Used as second-line therapy for disease progression on or after chemotherapy

Thymic Carcinoma

- Used as a single agent; **AND**
 - Used, as first line therapy or postoperative treatment, in patients who are unable to tolerate first-line combination regimens; **OR**

Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

- Used as second-line therapy for unresectable or metastatic disease

Malignant Pleural Mesothelioma

- Used as subsequent therapy as a single agent

Central Nervous System (CNS) Cancer

- Used as single agent therapy; **AND**
- Primary tumor is due to melanoma or PD-L1 positive non-small cell lung cancer (NSCLC); **AND**
 - Used as initial treatment in patients with small asymptomatic brain metastases; **OR**
 - Used for relapsed disease in patients with limited brain metastases and stable systemic disease or reasonable treatment options; **OR**
 - Patient has recurrent limited brain metastases; **OR**
 - Used for recurrent disease in patients with extensive brain metastases and stable systemic disease or reasonable systemic treatment options

T-Cell Lymphoma/Extranodal NK

- Patient has relapsed or refractory nasal type disease; **AND**
- Disease progressed following additional treatment with an alternative asparaginase-based chemotherapy regimen not previously used; **AND**
- Participation in a clinical trial is unavailable

Anal Carcinoma

- Patient has metastatic squamous cell disease; **AND**
- Used as a single agent for subsequent therapy

Gestational Trophoblastic Neoplasia

- Used as single-agent therapy for multiagent chemotherapy-resistant disease; **AND**
 - Patient has intermediate placental site trophoblastic (PSTT) or epithelioid trophoblastic tumor (ETT); **AND**
 - Patient has recurrent or progressive disease; **AND**
 - Patient was previously treated with a platinum/etoposide -containing regimen; **OR**
 - Patient has methotrexate-resistant high risk disease (i.e., FIGO stages II-III and ≥ 7 Prognostic score OR FIGO stage IV disease)

Hepatocellular Carcinoma (HCC)

- Used as a single agent; **AND**
- Patient progressed on or was intolerant to sorafenib; **AND**
- Patient has Child-Pugh Class A liver impairment (i.e., excluding Child-Pugh Class B and C)

Mycosis Fungoides/Sezary Syndrome

- Used as primary therapy OR for relapsed or persistent disease; **AND**
 - Patient has stage III Mycosis Fungoides; **OR**
 - Patient has stage IV Sezary Syndrome; **OR**
- Used for disease refractory to multiple previous therapies



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

Renal Cell Carcinoma (RCC)

- Patient has advanced, relapsed, or metastatic disease; **AND**
- Patient has clear cell histology; **AND**
- Used in combination with axitinib

Endometrial Carcinoma (Uterine Cancer)

- Patient has advanced or recurrent disease; **AND**
- Disease has progressed following prior systemic therapy; **AND**
- Patient is not a candidate for curative surgery or radiation; **AND**
- Used in combination with lenvatinib

Soft Tissue Sarcoma

- Used as a single agent; **AND**
 - Patient has alveolar soft part sarcoma (ASPS); **OR**
 - Patient has cutaneous angiosarcoma; **OR**
 - Patient has myxofibrosarcoma, undifferentiated pleomorphic sarcoma (UPS), or undifferentiated sarcoma (Retroperitoneal/Intra-Abdominal or Extremity/Body Wall, Head/Neck soft tissue sarcomas); **AND**
 - Used as subsequent therapy for advanced or metastatic disease

Tumor Mutational Burden-High (TMB-H) Cancer

- Patient must be at least 2 years old; **AND**
- Patient has solid tumors that are tumor mutational burden-high (TMB-H) [≥ 10 mutations/megabase (mut/Mb)] as determined by an FDA-approved or CLIA-compliant test❖; **AND**
- Used as a single agent; **AND**
- Pediatric patients must not have a diagnosis of TMB-H central nervous system cancer; **AND**
- Patient has one of the following cancers:
 - Bone Cancer (Ewing Sarcoma, Chordoma, Chondrosarcoma [excluding dedifferentiated or mesenchymal subtypes], or Osteosarcoma [excluding undifferentiated pleomorphic sarcoma])
 - Patient has unresectable or metastatic disease that progressed following prior treatment; **AND**
 - Patient has no satisfactory alternative treatment options
 - Breast Cancer
 - Patient has unresectable or metastatic disease that progressed following prior treatment; **AND**
 - Patient has no satisfactory alternative treatment options
 - Cervical Cancer
 - Used as second-line therapy for unresectable or metastatic disease; **AND**
 - Patient has no satisfactory alternative treatment options
 - Gastric Adenocarcinoma OR Esophageal/Gastroesophageal Junction Adenocarcinoma or Squamous Cell Carcinoma
 - Used as subsequent therapy for unresectable (or not a candidate for surgery) locally advanced, recurrent, or metastatic disease
 - Salivary Gland Tumors
 - Used for recurrent metastatic disease in patients with a PS 0-3; **OR**
 - Used for unresectable locoregional recurrence or second primary with prior radiation therapy
 - Thyroid Carcinoma
 - Anaplastic Carcinoma



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

- Patient has metastatic disease
- Follicular Carcinoma, Papillary Carcinoma, Hürthle Cell Carcinoma
 - Used for unresectable recurrent, persistent, or metastatic disease not amenable to radioactive iodine (RAI)
- Medullary Carcinoma
 - Patient has unresectable, recurrent, or persistent metastatic disease
- Uterine Cancer (uterine sarcoma [excluding low-grade endometrial stromal sarcoma], endometrial carcinoma)
 - Patient has unresectable or metastatic disease that progressed following prior treatment; **AND**
 - Patient has no satisfactory alternative treatment options
- Vulvar Squamous Cell Carcinoma
 - Used for advanced, recurrent, or metastatic disease as second-line therapy; **AND**
 - Patient has no satisfactory alternative treatment options
- Testicular Cancer
 - Used as third-line therapy
- Occult Primary/Cancer of Unknown Primary (CUP)
 - Used in symptomatic patients with PS 1-2 OR asymptomatic patients with PS 0 and aggressive disease; **AND**
 - Patient has squamous cell carcinoma; **AND**
 - Patient has multiple lung nodules, pleural effusion, or disseminated metastases; **OR**
 - Patient has adenocarcinoma or carcinoma not otherwise specified; **AND**
 - Patient has one of the following:
 - Axillary involvement in men if clinically indicated
 - Lung nodules or breast marker-negative pleural effusion
 - Resectable liver disease
 - Peritoneal mass or ascites with non-ovarian histology
 - Retroperitoneal mass of non-germ cell histology in selected patients
 - Unresectable liver disease or disseminated metastases
 - Other Solid Tumor (e.g., poorly differentiated-high grade-neuroendocrine tumors [NET], large or small cell carcinoma [other than lung], etc.)
 - Patient has unresectable or metastatic disease that progressed following prior treatment; **AND**
 - Patient has no satisfactory alternative treatment options

Cutaneous Squamous Cell Carcinoma (cSCC)

- Used as a single agent; **AND**
- Patient has locally advanced, inoperable, or not fully resectable, recurrent, or metastatic disease that is not curable by surgery or radiation

Adrenal Gland Tumors

- Patient has metastatic adrenocortical carcinoma (ACC)

Triple Negative Breast Cancer (TNBC)

- Used in combination with chemotherapy; **AND**
- Patient has recurrent unresectable or metastatic disease; **AND**
- Tumor expresses PD-L1 (CPS ≥ 10) as determined by an FDA-approved or CLIA-compliant test❖

❖ *If confirmed using an immunotherapy assay-<http://www.fda.gov/companiondiagnostics>*



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

Genomic Aberration Targeted Therapies <i>(not all inclusive, refer to guidelines for appropriate use)</i>
<u>Sensitizing EGFR mutation-positive tumors</u> Afatinib Dacomitinib Erlotinib Gefitinib Osimertinib
<u>ALK rearrangement-positive tumors</u> Alectinib Brigatinib Ceritinib Crizotinib Lorlatinib
<u>ROS1 rearrangement-positive tumors</u> Ceritinib Crizotinib Entrectinib
<u>BRAF V600E-mutation positive tumors</u> Dabrafenib±Trametinib Vemurafenib
<u>NTRK Gene Fusion positive tumors</u> Entrectinib Larotrectinib
<u>PD-L1 expression-positive tumors (≥1%)</u> Atezolizumab Entrectinib Pembrolizumab
<u>MET Exon-14 skipping mutations</u> Capmatinib Crizotinib
<u>RET rearrangement-positive tumors</u> Cabozantinib Selpercatinib Vandetanib

RENEWAL CRITERIA

- Patient continues to meet universal and other indication-specific relevant criteria identified in Initial Approval Criteria; **AND**



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

- Disease response with treatment as defined by stabilization of disease or decrease in size of tumor or tumor spread; **AND**
- Absence of unacceptable toxicity from the drug. Examples of unacceptable toxicity include: severe infusion reactions, severe immune-mediated adverse reactions (e.g., pneumonitis, hepatitis, colitis, endocrinopathies, nephritis and renal dysfunction, dermatologic adverse reactions/rashes, hypophysitis, thyroid disorders, etc.), hepatotoxicity when used in combination with axitinib, etc.; **AND**
- For the follow indications, patient has not exceeded a maximum of twenty-four (24) months of therapy:
 - Squamous Cell Carcinoma of the Head and Neck (SCCHN)
 - Non-Small Cell Lung Cancer (NSCLC)
 - Classical Hodgkin Lymphoma (cHL)
 - Primary Mediastinal Large B-Cell Lymphoma (PMBCL)
 - Bladder Cancer/Urothelial Carcinoma
 - MSI-H/dMMR Cancer (including the following cancers: colorectal, pancreatic, bone, gastric/gastroesophageal, ovarian, uterine, penile, testicular, hepatobiliary, occult primary, and other solid tumors)
 - Anal Carcinoma
 - Malignant Pleural Mesothelioma (MPM)
 - Gastric Cancer
 - Esophageal/Gastroesophageal Cancer
 - Cervical Cancer
 - Vulvar Squamous Cell Carcinoma
 - Merkel Cell Carcinoma (MCC)
 - Mycosis Fungoides/Sezary Syndrome
 - Renal Cell Carcinoma (RCC)
 - Hepatocellular Carcinoma (HCC)
 - Endometrial Carcinoma
 - Thymic Carcinoma
 - Uveal Melanoma
 - Tumor Mutational Burden-High Cancer (including the following cancers: bone, cervical, salivary gland, thyroid, uterine, vulvar, testicular, occult primary, and other solid tumors)
 - Cutaneous Squamous Cell Carcinoma (cSCC)
 - Triple Negative Breast Cancer (TNBC)

Cutaneous Melanoma (adjuvant treatment)

- Patient has not exceeded a maximum of twelve (12) months of therapy

Cutaneous Melanoma (subsequent treatment after prior anti-PD-1 immunotherapy)

- Refer to Initial Approval Criteria

Continuation Maintenance Therapy for NSCLC

- Refer to Initial Approval Criteria

DOSAGE/ADMINISTRATION

INDICATION	DOSE
------------	------



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

NSCLC, HCC, SCCHN, Gastric, GEJ, Esophageal, Cervical, Bladder Cancer/ Urothelial Carcinoma, RCC, Endometrial Carcinoma (that is NOT MSI-H/dMMR), cSCC, & TNBC	200 mg intravenously every 3 weeks or 400 mg intravenously every 6 weeks up to a maximum of 24 months in patients without disease progression or unacceptable toxicity <i>*NMIBC treatment may continue up to a maximum of 24 months in patients without persistent or recurrent disease, disease progression, or unacceptable toxicity.</i>
Thymic Carcinoma & Vulvar Carcinoma	200 mg intravenously every 3 weeks up to a maximum of 24 months in patients without disease progression or unacceptable toxicity
Cutaneous Melanoma	<u>Single agent therapy (excluding adjuvant treatment):</u> 200 mg intravenously every 3 weeks or 400 mg every 6 weeks until disease progression or unacceptable toxicity <u>In combination with ipilimumab:</u> 200 mg intravenously every 3 weeks up to a maximum of 24 months in patients without disease progression or unacceptable toxicity <u>Adjuvant treatment:</u> 200 mg intravenously every 3 weeks or 400 mg every 6 weeks up to a maximum of 12 months in patients without disease recurrence or unacceptable toxicity
Uveal Melanoma	2 mg/kg intravenously every 3 weeks until up to a maximum of 24 months in patients without disease progression or unacceptable toxicity
CNS metastases	10 mg/kg intravenously every 2 weeks until progression or unacceptable toxicity
cHL, PMBCL, MCC, MSI-H/dMMR Cancer, TMB-H Cancer	<u>Adults*:</u> 200 mg intravenously every 3 weeks or 400 mg every 6 weeks <u>Pediatrics*:</u> 2 mg/kg (up to 200 mg) intravenously every 21 days <i>*Up to a maximum of 24 months in patients without disease progression or unacceptable toxicity</i>
MPM	10 mg/kg intravenously every 2 weeks for up to 24 months or until confirmed progression or unacceptable toxicity
NK/T-Cell Lymphoma	2 mg/kg intravenously every 3 weeks
MF/SS	2 mg/kg intravenously every 3 weeks up to a maximum of 24 months in patients without disease progression or unacceptable toxicity
Gestational Trophoblastic Tumor	200 mg intravenously every 3 weeks or 400 mg intravenously every 6 weeks
Soft Tissue Sarcoma & Adrenal Gland Tumors (NOT MSIH/dMMR)	200 mg intravenously every 3 weeks
Anal Carcinoma	200 mg intravenously every 3 weeks or 400 mg intravenously every 6 weeks or 2 mg/kg intravenously every 3 weeks, up to a maximum of 24 months in patients without disease progression or unacceptable toxicity
<p><u>Dosing should be calculated using actual body weight and not flat dosing (as applicable) based on the following:</u></p> <ul style="list-style-type: none"> • Standard dose 200 mg IV every 3 weeks for patients > 50 kg • Use 100 mg IV every 3 weeks for patients ≤ 50 kg <p>-OR-</p> <ul style="list-style-type: none"> • Standard dose 400 mg IV every 6 weeks for patients weighing > 82.5 kg • Use 300 mg IV every 6 weeks for patients weighing between 56 to 82.5 kg • Use 200 mg IV every 6 weeks for patients weighing ≤ 55 kg <p><i>Note: This information is not meant to replace clinical decision making when initiating or modifying medication therapy and should only be used as a guide. Patient-specific variables should be taken into account.</i></p>	



Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

LENGTH OF AUTHORIZATION

Coverage will be provided for six months and may be renewed (unless otherwise specified).

- SCCHN, cHL, NSCLC, HCC, Bladder Cancer/Urothelial Carcinoma, MPM, MSIH/dMMR, PMBCL, Cervical, Anal, Vulvar, MCC, Mycosis Fungoides/Sezary Syndrome, RCC, Thymic, Esophageal, GEJ, Gastric, Uveal Melanoma, TMB-H Cancer, cSCC, Endometrial Carcinoma, TNBC and Cutaneous Melanoma (in combination with ipilimumab) can be authorized up to a maximum of twenty-four (24) months of therapy.
- Adjuvant therapy in cutaneous melanoma can be authorized up to a maximum of twelve (12) months of therapy.

DOSING LIMITS

Max Units (per dose and over time) [HCPCS Unit]:

Indication	Billable Units (BU)	Per unit time (days)
SCCHN, cHL, NSCLC, Melanoma, Urothelial, Gastric, Esophageal, GEJ, PMBCL, Cervical, Vulvar, MSI- H/dMMR, MCC, RCC, Thymic, HCC, Gestational Trophoblastic Tumor, Soft Tissue Sarcoma, TMB-H Cancer, cSCC, Endometrial Carcinoma (that is not MSI-H/dMMR), Adrenal Gland Tumors (that are not MSI-H/dMMR), & TNBC	200 BU	21 days
MPM & CNS metastases	1150 BU	14 days
Anal Carcinoma, NK/T-Cell Lymphoma, MF/SS, & Uveal Melanoma	250 BU	21 days

APPLICABLE TENNESSEE STATE MANDATE REQUIREMENTS

BlueCross BlueShield of Tennessee’s Medical Policy complies with Tennessee Code Annotated Section 56-7-2352 regarding coverage of off-label indications of Food and Drug Administration (FDA) approved drugs when the off-label use is recognized in one of the statutorily recognized standard reference compendia or in the published peer-reviewed medical literature.

IMPORTANT REMINDER

We develop Medical Policies to provide guidance to Members and Providers. This Medical Policy relates only to the services or supplies described in it. The existence of a Medical Policy is not an authorization, certification, explanation of benefits or a contract for the service (or supply) that is referenced in the Medical Policy. For a determination of the benefits that a Member is entitled to receive under his or her health plan, the Member's health plan must be reviewed. If there is a conflict between the Medical Policy and a health plan, the express terms of the health plan will govern.

ADDITIONAL INFORMATION

For appropriate chemotherapy regimens, dosage information, contraindications, precautions, warnings, and monitoring information, please refer to one of the standard reference compendia (e.g., the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) published by the National Comprehensive Cancer Network®, Drugdex Evaluations of Micromedex Solutions at Truven Health, or The American Hospital Formulary Service Drug Information).

Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

SOURCES

1. Keytruda [package insert]. Whitehouse Station, NJ; Merck & Co, Inc; **March 2021**. Accessed **March 2021**.
2. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium®) pembrolizumab. National Comprehensive Cancer Network, 2021. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed **March 2021**.
3. Alley EW, Lopez J, Santoro A, et al. Clinical safety and activity of pembrolizumab in patients with malignant pleural mesothelioma (KEYNOTE-028): preliminary results from a non-randomised, open-label, phase 1b trial. *Lancet Oncol*. 2017 May;18(5):623-630.
4. Ott PA, Bang YJ, Berton-Rigaud D, et al. Safety and Antitumor Activity of Pembrolizumab in Advanced Programmed Death Ligand 1-Positive Endometrial Cancer: Results From the KEYNOTE-028 Study. *J Clin Oncol*. 2017 Aug 1;35(22):2535-2541.
5. Ott PA, Piha-Paul SA, Munster P, et al. Safety and antitumor activity of the anti-PD-1 antibody pembrolizumab in patients with recurrent carcinoma of the anal canal. *Ann Oncol*. 2017 May 1;28(5):1036-1041. Doi: 10.1093/annonc/mdx029.
6. Zinzani PL, Ribrag V, Moskowitz CH, et al. Safety and tolerability of pembrolizumab in patients with relapsed/refractory primary mediastinal large B-cell lymphoma. *Blood*. 2017 Jul 20;130(3):267-270. Doi: 10.1182/blood-2016-12-758383. Epub 2017 May 10.
7. U.S. Food and Drug Administrations (FDA). Division of Drug Information. Health Alert. <http://s2027422842.t.en25.com/e/es?s=2027422842&e=88882&elqTrackId=B1F0B909CCF90C71B9C490C37BFE6647&elq=3f0714083e82421a8af346a664bedbfb&elqaid=3588&elqat=1>. Accessed May 2018
8. Balar AV, Castellano D, O'Donnell PH, et al. First-line pembrolizumab in cisplatin-ineligible patients with locally advanced and unresectable or metastatic urothelial cancer (KEYNOTE-052): a multicenter, single-arm, phase 2 study. *Lancet Oncol* 2017; 18: 1483–92.
9. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium®) Merkel Cell Carcinoma. Version 1.2020. National Comprehensive Cancer Network, 20201. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed January 2021.
10. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium®) Bladder Cancer. Version 6.2020. National Comprehensive Cancer Network, 20201. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed January 2021.
11. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium®) Non-Small Cell Lung Cancer. Version 82.20201. National Comprehensive Cancer Network, 20201. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed January 2021.
12. Ghorri E, Kaur B, Fisher RA, et al. Pembrolizumab is effective for drug-resistant gestational trophoblastic neoplasia. *Lancet*. 2017 Nov 25;390(10110):2343-2345.
13. Chung HC, Lopez-Martin JA, Kao S, et al. Phase 2 study of pembrolizumab in advanced small-cell lung cancer (SCLC): KEYNOTE-158. *J Clin Oncol* 2018;36: Abstract 8506

Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

14. National Institutes of Health. Study of Pembrolizumab (MK-3475) Versus Placebo After Complete Resection of High-Risk Stage III Melanoma (MK-3475-054/KEYNOTE-054). Available at: <http://clinicaltrials.gov/show/NCT02362594>.
15. Khodadoust M, Rook AH, Porcu P, et al. Pembrolizumab in Relapsed and Refractory Mycosis Fungoides and Sézary Syndrome: A Multicenter Phase II Study. *J Clin Oncol*. 2020 Jan 1;38(1):20-28. Doi: 10.1200/JCO.19.01056. Epub 2019 Sep 18.
16. Giaccone, G, Kim C, Thompson J, et al. Pembrolizumab in patients with thymic carcinoma: a single-arm, single-centre, phase 2 study. *Lancet*. Volume 19, ISSUE 3, P347-355, March 01, 2018.
17. Cho J, Kim HS, Ku BM, et al. Pembrolizumab for Patients With Refractory or Relapsed Thymic Epithelial Tumor: An Open-Label Phase II Trial. *J Clin Oncol*. 2018 Jun 15;JCO2017773184. Doi: 10.1200/JCO.2017.77.3184. [Epub ahead of print]
18. Gupta S, Sonpavde G, Grivas P, et al. Defining “platinum-ineligible” patients with metastatic urothelial cancer (mUC). *J Clin Oncol*. 2019 Mar 1;37(7_suppl):451.
19. Fahrenbruch R, Kintzel P, Bott AM, et al. Dose Rounding of Biologic and Cytotoxic Anticancer Agents: A Position Statement of the Hematology/Oncology Pharmacy Association. *J Oncol Pract*. 2018 Mar;14(3):e130-e136.
20. Hematology/Oncology Pharmacy Association (2019). Intravenous Cancer Drug Waste Issue Brief. Retrieved from http://www.hoparx.org/images/hopa/advocacy/Issuue-Briefs/Drug_Waste_2019.pdf
21. Bach PB, Conti RM, Muller RJ, et al. Overspending driven by oversized single dose vials of cancer drugs. *BMJ*. 2016 Feb 29;352:i788.
22. Schachter J, Ribas A, Long GV, et al. Pembrolizumab versus ipilimumab for advanced melanoma: final overall survival results of a multicentre, randomised, open-label phase 3 study (KEYNOTE-006). *Lancet*. 2017 Oct 21;390(10105):1853-1862. Doi: 10.1016/S0140-6736(17)31601-X. Epub 2017 Aug 16.
23. Ribas A, Puzanov I, Dummer R, et al. Pembrolizumab versus investigator-choice chemotherapy for ipilimumab-refractory melanoma (KEYNOTE-002): a randomised, controlled, phase 2 trial. *Lancet Oncol*. 2015 Aug;16(8):908-18. Doi: 10.1016/S1470-2045(15)00083-2. Epub 2015 Jun 23.
24. Eggermont AMM, Blank CU, Mandala M, et al. Adjuvant Pembrolizumab versus Placebo in Resected Stage III Melanoma. *N Engl J Med*. 2018 May 10;378(19):1789-1801. Doi: 10.1056/NEJMoa1802357. Epub 2018 Apr 15.
25. Gandhi L, Rodríguez-Abreu D, Gadgeel S, et al. Pembrolizumab plus Chemotherapy in Metastatic Non-Small-Cell Lung Cancer. *N Engl J Med*. 2018 May 31;378(22):2078-2092. Doi: 10.1056/NEJMoa1801005. Epub 2018 Apr 16.
26. Paz-Ares L, Luft A, Vicente D, et al. Pembrolizumab plus Chemotherapy for Squamous Non-Small-Cell Lung Cancer. *N Engl J Med*. 2018 Nov 22;379(21):2040-2051. Doi: 10.1056/NEJMoa1810865. Epub 2018 Sep 25.
27. Mok TSK, Wu YL, Kudaba I, et al. Pembrolizumab versus chemotherapy for previously untreated, PD-L1-expressing, locally advanced or metastatic non-small-cell lung cancer (KEYNOTE-042): a randomised, open-label, controlled, phase 3 trial. *Lancet*. 2019 May 4;393(10183):1819-1830. Doi: 10.1016/S0140-6736(18)32409-7. Epub 2019 Apr 4.
28. Reck M, Rodríguez-Abreu D, Robinson AG, et al. Pembrolizumab versus Chemotherapy for PD-L1-Positive Non-Small-Cell Lung Cancer. *N Engl J Med*. 2016 Nov 10;375(19):1823-1833. Epub 2016 Oct 8.
29. Herbst RS, Baas P, Kim DW, et al. Pembrolizumab versus docetaxel for previously treated, PD-L1-positive, advanced non-small-cell lung cancer (KEYNOTE-010): a randomised controlled trial. *Lancet*. 2016 Apr 9;387(10027):1540-1550. Doi: 10.1016/S0140-6736(15)01281-7. Epub 2015 Dec 19.
30. Ott PA, Elez E, Hiret S, et al. Pembrolizumab in Patients With Extensive-Stage Small-Cell Lung Cancer: Results From the Phase Ib KEYNOTE-028 Study. *J Clin Oncol*. 2017 Dec 1;35(34):3823-3829. Doi: 10.1200/JCO.2017.72.5069. Epub 2017 Aug 16.
31. Burtneß B, Harrington KJ, Greil R, et al. Pembrolizumab alone or with chemotherapy versus cetuximab with chemotherapy for recurrent or metastatic squamous cell carcinoma of the head and neck (KEYNOTE-048): a randomised, open-label, phase 3 study. *Lancet*. 2019 Nov 23;394(10212):1915-1928. Doi: 10.1016/S0140-6736(19)32591-7. Epub 2019 Nov 1.

Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

32. Chow LQM, Haddad R, Gupta S, et al. Antitumor Activity of Pembrolizumab in Biomarker-Unselected Patients With Recurrent and/or Metastatic Head and Neck Squamous Cell Carcinoma: Results From the Phase Ib KEYNOTE-012 Expansion Cohort. Antitumor Activity of Pembrolizumab in Biomarker-Unselected Patients With Recurrent and/or Metastatic Head and Neck Squamous Cell Carcinoma: Results From the Phase Ib KEYNOTE-012 Expansion Cohort.
33. Chen R, Zinzani PL, Fanale MA, et al. Phase II Study of the Efficacy and Safety of Pembrolizumab for Relapsed/Refractory Classic Hodgkin Lymphoma. *J Clin Oncol*. 2017 Jul 1;35(19):2125-2132. Doi: 10.1200/JCO.2016.72.1316. Epub 2017 Apr 25.
34. Armand P, Rodig S, Melnichenko V, et al. Pembrolizumab in Relapsed or Refractory Primary Mediastinal Large B-Cell Lymphoma. *J Clin Oncol*. 2019 Dec 1;37(34):3291-3299. Doi: 10.1200/JCO.19.01389. Epub 2019 Oct 14.
35. Powles T, Gschwend JE, Loriot Y, et al. Phase 3 KEYNOTE-361 trial: Pembrolizumab (pembro) with or without chemotherapy versus chemotherapy alone in advanced urothelial cancer. DOI: 10.1200/JCO.2017.35.15_suppl.TPS4590 *Journal of Clinical Oncology* 35, no. 15_suppl. Published online May 30, 2017.
36. Bellmunt J, de Wit R, Vaughn DJ, et al. Pembrolizumab as Second-Line Therapy for Advanced Urothelial Carcinoma. *N Engl J Med*. 2017 Mar 16;376(11):1015-1026. Doi: 10.1056/NEJMoa1613683. Epub 2017 Feb 17.
37. Balar AV, Kulkarni GS, Uchio, EM, et al. Keynote 057: Phase II trial of Pembrolizumab (pembro) for patients (pts) with high-risk (HR) nonmusical invasive bladder cancer (NMIBC) unresponsive to bacillus calmette-guérin (BCG). DOI: 10.1200/JCO.2019.37.7_suppl.350 *Journal of Clinical Oncology* 37, no. 7_suppl (March 01, 2019) 350-350. Published online February 26, 2019.
38. Le DT, Kim TW, Van Cutsem E, et al. Phase II Open-Label Study of Pembrolizumab in Treatment-Refractory, Microsatellite Instability-High/Mismatch Repair-Deficient Metastatic Colorectal Cancer: KEYNOTE-164. *J Clin Oncol*. 2020 Jan 1;38(1):11-19. Doi: 10.1200/JCO.19.02107. Epub 2019 Nov 14.
39. Fuchs CS, Doi T, Jang RW, et al. Safety and Efficacy of Pembrolizumab Monotherapy in Patients With Previously Treated Advanced Gastric and Gastroesophageal Junction Cancer: Phase 2 Clinical KEYNOTE-059 Trial. *JAMA Oncol*. 2018 May 10;4(5):e180013. Doi: 10.1001/jamaoncol.2018.0013. Epub 2018 May 10.
40. Kojima T, Muro K, Francois E, et al. Pembrolizumab versus chemotherapy as second-line therapy for advanced esophageal cancer: Phase III KEYNOTE-181 study. DOI: 10.1200/JCO.2019.37.4_suppl.2 *Journal of Clinical Oncology* 37, no. 4_suppl (February 01, 2019) 2-2. Published online January 29, 2019.
41. Shah M, Kojima T, Hochhauser D, et al. Efficacy and Safety of Pembrolizumab for Heavily Pretreated Patients With Advanced, Metastatic Adenocarcinoma or Squamous Cell Carcinoma of the Esophagus: The Phase 2 KEYNOTE-180 Study. *JAMA Oncol* . 550-546:4(5;2019)Doi:10.1001/jamaoncol.2018.5441.
42. Chung HC, Ros W, Delord JP, et al. Efficacy and Safety of Pembrolizumab in Previously Treated Advanced Cervical Cancer: Results From the Phase II KEYNOTE-158 Study. *J Clin Oncol*. 2019 Jun 10;37(17):1470-1478. Doi: 10.1200/JCO.18.01265. Epub 2019 Apr 3.
43. Zhu AX, Finn RS, Edeline J, et al. Pembrolizumab in patients with advanced hepatocellular carcinoma previously treated with sorafenib (KEYNOTE-224): a non-randomised, open label phase 2 trial. *Lancet Oncol*. 2018 Jul;19(7):940-952. Doi: 10.1016/S1470-2045(18)30351-6. Epub 2018 Jun 3.
44. Nghiem P, Bhatia S, Lipson EJ, et al. Durable Tumor Regression and Overall Survival in Patients With Advanced Merkel Cell Carcinoma Receiving Pembrolizumab as First-Line Therapy. *J Clin Oncol*. 2019 Mar 20;37(9):693-702. Doi: 10.1200/JCO.18.01896. Epub 2019 Feb 6.
45. Rini BI, Plimack ER, Stus V, et al. Pembrolizumab plus Axitinib versus Sunitinib for Advanced Renal-Cell Carcinoma. *N Engl J Med*. 2019 Mar 21;380(12):1116-1127. Doi: 10.1056/NEJMoa1816714. Epub 2019 Feb 16.
46. Makker V, Taylor MH, Aghajanian C, et al. Lenvatinib (LEN) and pembrolizumab (PEMBRO) in advanced endometrial cancer (EC). *Annals of Oncology*, Volume 30, Issue Supplement_5, October 2019, MDZ250.002, <https://doi.org/10.1093/annonc/mdz250.002>.

Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

47. Goldberg SB, Gettinger SN, Mahajan A, et al. Pembrolizumab for patients with melanoma or non-small-cell lung cancer and untreated brain metastases: early analysis of a nonrandomized, open-label, phase 2 trial. *Lancet Oncol.* 2016 Jul;17(7):976-983. Doi: 10.1016/S1470-2045(16)30053-5. Epub 2016 Jun 3.
48. Kwong YL, Chan TSY, Tan D, et al. PD1 blockade with pembrolizumab is highly effective in relapsed or refractory NK/T-cell lymphoma failing l-asparaginase. *Blood.* 2017 Apr 27;129(17):2437-2442. Doi: 10.1182/blood-2016-12-756841. Epub 2017 Feb 10.
49. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium®) Central Nervous System Cancers. Version 3.2020. National Comprehensive Cancer Network, 20201. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed January 2021.
50. Kluger HM, Chiang V, Mahajan A, et al. Long-Term Survival of Patients With Melanoma With Active Brain Metastases Treated With Pembrolizumab on a Phase II Trial. *J Clin Oncol.* 2019 Jan 1;37(1):52-60. doi: 10.1200/JCO.18.00204. Epub 2018 Nov 8.
51. Marabelle A, Le DT, Ascierto PA, et al. Efficacy of Pembrolizumab in Patients With Noncolorectal High Microsatellite Instability/Mismatch Repair-Deficient Cancer: Results From the Phase II KEYNOTE-158 Study. *J Clin Oncol.* 2020 Jan 1;38(1):1-10. doi: 10.1200/JCO.19.02105. Epub 2019 Nov 4.
52. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium®) Anal Carcinoma. Version 2.2020. National Comprehensive Cancer Network, 20201. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed January 2020.
53. Kottschade LA, McWilliams RR, Markovic SN, et al. The Use of Pembrolizumab for the Treatment of Metastatic Uveal Melanoma. *Melanoma Res.* 2016 Jun;26(3):300-3. doi: 10.1097/CMR.0000000000000242.
54. Algazi AP, Tsai KK, Shoushtari AN, et al. Clinical Outcomes in Metastatic Uveal Melanoma Treated With PD-1 and PD-L1 Antibodies. *Cancer.* 2016 Nov 15;122(21):3344-3353. doi: 10.1002/cncr.30258.
55. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium®) Gestational Trophoblastic Neoplasia. Version 3.2020. National Comprehensive Cancer Network, 20201. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed January 2021.
56. Burgess MA, Bolejack V, Van Tine BA, et al. Multicenter phase II study of pembrolizumab (P) in advanced soft tissue (STS) and bone sarcomas (BS): Final results of SARC028 and biomarker analyses. *J Clin Oncol* 2017; 35, no. 15_suppl (May 20, 2017) 11008-11008.
57. Marabelle A, Fakih M, Lopez J, et al. Association of Tumor Mutational Burden with Outcomes in Patients with Select Advanced Solid Tumors Treated with Pembrolizumab in KEYNOTE-158. *Ann Oncol.* 2019;30(suppl_5):v475-v532. doi: 10.1093/annonc/mdz253.
58. Grob J, Gonzalez Mendoza R, Basset-Seguín N, et al. Pembrolizumab for recurrent/metastatic cutaneous squamous cell carcinoma (cSCC): Efficacy and safety results from the phase II KEYNOTE-629 study. *Ann Oncol.* 2019;30(suppl_5):v908. doi: 10.1093/annonc/mdz394.069.
59. Andre T, Shiu KK, Kim TW, et al. Pembrolizumab versus chemotherapy for microsatellite instability-high/mismatch repair deficient metastatic colorectal cancer: The phase 3 KEYNOTE-177 Study. *J Clin Oncol.* 2020;38(18_suppl):LBA4-LBA4.
60. Geoerger B, Kang HJ, Yalon-Oren M, et al. Pembrolizumab in paediatric patients with advanced melanoma or a PD-L1-positive, advanced, relapsed, or refractory solid tumour or lymphoma (KEYNOTE-051): interim analysis of an open-label, single-arm, phase 1-2 trial. *Lancet Oncol.* 2020;21(1):121-133. doi:10.1016/S1470-2045(19)30671-0.

Medical Policy Manual **Approved Revision: Do Not Implement until 8/31/21**

61. Pembrolizumab Improves Progression-Free Survival in Relapsed/Refractory Hodgkin Lymphoma. *Oncologist*. 2020;25 Suppl 1(Suppl 1):S18-S19. doi:10.1634/theoncologist.2020-0561.
62. Raj N, Zheng Y, Kelly V, et al. PD-1 Blockade in Advanced Adrenocortical Carcinoma. *J Clin Oncol*. 2020 Jan 1;38(1):71-80. doi: 10.1200/JCO.19.01586.
63. Naing A, Meric-Bernstam F, Stephen B, et al. Phase 2 study of pembrolizumab in patients with advanced rare cancers [published correction appears in *J Immunother Cancer*. 2020 Apr;8(1):]. *J Immunother Cancer*. 2020;8(1):e000347. doi:10.1136/jitc-2019-000347.
64. Crtes J, Cescon DW, Rugo HS, et al. KEYNOTE-355: Randomized, double-blind, phase III study of pembrolizumab + chemotherapy versus placebo + chemotherapy for previously untreated locally recurrent inoperable or metastatic triple-negative breast cancer. *Journal of Clinical Oncology*38, no. 15_suppl(May 20, 2020)1000-1000.
65. Olson D, Luke JJ, Poklepovic AS, et al. Significant antitumor activity for low-dose ipilimumab (IPI) with pembrolizumab (PEMBRO) immediately following progression on PD1 Ab in melanoma (MEL) in a phase II trial. *J Clin Oncol* 2020;38(15_suppl): abstract 10004.
66. Kato K, Shah MA, Enzinger P, et al. KEYNOTE-590: Phase III study of first-line chemotherapy with or without pembrolizumab for advanced esophageal cancer. *Future Oncol*. 2019 Apr;15(10):1057-1066. doi: 10.2217/fon-2018-0609.
67. Lexicomp Online. (2021, February). AHFS DI. *Pembrolizumab*. Retrieved April 20, 2021 from Lexicomp Online with AHFS.
68. MICROMEDEX Healthcare Series. Drugdex Evaluations. (2021, April). *Pembrolizumab*. Retrieved April 20, 2021.

EFFECTIVE DATE 8/31/2021

ID_MRx