Bevacizumab:

Alymsys[®]; Avastin[®]; Avzivi[®]; Jobevne[™]; Mvasi[®]; Vegzelma[®]; Zirabev[®]

(Intravenous) *ONCOLOGY*

-E-

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I. Length of Authorization ⁹

- Initial: Prior authorization validity will be provided initially for 6 months, unless otherwise specified.
 - Adult CNS Cancers (symptom management): Prior authorization validity will be provided for twelve (12) weeks.
- Renewal: Prior authorization validity may be renewed every 6 months thereafter, unless otherwise specified.
 - Adult CNS Cancers (symptom management): Prior authorization validity may NOT be renewed.

II. Dosing Limits

- 1. Max Units (per dose and over time) [HCPCS Unit]:
- Small Bowel Adenocarcinoma & Ampullary Adenocarcinoma: 180 billable units per 42 days
- NSCLC, Cervical Cancer, HCC, Vaginal Cancer, Vulvar Cancer, Endometrial Carcinoma & Mesotheliomas: 170 billable units per 21 days
- CRC & Appendiceal Adenocarcinoma, CNS Cancers, RCC, & All other indications: 360 billable units per 42 days

III. Initial Approval Criteria 1-7

Prior authorization validity is provided in the following conditions:

Mvasi™ (bevacizumab-awwb) and Zirabev™ (bevacizumab-bvzr) are the preferred bevacizumab products.

- Patient must have a contraindication, intolerance, or failure of Mvasi™ (bevacizumab-awwb)
 and Zirabev™ (bevacizumab-bvzr) prior to the consideration of another bevacizumab product.
- Patient is at least 18 years of age, unless otherwise specified; AND

Universal Criteria 1-7

- Patient has no recent history of hemoptysis (i.e., the presence of ≥2.5 mL of blood in sputum);
 AND
- Patient must not have had a surgical procedure within the preceding 28 days or have a surgical wound that has not fully healed; AND

Ampullary Adenocarcinoma ‡ 8

- Used in combination with a fluoropyrimidine- (e.g., 5-fluorouracil/5-FU or capecitabine) based regimen for intestinal type disease; **AND**
 - Used as first-line therapy for metastatic disease; OR
 - Used for disease progression

Adult Central Nervous System (CNS) Cancers † ‡ $\Phi^{1-8,10,29,30,78e,87e,94e,148e,150e}$

- Used as single-agent for symptomatic mass effect, radiation necrosis, brain edema; AND
 - Patient has a diagnosis of one of the following CNS cancers ‡:
 - Circumscribed Glioma
 - Primary CNS Lymphoma
 - Meningiomas
 - Brain or Spine metastases
 - Primary Spinal Cord Tumors
 - Medulloblastoma
 - Glioblastoma/Gliosarcoma
 - H3-mutated high-grade glioma/High-grade astrocytoma with piloid features
 (HGAP)/Pleomorphic xanthoastrocytoma (PXA) WHO grade 3
 - IDH-mutant Astrocytoma (WHO Grade 2-4)
 - IDH-mutant, 1p19q codeleted Oligodendroglioma (WHO Grade 2 or 3)

- Intracranial or Spinal Ependymoma (excluding subependymoma); OR
- Used for recurrent or progressive disease; AND
 - Patient has a diagnosis of one of the following CNS cancers:
 - Glioblastoma/Gliosarcoma/H3-mutated high-grade glioma † ‡
 - IDH-mutant Astrocytoma (WHO Grade 3 or 4) ‡; AND
 - Used as a single agent; OR
 - Used in combination with carmustine, lomustine, or temozolomide; AND
 - Patient has failed bevacizumab monotherapy; OR
 - Used in combination with temozolomide and irinotecan for Medulloblastoma (recurrent disease only) ‡; OR
 - Used as a single agent for surgically inaccessible Meningiomas when radiation is not possible
 ‡; OR
- Used as single agent for Neurofibromatosis type 2 vestibular schwannomas with hearing loss ‡
 Cervical Cancer † ‡ ^{1-8,32,51,62,66,210e-213e}
- Patient has persistent, recurrent, or metastatic disease; AND
 - Patient has adenocarcinoma, adenosquamous, or squamous cell carcinoma; AND
 - Used in combination with paclitaxel AND either cisplatin, carboplatin, or topotecan^{*};
 AND
 - Used as first-line therapy; OR
 - Used in combination with pembrolizumab, paclitaxel, AND either cisplatin or carboplatin^; AND
 - ➤ Tumor expresses PD-L1 (Combined Positive Score [CPS] ≥1) as determined by an FDA-approved or CLIA compliant testv; **AND**
 - Disease is not amenable to curative treatment (i.e., surgery and/or radiation);
 AND
 - Used as first-line therapy; OR
 - Used in combination with atezolizumab, paclitaxel, AND either cisplatin or carboplatin x;
 AND
 - Used as first-line therapy; OR
 - Used as a single agent as subsequent therapy; AND
 - Patient must demonstrate an inadequate response to a generically available regimen, unless there is a contraindication or intolerance, prior to approval of bevacizumab (e.g., pemetrexed, topotecan, etc. [see NCCN Cervical Cancer guidelines for complete list of alternative regimens])

↑ Bevacizumab may be continued as a maintenance therapy

🕱 Atezolizumab and bevacizumab may be continued as a maintenance therapy

Colorectal Cancer (CRC) ¥ † ‡ 1-8,21-26,49,52

- Will not be used as part of adjuvant treatment; AND
- Will not be used in combination with an anti-EGFR agent (e.g., panitumumab or cetuximab);
 AND
 - Used in combination with a fluoropyrimidine- (e.g., 5-fluorouracil/5-FU or capecitabine)
 based regimen as first-line or subsequent therapy for metastatic, unresectable (or medically inoperable), or advanced disease; OR
 - Used in combination with irinotecan as initial treatment for unresectable metastatic disease; AND
 - Patient received previous FOLFOX or CapeOX within the past 12 months; OR
 - Used in combination with irinotecan-based therapy as subsequent therapy for advanced or metastatic disease; OR
 - Used in combination with trifluridine and tipiracil as subsequent therapy for advanced or metastatic disease; AND
 - Patient progressed through all available regimens (e.g., oxaliplatin-based therapy, irinotecan-based therapy, fluoropyrimidine-based therapy, etc.)*; OR
 - Used as primary treatment for T3, N Any; T1-2, N1-2; T4, N Any, or locally unresectable (or medically inoperable) <u>rectal</u> cancer; AND
 - Used in combination with a fluoropyrimidine- (e.g., 5-fluorouracil/5-FU or capecitabine)
 based regimen; AND
 - Used if resection is contraindicated following total neoadjuvant therapy; OR
 - Used if resection is contraindicated following neoadjuvant/definitive immunotherapy

¥ Note: NCCN recommends universal MMR or MSI testing in all newly diagnosed patients. If deficient mismatch repair/microsatellite instability-high (dMMR/MSI-H) or polymerase epsilon/delta (POLE/POLD1) mutation with ultra-hypermutated phenotype (e.g., TMB>50 mut/Mb), treatment should include checkpoint inhibitor immunotherapy if the patient is a candidate.

Appendiceal Adenocarcinoma – Colon Cancer ¥ ‡8,49

- Used as initial therapy for advanced or metastatic disease; AND
 - Used in combination with a fluoropyrimidine- (e.g., 5-fluorouracil/5-FU or capecitabine)
 based regimen; OR
- Used as subsequent therapy for progression of advanced or metastatic disease; AND
 - Used in combination with a fluoropyrimidine- (e.g., 5-fluorouracil/5-FU or capecitabine) or irinotecan-based regimen; OR

^{*}Refer to NCCN Colon and Rectal Cancer guidelines for regimens.

- Used in combination with trifluridine and tipiracil; AND
 - Patient progressed through all available regimens (e.g., oxaliplatin-based therapy, irinotecan-based therapy, therapy without irinotecan or oxaliplatin, etc.)*

¥ Note: NCCN recommends universal MMR or MSI testing in all newly diagnosed patients. If deficient mismatch repair/microsatellite instability-high (dMMR/MSI-H) or polymerase epsilon/delta (POLE/POLD1) mutation with ultra-hypermutated phenotype (e.g., TMB>50 mut/Mb), treatment should include checkpoint inhibitor immunotherapy if the patient is a candidate.

Endometrial Carcinoma (Uterine Neoplasms) ‡ 8,39,67,130e-133e

- Used as a single agent as subsequent therapy for recurrent disease that has progressed on prior cytotoxic chemotherapy; OR
- Used in combination with carboplatin and paclitaxel, and continued as single agent maintenance therapy; **AND**
 - Used for recurrent disease (excluding first-line use for isolated metastases); OR
 - Used as primary or adjuvant therapy (stage III-IV with measurable disease only)

Hepatocellular Carcinoma (HCC) † ‡ Φ ^{1,8,18,19,56,161e,232e}

- Used in combination with atezolizumab; AND
- Patient does not have Child-Turcotte-Pugh (CTP) Class C liver disease; AND
 - Used as first-line therapy; AND
 - Use of bevacizumab will be restricted to patients with a contraindication or intolerance to tremelimumab/durvalumab; AND
 - Patient has unresectable disease †; OR
 - Patient has extrahepatic/metastatic disease and is deemed ineligible for resection, transplant, or locoregional therapy; OR
 - Used as subsequent therapy for progression on or after systemic therapy; AND
 - Patient has not received previous treatment with bevacizumab or a checkpoint inhibitor; AND
 - Patient received previous treatment with sorafenib or lenvatinib, unless contraindicated

Peritoneal* Mesothelioma (PeM) ‡ 8,46,47,53,179e,183e

- Used as first-line therapy; AND
 - Used in combination with pemetrexed AND either cisplatin or carboplatin; AND
 - Patient has one or more of the following:
 - Medically inoperable disease
 - Complete cytoreduction is not achievable

^{*}Refer to NCCN Colon Cancer guidelines for regimens.

- Presence of any high-risk features**
- Disease has progressed following CRS + HIPEC and no previous adjuvant systemic therapy was given; OR
- Used as subsequent therapy; AND
 - Used in combination with pemetrexed AND either cisplatin or carboplatin; AND
 - Immunotherapy was administered as first-line treatment; OR
 - Used as a rechallenge if pemetrexed-based treatment was administered first-line with good response; OR
 - Used in combination with atezolizumab; AND
 - Patient has not received previous therapy with immune checkpoint inhibitors; AND
 - Patient received previous treatment with platinum and pemetrexed, unless contraindicated

Pleural* Mesothelioma (PM) ‡ 8,41,53,134e

- Used in combination with pemetrexed AND either cisplatin or carboplatin; AND
 - Used as first-line therapy; AND
 - Patient has unresectable disease not amenable to curative surgery; OR
 - Used as subsequent therapy; AND
 - Immunotherapy was administered as first-line treatment; OR
 - Used as a rechallenge if pemetrexed-based treatment was administered first-line with good response

Non-Squamous Non-Small Cell Lung Cancer (NSCLC) † \ddagger 1-8,14,16,17,27,28,38e-40e,44e,169e

- Used for recurrent, advanced, or metastatic disease (excluding locoregional recurrence or symptomatic local disease with no evidence of disseminated disease) or mediastinal lymph node recurrence with prior radiation therapy; AND
 - Used as first-line therapy; AND
 - Used in combination with erlotinib for EGFR exon 19 deletion or exon 21 L858R mutations; OR
 - Used in combination with carboplatin and paclitaxel †; OR
 - Used for one of the following:

^{*}Note: May also be used for pericardial mesothelioma and tunica vaginalis testis mesothelioma.

^{**}High-risk features include Ki-67 >9%, nodal metastasis, thrombocytosis, PS=2, high disease burden/incomplete cytoreduction (Peritoneal Cancer Index [PCI] >17), completeness of cytoreduction (cc) score >1, biphasic/sarcomatoid histology, or bicavitary disease.

^{*}Note: May also be used for pericardial mesothelioma and tunica vaginalis testis mesothelioma.

- Tumor is negative for actionable molecular biomarkers* (may be KRAS G12C mutation positive)
- Tumor is positive for one of the following molecular biomarkers: EGFR exon 20, BRAF V600E, NTRK1/2/3 gene fusion, MET exon 14 skipping, ERBB2 (HER2), or NRG1 gene fusion; AND
- Used in combination with one of the following:
 - ◆ Pemetrexed AND either carboplatin or cisplatin in patients with contraindications¥ to PD-1 or PD-L1 inhibitors
 - ♦ Atezolizumab, carboplatin, and paclitaxel; AND

In combination with atezolizumab, carboplatin, and paclitaxel ONLY:

- Use of bevacizumab will be restricted to patients with a contraindication or intolerance to cemiplimab/(paclitaxel or pemetrexed)/(carboplatin or cisplatin); OR
- Used as subsequent therapy; AND
 - Used in combination with atezolizumab, carboplatin, and paclitaxel (excluding use in patients who have received prior PD-1/PD-L1 inhibitor therapy); AND
 - Used for one of the following:
 - EGFR S768I, L861Q, and/or G719X mutation positive tumors AND patient received prior targeted therapy§ for those aberrations
 - BRAF V600E mutation, NTRK1/2/3 gene fusion, or MET exon 14 skipping mutation positive tumors; AND
 - Use of bevacizumab will be restricted to patients with a contraindication or intolerance to cemiplimab/(paclitaxel or pemetrexed)/(carboplatin or cisplatin); OR
 - Patient has contraindications¥ to PD-1 or PD-L1 inhibitors; AND
 - Used in combination with one of the following:
 - Carboplatin and paclitaxel
 - Pemetrexed AND either carboplatin or cisplatin; AND
 - Used for one of the following:
 - EGFR exon 19 deletion or exon 21 L858R mutation, EGFR S768I, L861Q, and/or G719X mutation, ALK rearrangement, RET rearrangement or ROS1 rearrangement positive tumors AND patient received prior targeted therapy§ for those aberrations
 - BRAF V600E mutation, NTRK1/2/3 gene fusion, or MET exon 14 skipping mutation positive tumors

- PD-L1 expression positive (PD-L1 ≥ 1%) tumors that are negative for actionable molecular biomarkers* after prior PD-1/PD-L1 inhibitor therapy but no prior platinum-containing chemotherapy; OR
- Used as continuation maintenance therapy in patients who achieved tumor response or stable disease after first-line systemic therapy; AND
 - Used as a single agent (bevacizumab must have been included in patient's first-line regimen); OR
 - Used in combination with pemetrexed following a first-line bevacizumab/pemetrexed/platinum chemotherapy regimen; OR
 - Used in combination with atezolizumab following a first-line atezolizumab/carboplatin/paclitaxel/bevacizumab regimen; OR
- Used as continuation of therapy following disease progression on erlotinib with bevacizumab; AND
 - Patient has asymptomatic disease, symptomatic brain lesions, or symptomatic systemic limited progression; AND
 - Patient has T790M negative disease

*Note: Actionable molecular genomic biomarkers include EGFR, KRAS, ALK, ROS1, BRAF, NTRK1/2/3, MET, RET, NRG1, and ERBB2 (HER2). Complete genotyping for EGFR, KRAS, ALK, ROS1, BRAF, NTRK1/2/3, MET, RET, NRG1 and ERBB2 (HER2), via biopsy and/or plasma testing. If a clinically actionable marker is found, it is reasonable to start therapy based on the identified marker. Treatment is guided by available results and, if unknown, these patients are treated as though they do not have driver oncogenes.

¥ Note: Contraindications for treatment with PD-1/PD-L1 inhibitors may include active or previously documented autoimmune disease and/or current use of immunosuppressive agents, and some oncogenic drivers (i.e., EGFR exon 19 deletion or exon 21 L858R; ALK, RET, or ROS1 rearrangements) have been shown to be associated with less benefit from PD-1/PD-L1 inhibitors.

§ Note: Genomic Aberration/Mutational Driver Targeted Therapies: Refer to guidelines for appropriate use

Ovarian, Fallopian Tube, and Primary Peritoneal Cancer † ‡ Φ ^{1-8,15,33-36,54,100e,107e,113e,117e,163e}

- Patient has malignant stage II-IV sex cord-stromal tumors ‡; AND
 - Used as a single agent for clinically relapsed disease; AND
 - Patient must demonstrate an inadequate response to paclitaxel, unless there is a contraindication or intolerance, prior to approval of bevacizumab; OR
- Patient has epithelial* ovarian, fallopian tube, or primary peritoneal cancer †; AND
 - o Patient has platinum-resistant recurrent low grade serous carcinoma; AND
 - Used in combination with oral cyclophosphamide and pembrolizumab; AND

- Patient must demonstrate an inadequate response to one of the following, unless there is a contraindication or intolerance, prior to approval of bevacizumab:
 - Bevacizumab ± paclitaxel, oral cyclophosphamide, liposomal doxorubicin, or topotecan
 - Generically available agent or regimen (e.g., liposomal doxorubicin, paclitaxel, etc. [see NCCN Ovarian Cancer guidelines for complete list of alternatives]); OR

Used in combination with one of the following: oral cyclophosphamide, liposomal doxorubicin, paclitaxel, topotecan, or mirvetuximab soravtansine (in folate receptoralpha expressing tumors [≥25% positive tumor cells]); **OR**

Patient has persistent or recurrent disease; AND

- Patient is not experiencing an immediate biochemical relapse (i.e., rising CA-125 without radiographic evidence of disease); AND
 - Patient has platinum-sensitive disease; AND
 - Used as a single agent; OR
 - Used in combination with carboplatin AND either gemcitabine, paclitaxel †,
 or liposomal doxorubicin; OR
 - Patient has platinum-resistant disease; AND
 - Used as a single agent; AND
 - Patient must demonstrate an inadequate response to a generically available regimen, unless there is a contraindication or intolerance, prior to approval of bevacizumab (e.g., topotecan, etc. [see NCCN Ovarian Cancer guidelines for complete list of alternative regimens]);
 OR
 - Used in combination with one of the following: oral cyclophosphamide, gemcitabine, liposomal doxorubicin, paclitaxel, or topotecan; OR
 - Used in combination with oral cyclophosphamide and pembrolizumab; AND
 - Patient must demonstrate an inadequate response to one of the following, unless there is a contraindication or intolerance, prior to approval of bevacizumab:
 - Bevacizumab ± paclitaxel, liposomal doxorubicin, or topotecan

- Generically available agent or regimen (e.g., liposomal doxorubicin, paclitaxel, etc. [see NCCN Ovarian Cancer guidelines for complete list of alternatives]); OR
- Used in combination with mirvetuximab soravtansine (in folate receptoralpha expressing tumors [25% positive tumor cells]); OR
- Used in combination with paclitaxel and carboplatin for rising CA-125 levels or clinical relapse in patients who have received no prior chemotherapy (mucinous, clear cell, carcinosarcoma, endometrioid, and high-grade serous histology only); OR
- Used in combination with paclitaxel and carboplatin for recurrence in patients who have received no prior chemotherapy (low-grade serous carcinoma only); OR
- Used as maintenance therapy; AND
 - Used following primary therapy including bevacizumab; AND
 - Used for stage II-IV disease as a single agent in patients that are BRCA1/2 wild-type or unknown (grade 2/3 endometrioid and high-grade serous histology only); OR
 - Used for stage III-IV disease in combination with olaparib or niraparib (if unable to tolerate olaparib); AND
 - Patient is BRCA1/2 wild-type or unknown AND HR deficient (grade 2/3 endometrioid and high-grade serous histology only); OR
 - Patient has a germline or somatic BRCA1/2 mutation (grade 2/3 endometrioid, high-grade serous, clear cell, carcinosarcoma histology only);
 OR
 - Used as a single agent following recurrence therapy with chemotherapy plus bevacizumab for platinum-sensitive disease; OR
 - Used as continued treatment for stable disease following neoadjuvant therapy (endometrioid and serous histology only); AND
 - Used in combination with carboplatin AND paclitaxel or docetaxel; OR
 - Used in combination with oxaliplatin and docetaxel; OR
- Used as neoadjuvant therapy (does not apply to low malignant potential or other noninvasive cancers such as ovarian borderline epithelial tumors); AND
 - Used in combination with one of the following:
 - Carboplatin AND paclitaxel or docetaxel
 - Oxaliplatin and docetaxel (excludes use in grade 1 endometrioid carcinoma and low grade serous carcinoma); AND
 - Patient is a poor surgical candidate or has a low likelihood of optimal cytoreduction; OR
- Used as adjuvant therapy; AND

- Used in combination with oxaliplatin and docetaxel; AND
 - Patient has pathologic stage II-IV disease (excludes use in grade 1 endometrioid carcinoma and low grade serous carcinoma); OR
 - Used following interval debulking surgery (IDS) in patients with a response or stable disease to neoadjuvant therapy (endometrioid and serous histology only);
 AND
 - Patient is a poor surgical candidate or has a low likelihood of optimal cytoreduction; OR
- Used in combination with carboplatin AND paclitaxel or docetaxel; AND
 - Patient has pathologic stage III-IV disease; OR
 - Used following interval debulking surgery (IDS) in patients with a response or stable disease to neoadjuvant therapy (endometrioid and serous histology only);
 AND
 - Patient is a poor surgical candidate or has a low likelihood of optimal cytoreduction

Pediatric Central Nervous System (CNS) Cancers ‡ 8,48,57-61,65,70-76

- Patient has recurrent or progressive disease; AND
 - Patient has medulloblastoma; AND
 - Patient is ≥ 3 years of age and ≤ 21 years of age; AND
 - Used as part of the TEMR regimen (temozolomide, irinotecan, bevacizumab);
 OR
 - Used as part of MEMMAT regimen (thalidomide, celecoxib, fenofibrate, etoposide, cyclophosphamide, bevacizumab; OR
 - Patient has optic pathway glioma; AND
 - Patient is < 18 years of age; AND
 - Used as subsequent treatment following chemotherapy and/or radiation; AND
 - Used as a single agent or in combination with standard therapies (e.g., irinotecan, carboplatin, vinblastine, etc.); OR
 - o Patient has neurofibromatosis type 2 (NF2) vestibular schwannomas; AND
 - Patient is ≥ 6 years of age; AND
 - Patient has hearing loss in at least 1 ear; OR
- Used as continuation of therapy following disease progression on bevacizumab; AND

^{*}Epithelial subtypes include serous, endometrioid, carcinosarcoma (malignant mixed Müllerian tumors [MMMTs] of the ovary), clear cell, mucinous, and borderline epithelial tumors (also known as low malignant potential [LMP] tumors).

- Used to preserve vision in patients with optic pathway glioma; OR
- o Used to preserve hearing in patients with NF2 vestibular schwannomas

Renal Cell Carcinoma (RCC) † ‡ 1-8,31,62e,65e,71e-75e

- Used in combination with interferon alfa for metastatic disease †; OR
- Patient has relapsed or stage IV disease with non-clear cell histology ‡; AND
 - Used in combination with everolimus* as first-line therapy; OR
 - Used in combination with erlotinib for advanced papillary disease including hereditary leiomyomatosis and renal cell carcinoma (HLRCC)-associated RCC
- *When used as first-line therapy for stage IV disease, disease must be M1 or unresectable T4, M0

Small Bowel Adenocarcinoma ‡ 8,20,155e

- Patient has advanced or metastatic disease; AND
- Used in combination with a fluoropyrimidine- (e.g., 5-fluorouracil/5-FU or capecitabine) based regimen; AND
 - Used as initial therapy if pMMR/MSS disease; OR
 - Used as subsequent therapy if not previously given

Soft Tissue Sarcoma (STS) ‡ 8,38,43

- Used as a single agent for angiosarcoma; AND
- Patient has unresectable disease

Vaginal Cancer ‡ 8,32,62,210e-213e

- Patient has recurrent or metastatic disease; AND
 - Used in combination with paclitaxel AND either cisplatin, carboplatin, or topotecan; AND
 - Used as first-line therapy; OR
 - Used in combination with pembrolizumab, paclitaxel, AND either cisplatin or carboplatin;
 AND
 - Tumor expresses PD-L1 (CPS ≥1) as determined by an FDA-approved or CLIA compliant testv; AND
 - Disease is not amenable to curative treatment (i.e., surgery and/or radiation); AND
 - Used as first-line therapy; OR
 - Used as a single agent as subsequent therapy; AND
 - Patient must demonstrate an inadequate response to a generically available regimen, unless there is a contraindication or intolerance, prior to approval of bevacizumab (e.g., pemetrexed, topotecan, etc. [see NCCN Vaginal Cancer guidelines for complete list of alternative regimens])

Vulvar Cancer ‡ 8,32,62

- Patient has advanced, recurrent, or metastatic disease; AND
- Used as first-line therapy; AND
 - Used in combination with paclitaxel AND either cisplatin or carboplatin*, OR
 - Used in combination with pembrolizumab, paclitaxel, AND either cisplatin or carboplatin∞;
 AND
 - Disease is not amenable to curative treatment (i.e., surgery and/or radiation)
- ↑ Bevacizumab may be continued as a maintenance therapy
- ∞ Pembrolizumab and bevacizumab may be continued as a maintenance therapy

Preferred therapies and recommendations are determined by review of clinical evidence. NCCN category of recommendation is taken into account as a component of this review. Regimens deemed equally efficacious (i.e., those having the same NCCN categorization) are considered to be therapeutically equivalent.

Enhanced Oncology Value (EOV) Program - Redacted indications

Uses not listed above have inadequate data to support efficacy and are excluded from prior authorization validity.

Other treatment options including, but are not limited to, the following may be appropriate: radiation therapy, surgery, traditional chemotherapy (e.g., platinum, taxane), compassionate use/expanded access programs, clinical trials, supportive care, integrative and complementary therapies.

v If confirmed using an FDA-approved assay – http://www.fda.gov/companiondiagnostics

† FDA Approved Indication(s); ‡ Compendia Recommended Indication(s); Φ Orphan Drug

IV. Renewal Criteria 1-8,10

Prior authorization validity may be renewed based upon the following criteria:

- Patient continues to meet the universal and other indication-specific relevant criteria such as concomitant therapy requirements (not including prerequisite therapy), performance status, etc. identified in section III; AND
- Duration of authorization has not been exceeded (refer to Section I); AND
- Disease response with treatment as defined by stabilization of disease or decrease in size of tumor or tumor spread, unless otherwise specified; **AND**
- Absence of unacceptable toxicity from the drug. Examples of unacceptable toxicity include: gastrointestinal perforations and fistulae, surgical/wound healing complications, hemorrhage,

necrotizing fasciitis, arterial and venous thromboembolic events (ATE & VTE), uncontrolled hypertension, posterior reversible encephalopathy syndrome (PRES), nephrotic syndrome, proteinuria, severe infusion-related reactions, ovarian failure, congestive heart failure (CHF), etc.

V. Dosage/Administration ^{1-7,9-10,15,20,32,38,39,41-50,55-62,64-66,68-69,72,75}

| Indication | Dose |
|--|--|
| CRC & Appendiceal Adenocarcinoma | Administer 5 to 10 mg/kg intravenously every 2 weeks <u>OR</u> 7.5 mg/kg intravenously every 3 weeks until disease progression or unacceptable toxicity. |
| Small Bowel Adenocarcinoma & Ampullary Adenocarcinoma | Administer 5 mg/kg intravenously every 2 weeks OR 7.5 mg/kg intravenously every 3 weeks until disease progression or unacceptable toxicity. |
| NSCLC, Cervical Cancer, HCC, Vulvar Cancer, Vaginal Cancer, Endometrial Carcinoma & Mesotheliomas (peritoneal, pleural, pericardial, and tunica vaginalis testis) | Administer 15 mg/kg intravenously every 3 weeks until disease progression or unacceptable toxicity. |
| Adult CNS Cancers | For symptomatic mass effect, radiation necrosis, brain edema: Administer 5 to 10 mg/kg intravenously every 2 weeks up to 12 weeks duration OR 7.5 mg/kg intravenously every 3 weeks up to 12 weeks. |
| | For Neurofibromatosis type 2 vestibular schwannomas: Administer 7.5 mg/kg intravenously every 3 weeks until disease progression or unacceptable toxicity. |
| | For recurrent or progressive disease: Single agent: - Administer 10 mg/kg intravenously every 2 weeks OR 5 to 15 mg/kg every 3 weeks |
| | until disease progression or unacceptable toxicity. In combination with carmustine, lomustine, or temozolomide; OR temozolomide and irinotecan: - Administer 5 to 10 mg/kg intravenously every 2 weeks |
| Pediatric CNS Cancers | Optic Pathway Glioma: Administer 10 mg/kg intravenously every 2 weeks. |
| | Neurofibromatosis type 2 vestibular schwannomas: Administer 7.5 mg/kg intravenously every 3 weeks. |
| | All other indications: |

| Administer 10 mg/kg intravenously every 2 weeks until disease progression or unacceptable toxicity. | |
|--|--|
| Administer 10 mg/kg intravenously every 2 weeks until disease progression or unacceptable toxicity. | |
| Administer 5 to 10 mg/kg intravenously every 2 weeks OR 7.5 to 15 mg/kg intravenously every 3 weeks until disease progression or unacceptable toxicity. | |

VI. Billing Code/Availability Information

HCPCS Code(s):

- J9035 Injection, bevacizumab, 10 mg; 1 billable unit = 10 mg
- Q5107 Injection, bevacizumab-awwb, biosimilar, (mvasi), 10 mg; 1 billable unit = 10 mg
- Q5118 Injection, bevacizumab-bvzr, biosimilar, (zirabev), 10 mg; 1 billable unit = 10 mg
- Q5126 Injection, bevacizumab-maly, biosimilar, (alymsys), 10 mg; 1 billable unit = 10 mg
- Q5129 Injection, bevacizumab-adcd, biosimilar, (vegzelma), 10 mg; 1 billable unit = 10 mg
- J9999 Not otherwise classified, antineoplastic drugs (Avzivi and Jobevne only)

NDC(s):

- Avastin single-dose vial, 100 mg/4 mL solution for injection: 50242-0060-xx
- Avastin single-dose vial, 400 mg/16 mL solution for injection: 50242-0061-xx
- Mvasi single-dose vial, 100 mg/4 mL solution for injection: 55513-0206-xx
- Mvasi single-dose vial, 400 mg/16 mL solution for injection: 55513-0207-xx
- Zirabev single-dose vial, 100 mg/4 mL solution for injection: 00069-0315-xx
- Zirabev single-dose vial, 400 mg/16 mL solution for injection: 00069-0342-xx
- Alymsys single-dose vial, 100 mg/4 mL solution for injection: 70121-1754-xx
- Alymsys single-dose vial, 400 mg/16 mL solution for injection: 70121-1755-xx
- Vegzelma single-dose vial, 100 mg/4 mL solution for injection: 72606-0011-xx
- Vegzelma single-dose vial, 400 mg/16 mL solution for injection: 72606-0012-xx
- Avzivi single-dose vial, 100 mg/4 mL solution for injection: 82143-0001-xx
- Avzivi single-dose vial, 400 mg/16 mL solution for injection: 82143-0002-xx
- Jobevne single-dose vial, 100 mg/4 mL solution for injection: 83257-0009-xx
- Jobevne single-dose vial, 400 mg/16 mL solution for injection: 83257-0010-xx

VII. References (STANDARD)

- 1. Avastin [package insert]. South San Francisco, CA; Genentech, Inc.; September 2022. Accessed August 2025.
- 2. Mvasi [package insert]. Thousand Oaks, CA; Amgen, Inc.; June 2025. Accessed August 2025

- 3. Zirabev [package insert]. New York, NY; Pfizer, Inc.; August 2024. Accessed August 2025.
- 4. Alymsys [package insert]. Bridgewater, NJ; Amneal Pharmaceuticals LLC; M 2022. Accessed August 2025.
- 5. Vegzelma [package insert]. Incheon, Republic of Korea; Celltrion, Inc.; February 2023. Accessed August 2025
- 6. Avzivi [package insert]. Guangzhou, Guangdong Province, China; Bio-Thera Solutions, Ltd.; December 2023. Accessed August 2025.
- 7. Jobevne [package insert]. Cambridge, MA; Biocon Biologics Inc.; April 2025. Accessed April 2025.
- 8. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium®) bevacizumab. National Comprehensive Cancer Network, 2025. 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 August 2025.
- 9. Ceresoli GL, Zucali PA, Mencoboni M, et al. Phase II study of pemetrexed and carboplatin plus bevacizumab as first-line therapy in malignant pleural mesothelioma. Br J Cancer. 2013 Aug 6; 109(3): 552–558
- Delishaj D, Ursino S, Pasqualetti F, et al. Bevacizumab for the Treatment of Radiation-Induced Cerebral Necrosis: A Systematic Review of the Literature. J Clin Med Res. 2017 Apr; 9(4): 273–280.
- 11. 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.
- Hematology/Oncology Pharmacy Association (2019). Intravenous Cancer Drug Waste Issue Brief.
 Retrieved from http://www.hoparx.org/images/hopa/advocacy/Issue-Briefs/Drug_Waste_2019.pdf
- 13. Bach PB, Conti RM, Muller RJ, et al. Overspending driven by oversized single dose vials of cancer drugs. BMJ. 2016 Feb 29;352:i788.
- 14. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Non-Small Cell Lung Cancer, Version 7.2025. National Comprehensive Cancer Network, 2025. 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 NCCN Guidelines, go online to NCCN.org. Accessed August 2025.
- 15. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Ovarian Cancer/Fallopian Tube Cancer/Primary Peritoneal Cancer 3.2025. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed August 2025.

- 16. Thatcher N, Goldschmidt JH, Thomas M, et al. Efficacy and safety of biosimilar ABP 215 compared with bevacizumab in patients with advanced nonsquamous non-small cell lung cancer (MAPLE): a randomized, double-blind, phase III study. Clin Cancer Res. 2019;25:2088-2095.
- 17. Reinmuth N, Bryl M, Bondarenko I, et al. PF-06439535 (a Bevacizumab Biosimilar) Compared with Reference Bevacizumab (Avastin®), Both Plus Paclitaxel and Carboplatin, as First-Line Treatment for Advanced Non-Squamous Non-Small-Cell Lung Cancer: A Randomized, Double-Blind Study. BioDrugs. 2019 Oct;33(5):555-570. doi: 10.1007/s40259-019-00363-4.
- 18. Cheng AL, Qin S, Ikeda M, et al. LBA3-IMBrave150: Efficacy and safety results from a ph III study evaluating atezolizumab (atezo) + bevacizumab (bev) vs sorafenib (Sor) as first treatment (tx) for patients (pts) with unresectable hepatocellular carcinoma (HCC). Ann Oncol. 2019 Nov;30 Suppl 9:ix186-ix187.
- 19. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Hepatocellular Carcinoma 1.2025. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed August 2025.
- 20. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Small Bowel Adenocarcinoma, Version 3.2025. National Comprehensive Cancer Network, 2025. 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 NCCN Guidelines, go online to NCCN.org. Accessed August 2025.
- 21. Hurwitz H, Fehrenbacher L, Novotny W, et al. Bevacizumab plus irinotecan, fluorouracil, and leucovorin for metastatic colorectal cancer. N Engl J Med. 2004 Jun 3;350(23):2335-42.
- 22. Giantonio BJ, Catalano PJ, Meropol NJ, et al. Bevacizumab in combination with oxaliplatin, fluorouracil, and leucovorin (FOLFOX4) for previously treated metastatic colorectal cancer: results from the Eastern Cooperative Oncology Group Study E3200. J Clin Oncol. 2007;25(12):1539-1544.
- 23. Chen HX, Mooney M, Boron M, et al. Phase II multicenter trial of bevacizumab plus fluorouracil and leucovorin in patients with advanced refractory colorectal cancer: an NCI Treatment Referral Center Trial TRC-0301. J Clin Oncol. 2006;24(21):3354-3360. doi:10.1200/JCO.2005.05.1573.
- 24. Bennouna J, Sastre J, Arnold D, et al. Continuation of bevacizumab after first progression in metastatic colorectal cancer (ML18147): a randomised phase 3 trial. Lancet Oncol. 2013 Jan;14(1):29-37.
- 25. de Gramont A, Van Cutsem E, Schmoll HJ, et al. Bevacizumab plus oxaliplatin-based chemotherapy as adjuvant treatment for colon cancer (AVANT): a phase 3 randomised controlled trial. Lancet Oncol. 2012;13(12):1225-1233. doi:10.1016/S1470-2045(12)70509-0.
- 26. Allegra CJ, Yothers G, O'Connell MJ, et al. Phase III trial assessing bevacizumab in stages II and III carcinoma of the colon: results of NSABP protocol C-08. J Clin Oncol. 2011;29(1):11-16. doi:10.1200/JCO.2010.30.0855.

- 27. Sandler A, Gray R, Perry MC, et al. Paclitaxel-carboplatin alone or with bevacizumab for non-small-cell lung cancer. N Engl J Med. 2006 Dec 14;355(24):2542-50.
- 28. Reck M, von Pawel J, Zatloukal P, et al. Phase III trial of cisplatin plus gemcitabine with either placebo or bevacizumab as first-line therapy for nonsquamous non-small-cell lung cancer: AVAil. J Clin Oncol. 2009 Mar 10;27(8):1227-34.
- 29. Wick W, Gorlia T, Bendszus M, et al. Lomustine and Bevacizumab in Progressive Glioblastoma. N Engl J Med 2017; 377:1954-1963.
- 30. Friedman HS, Prados MD, Wen PY, et al. Bevacizumab alone and in combination with irinotecan in recurrent glioblastoma. J Clin Oncol. 2009 Oct 1;27(28):4733-40.
- 31. Escudier B, Pluzanska A, Koralewski P, et al. Bevacizumab plus interferon alfa-2a for treatment of metastatic renal cell carcinoma: a randomised, double-blind phase III trial. Lancet. 2007;370(9605):2103-2111. doi:10.1016/S0140-6736(07)61904-7.
- 32. Tewari KS, Sill MW, Penson RT, et al. Bevacizumab for advanced cervical cancer: final overall survival and adverse event analysis of a randomised, controlled, open-label, phase 3 trial (Gynecologic Oncology Group 240). Lancet. 2017;390(10103):1654-1663. doi:10.1016/S0140-6736(17)31607-0.
- 33. Burger RA, Brady MF, Bookman MA, et al. Incorporation of bevacizumab in the primary treatment of ovarian cancer. N Engl J Med. 2011 Dec 29;365(26):2473-83.
- 34. Pujade-Lauraine E, Hilpert F, Weber B, et al. Bevacizumab Combined With Chemotherapy for Platinum-Resistant Recurrent Ovarian Cancer: The AURELIA Open-Label Randomized Phase III Trial. Journal of Clinical Oncology 2014 32:13, 1302-1308.
- 35. Aghajanian C, Blank SV, Goff BA, et al. OCEANS: a randomized, double-blind, placebo-controlled phase III trial of chemotherapy with or without bevacizumab in patients with platinum-sensitive recurrent epithelial ovarian, primary peritoneal, or fallopian tube cancer. J Clin Oncol. 2012;30(17):2039–2045.
- 36. Coleman RL, Brady MF, Herzog TJ, et al. Bevacizumab and paclitaxel-carboplatin chemotherapy and secondary cytoreduction in recurrent, platinum-sensitive ovarian cancer (NRG Oncology/Gynecologic Oncology Group study GOG-0213): a multicentre, open-label, randomised, phase 3 trial. Lancet Oncol. 2017;18(6):779–791.
- 37. Robert NJ, Diéras V, Glaspy J, et al. RIBBON-1: randomized, double-blind, placebo-controlled, phase III trial of chemotherapy with or without bevacizumab for first-line treatment of human epidermal growth factor receptor 2-negative, locally recurrent or metastatic breast cancer. J Clin Oncol. 2011 Apr 1;29(10):1252-60.
- 38. Agulnik M, Yarber JL, Okuno SH, et al. An open-label, multicenter, phase II study of bevacizumab for the treatment of angiosarcoma and epithelioid hemangioendotheliomas. Ann Oncol. 2013;24(1):257-263. doi:10.1093/annonc/mds237.
- 39. Lorusso D, Ferrandina G, Colombo N, et al. Randomized phase II trial of carboplatin-paclitaxel (CP) compared to carboplatin-paclitaxel-bevacizumab (CP-B) in advanced (stage III-IV) or recurrent endometrial cancer: The MITO END-2 trial. Journal of Clinical Oncology 2015 33:15_suppl, 5502-5502.
- 40. Miller K, Wang M, Gralow Jet al. Paclitaxel plus bevacizumab versus paclitaxel alone for metastatic breast cancer. N Engl J Med. 2007 Dec 27;357(26):2666-76.

- 41. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Mesothelioma: Pleural 2.2025. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed August 2025.
- 42. Zalcman G, Mazieres J, Margery J, et al; French Cooperative Thoracic Intergroup (IFCT).

 Bevacizumab for newly diagnosed pleural mesothelioma in the Mesothelioma Avastin Cisplatin

 Pemetrexed Study (MAPS): a randomised, controlled, open-label, phase 3 trial. Lancet. 2016 Apr
 2;387(10026):1405-1414.
- 43. Park MS, Patel SR, Ludwig JA, et al. Activity of temozolomide and bevacizumab in the treatment of locally advanced, recurrent, and metastatic hemangiopericytoma and malignant solitary fibrous tumor. Cancer. 2011 Nov 1;117(21):4939-47. doi: 10.1002/cncr.26098.
- 44. Rose PG, Ali S, Moslemi-Kebria M, et al. Paclitaxel, Carboplatin, and Bevacizumab in Advanced and Recurrent Endometrial Carcinoma. Int J Gynecol Cancer. 2017 Mar;27(3):452-458. doi: 10.1097/IGC.0000000000000891.
- 45. Aghajanian C, Sill MW, Darcy KM, et al. Phase II trial of bevacizumab in recurrent or persistent endometrial cancer: a Gynecologic Oncology Group study. J Clin Oncol. 2011 Jun 1;29(16):2259-65. doi: 10.1200/JCO.2010.32.6397.
- 46. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Mesothelioma: Peritoneal 2.2025. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed August 2025.
- 47. Raghav KPS, Overman MJ, Liu S, et al. A phase II trial of atezolizumab and bevacizumab in patients with relapsed/refractory and unresectable malignant peritoneal mesothelioma. J Clin Oncol 2020;38:9013-9013.
- 48. Grill J, Massimino M, Bouffet E, et al. Phase II, Open-Label, Randomized, Multicenter Trial (HERBY) of Bevacizumab in Pediatric Patients With Newly Diagnosed High-Grade Glioma. J Clin Oncol 2018 Apr 1;36(10):951-958. doi: 10.1200/JCO.2017.76.0611. Epub 2018 Feb 7.
- 49. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Colon Cancer Version 4.2025. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed August 2025.
- 50. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Rectal Cancer Version 2.2025. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed August 2025.
- 51. Frumovitz M, Munsell MF, Burzawa JK, et al. Combination therapy with topotecan, paclitaxel, and bevacizumab improves progression-free survival in recurrent small cell neuroendocrine

- carcinoma of the cervix. Gynecol Oncol. 2017 Jan;144(1):46-50. doi: 10.1016/j.ygyno.2016.10.040. Epub 2016 Nov 4. PMID: 27823771; PMCID: PMC5873577.
- 52. Prager GW, Taieb J, Fakih M, et al.; SUNLIGHT Investigators. Trifluridine-Tipiracil and Bevacizumab in Refractory Metastatic Colorectal Cancer. N Engl J Med. 2023 May 4;388(18):1657-1667. Doi: 10.1056/NEJMoa2214963. PMID: 37133585.
- 53. Bearz A, Talamini R, Rossoni G, et al. Re-challenge with pemetrexed in advanced mesothelioma: a multi-institutional experience. BMC Res Notes 2012;5:482
- 54. Nagao S, Kogiku A, Suzuki K, et al. A phase II study of the combination chemotherapy of bevacizumab and gemcitabine in women with platinum-resistant recurrent epithelial ovarian, primary peritoneal, or fallopian tube cancer. J Ovarian Res 2020;13:14
- 55. Gulhati P, Raghav K, Shroff RT, et al. Bevacizumab combined with capecitabine and oxaliplatin in patients with advanced adenocarcinoma of the small bowel or ampulla of vater: A single-center, open-label, phase 2 study. Cancer 2017;123:1011-1017
- 56. Qin S, Chen M, Cheng AL, Kaseb AO, et al. Atezolizumab plus bevacizumab versus active surveillance in patients with resected or ablated high-risk hepatocellular carcinoma (IMbrave050): a randomised, open-label, multicentre, phase 3 trial. Lancet. 2023 Nov 18;402(10415):1835-1847. doi: 10.1016/S0140-6736(23)01796-8.
- 57. Grill J, Massimino M, Bouffet E, et al. Phase II, open-label, randomized, multicenter trial (HERBY) of bevacizumab in pediatric patients with newly diagnosed highgrade glioma. J Clin Oncol 2018;36:951-958.
- 58. Peyrl A, Chocholous M, Kieran MW, et al. Antiangiogenic metronomic therapy for children with recurrent embryonal brain tumors. Pediatr Blood Cancer 2012;59:511-517.
- 59. Slavc I, Mayr L, Stepien N, et al. Improved long-term survival of patients with recurrent medulloblastoma treated with a "MEMMAT-like" metronomic antiangiogenic approach. Cancers (Basel) 2022;14:5128.
- 60. Winnicki C, Leblond P, Bourdeaut F, et al. Retrospective national "Real Life" experience of the SFCE with the metronomic MEMMAT and MEMMAT-like protocol. J Clin Med 2023;12:1415.
- 61. Levy AS, Krailo M, Chi S, et al. Temozolomide with irinotecan versus temozolomide, irinotecan plus bevacizumab for recurrent medulloblastoma of childhood: Report of a COG randomized Phase II screening trial. Pediatr Blood Cancer 2021;68:e29031
- 62. Colombo N, Dubot C, Lorusso D, et al. Pembrolizumab for persistent, recurrent, or metastatic cervical cancer. N Engl J Med 2021;385:1856-1867.
- 63. Levin VA, Bidaut L, Hou P, et al. Randomized double-blind placebo-controlled trial of bevacizumab therapy for radiation necrosis of the central nervous system. Int J Radiat Oncol Biol Phys 2011;79:1487-1495.
- 64. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Bevacizumab: Central Nervous System Cancers Chemotherapy Order Template, CNS3. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed June 2025.

- 65. Plotkin SR, Duda DG, Muzikansky A, et al. Multicenter, prospective, phase II and biomarker study of high-dose bevacizumab as induction therapy in patients with neurofibromatosis type 2 and progressive vestibular Schwannoma. J Clin Oncol 2019;37:3446-3454.
- 66. Oaknin A, Gladieff L, Martínez-García J, et al. Atezolizumab plus bevacizumab and chemotherapy for metastatic, persistent, or recurrent cervical cancer (BEATcc): a randomised, open-label, phase 3 trial. Lancet 2024;403:31-43.
- 67. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Uterine Neoplasms Version 3.2025. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed August 2025.
- 68. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Bevacizumab: Endometrial Carcinoma Chemotherapy Order Template, UTE8. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed May 2025.
- 69. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for PACLitaxel/CARBOplatin + Bevacizumab: Endometrial Carcinoma Chemotherapy Order Template, UTE20. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed May 2025.
- 70. Avery RA, Hwang EI, Jakacki RI, et al. Marked recovery of vision in children with optic pathway gliomas treated with bevacizumab. JAMA Ophthalmol. 2014 Jan;132(1):111-4. doi: 10.1001/jamaophthalmol.2013.5819. PMID: 24232489
- 71. Bennebroek CAM, van Zwol J, Porro GL et al. Impact of Bevacizumab on Visual Function, Tumor Size, and Toxicity in Pediatric Progressive Optic Pathway Glioma: A Retrospective Nationwide Multicentre Study. Cancers (Basel). 2022 Dec 10;14(24):6087. doi: 10.3390/cancers14246087. PMID: 36551572; PMCID: PMC9776082.
- 72. Zhukova N, Rajagopal R, Lam A, et al. Use of bevacizumab as a single agent or in adjunct with traditional chemotherapy regimens in children with unresectable or progressive low-grade glioma. Cancer Med. 2019;8(1):40-50. doi:10.1002/cam4.1799
- 73. Park M. Recent Update in Pharmacological Agents for Optic Pathway Glioma. Brain Tumor Res Treat. 2022 Apr;10(2):101-107. https://doi.org/10.14791/btrt.2022.0006
- 74. Kalra M, Heath JA, Kellie SJ, et al. Confirmation of bevacizumab activity, and maintenance of efficacy in retreatment after subsequent relapse, in pediatric low-grade glioma. J Pediatr Hematol Oncol 2015;37:e341–e346.
- 75. Blakeley JO, Ye X, Duda DG, et al: Efficacy and biomarker study of bevacizumab for hearing loss resulting from neurofibromatosis type 2-associated vestibular schwannomas. J Clin Oncol 34:1669-1675, 2016.

- 76. Plotkin SR, Merker VL, Halpin C, et al. Bevacizumab for progressive vestibular Schwannoma in Neurofibromatosis type 2. Otology & Neurotology. 2012;33(6):1046-1052
- 77. National Government Services, Inc. Local Coverage Article for Billing and Coding: Bevacizumab and biosimilars (A52370). Centers for Medicare & Medicaid Services, Inc. Updated on 05/22/2025 with effective date 10/01/2024. Accessed August 2025.

VIII. References (ENHANCED)

- 1e. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Cervical Cancer, Version 4.2025. National Comprehensive Cancer Network, 2025. 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 NCCN Guidelines, go online to NCCN.org. Accessed August 2025.
- 2e. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Kidney Cancer, Version 1.2026. National Comprehensive Cancer Network, 2025. 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 NCCN Guidelines, go online to NCCN.org. Accessed August 2025.
- 3e. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Central Nervous System Cancer, Version 1.2025. National Comprehensive Cancer Network, 2025. 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 NCCN Guidelines, go online to NCCN.org. Accessed August 2025.
- 4e. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Soft Tissue Sarcoma, Version 1.2025. National Comprehensive Cancer Network, 2025. 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 NCCN Guidelines, go online to NCCN.org. Accessed August 2025.
- 5e. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Uterine Neoplasms, Version 3.2025. National Comprehensive Cancer Network, 2025. 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 NCCN Guidelines, go online to NCCN.org. Accessed August 2025.
- 6e. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Vulvar Cancer, Version 1.2025. National Comprehensive Cancer Network, 2025. 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 NCCN Guidelines, go online to NCCN.org. Accessed August 2025.
- 7e. Hochster HS, Hart LL, Ramanathan RK, et al. Safety and efficacy of oxaliplatin and fluoropyrimidine regimens with or without bevacizumab as first-line treatment of metastatic colorectal cancer: results of the TREE Study. J Clin Oncol. 2008 Jul 20;26(21):3523-9.
- 8e. Saltz LB, Clarke S, Díaz-Rubio E, et al. Bevacizumab in combination with oxaliplatin-based chemotherapy as first-line therapy in metastatic colorectal cancer: a randomized phase III study. J Clin Oncol. 2008 Apr 20;26(12):2013-9.
- 9e. Loupakis F, Cremolini C, Masi G, et al. Initial therapy with FOLFOXIRI and bevacizumab for metastatic colorectal cancer. N Engl J Med. 2014 Oct 23;371(17):1609-18.
- 10e. Cremolini C, Loupakis F, Antoniotti C, et al. FOLFOXIRI plus bevacizumab versus FOLFIRI plus bevacizumab as first-line treatment of patients with metastatic colorectal cancer: updated overall survival and molecular subgroup analyses of the open-label, phase 3 TRIBE study. Lancet Oncol. 2015 Oct;16(13):1306-15.
- 11e. Cunningham D, Lang I, Marcuello E, et al. Bevacizumab plus capecitabine versus capecitabine alone in elderly patients with previously untreated metastatic colorectal cancer (AVEX): an open-label, randomised phase 3 trial. Lancet Oncol. 2013 Oct;14(11):1077-1085.
- 12e. Kabbinavar FF, Schulz J, McCleod M, et al. Addition of bevacizumab to bolus fluorouracil and leucovorin in first-line metastatic colorectal cancer: results of a randomized phase II trial. J Clin Oncol. 2005 Jun 1;23(16):3697-705.
- 13e. Van Cutsem E, Köhne CH, Hitre E, et al. Cetuximab and Chemotherapy as Initial Treatment for Metastatic Colorectal Cancer. N Engl J Med 2009; 360:1408-1417.
- 14e. Van Cutsem E, Köhne CH, Láng I, et al. Cetuximab plus irinotecan, fluorouracil, and leucovorin as first-line treatment for metastatic colorectal cancer: updated analysis of overall survival according to tumor KRAS and BRAF mutation status. J Clin Oncol. 2011 May 20;29(15):2011-9.
- 15e. Qin S, Li J, Wang L, et al. Efficacy and Tolerability of First-Line Cetuximab Plus Leucovorin, Fluorouracil, and Oxaliplatin (FOLFOX-4) Versus FOLFOX-4 in Patients With RAS Wild-Type Metastatic Colorectal Cancer: The Open-Label, Randomized, Phase III TAILOR Trial [published online ahead of print, 2018 Sep 10]. J Clin Oncol. 2018;36(30):JCO2018783183.
- 16e. Douillard JY, Oliner KS, Siena S, et al. Panitumumab-FOLFOX4 treatment and RAS mutations in colorectal cancer. N Engl J Med. 2013 Sep 12;369(11):1023-34.
- 17e. Douillard JY, Siena S, Cassidy J, et al. Final results from PRIME: randomized phase III study of panitumumab with FOLFOX4 for first-line treatment of metastatic colorectal cancer. Ann Oncol. 2014 Jul;25(7):1346-55.
- 18e. Köhne CH, Hofheinz R, Mineur L, et al. First-line panitumumab plus irinotecan/5-fluorouracil/leucovorin treatment in patients with metastatic colorectal cancer. J Cancer Res Clin Oncol. 2012 Jan;138(1):65-72.
- 19e. Heinemann V, von Weikersthal LF, Decker T, et al. FOLFIRI plus cetuximab versus FOLFIRI plus bevacizumab as first-line treatment for patients with metastatic colorectal cancer (FIRE-3): a randomised, open-label, phase 3 trial. Lancet Oncol. 2014 Sep;15(10):1065-75.
- 20e. Heinemann V, Modest DP, von Weikersthal LF, et al. Gender and tumor location as predictors for efficacy: Influence on endpoints in first-line treatment with FOLFIRI in combination with

- cetuximab or bevacizumab in the AIO KRK 0306 (FIRE3) trial. Journal of Clinical Oncology 2014 32:15_suppl, 3600-3600.
- 21e. Venook AP, Niedzwiecki D, Lenz HJ, et al. Effect of First-Line Chemotherapy Combined With Cetuximab or Bevacizumab on Overall Survival in Patients With KRAS Wild-Type Advanced or Metastatic Colorectal Cancer: A Randomized Clinical Trial. JAMA. 2017;317(23):2392–2401.
- 22e. Venook AP, Niedzwiecki D, Innocenti F, et al. Impact of primary (1º) tumor location on overall survival (OS) and progression-free survival (PFS) in patients (pts) with metastatic colorectal cancer (mCRC): Analysis of CALGB/SWOG 80405 (Alliance). J Clin Oncol 34, 2016 (suppl; abstr 3504).
- 23e. Schwartzberg LS, Rivera F, Karthaus M, et al. PEAK: a randomized, multicenter phase II study of panitumumab plus modified fluorouracil, leucovorin, and oxaliplatin (mFOLFOX6) or bevacizumab plus mFOLFOX6 in patients with previously untreated, unresectable, wild-type KRAS exon 2 metastatic colorectal cancer. J Clin Oncol. 2014 Jul 20;32(21):2240-7.
- 24e. Holch JW, Ricard I, Stintzing S, et al. The relevance of primary tumour location in patients with metastatic colorectal cancer: A meta-analysis of first-line clinical trials. Eur J Cancer. 2017 Jan;70:87-98.
- 25e. Hecht JR, Cohn A, Dakhil S, et al. SPIRITT: A Randomized, Multicenter, Phase II Study of Panitumumab with FOLFIRI and Bevacizumab with FOLFIRI as Second-Line Treatment in Patients with Unresectable Wild Type KRAS Metastatic Colorectal Cancer. Clin Colorectal Cancer. 2015 Jun;14(2):72-80.
- 26e. Van Cutsem E, Peeters M, Siena S, et al. Open-label phase III trial of panitumumab plus best supportive care compared with best supportive care alone in patients with chemotherapy-refractory metastatic colorectal cancer. J Clin Oncol. 2007 May 1;25(13):1658-64.
- 27e. Amado RG, Wolf M, Peeters M, et al. Wild-type KRAS is required for panitumumab efficacy in patients with metastatic colorectal cancer. J Clin Oncol. 2008 Apr 1;26(10):1626-34.
- 28e. Kim TW, Elme A, Kusic Z, et al. A phase 3 trial evaluating panitumumab plus best supportive care vs best supportive care in chemorefractory wild-type KRAS or RAS metastatic colorectal cancer. Br J Cancer. 2016;115(10):1206–1214.
- 29e. Peeters M, Price TJ, Cervantes A, et al. Randomized phase III study of panitumumab with fluorouracil, leucovorin, and irinotecan (FOLFIRI) compared with FOLFIRI alone as second-line treatment in patients with metastatic colorectal cancer. J Clin Oncol. 2010 Nov 1;28(31):4706-13.
- 30e. Sobrero AF, Maurel J, Fehrenbacher L, et al. EPIC: phase III trial of cetuximab plus irinotecan after fluoropyrimidine and oxaliplatin failure in patients with metastatic colorectal cancer. J Clin Oncol. 2008 May 10;26(14):2311-9.
- 31e. Price TJ, Peeters M, Kim TW, et al. Panitumumab versus cetuximab in patients with chemotherapy-refractory wild-type KRAS exon 2 metastatic colorectal cancer (ASPECCT): a randomised, multicentre, open-label, non-inferiority phase 3 study. Lancet Oncol. 2014 May;15(6):569-79.
- 32e. Van Cutsem E, Tabernero J, Lakomy R, et al. Addition of aflibercept to fluorouracil, leucovorin, and irinotecan improves survival in a phase III randomized trial in patients with metastatic

- colorectal cancer previously treated with an oxaliplatin-based regimen. J Clin Oncol. 2012 Oct 1;30(28):3499-506.
- 33e. Tabernero J, Van Cutsem E, Lakomý R, et al. Aflibercept versus placebo in combination with fluorouracil, leucovorin and irinotecan in the treatment of previously treated metastatic colorectal cancer: prespecified subgroup analyses from the VELOUR trial. Eur J Cancer. 2014 Jan;50(2):320-31.
- 34e. Tabernero J, Yoshino T, Cohn AL, et al. Ramucirumab versus placebo in combination with second-line FOLFIRI in patients with metastatic colorectal carcinoma that progressed during or after first-line therapy with bevacizumab, oxaliplatin, and a fluoropyrimidine (RAISE): a randomised, double-blind, multicentre, phase 3 study. Lancet Oncol. 2015 May;16(5):499-508.
- 35e. Le DT, Uram JN, Wang H, et al. PD-1 Blockade in Tumors with Mismatch-Repair Deficiency. N Engl J Med. 2015;372(26):2509–2520.
- 36e. Overman MJ, McDermott R, Leach JL, et al. Nivolumab in patients with metastatic DNA mismatch repair-deficient or microsatellite instability-high colorectal cancer (CheckMate 142): an open-label, multicentre, phase 2 study [published correction appears in Lancet Oncol. 2017 Sep;18(9):e510]. Lancet Oncol. 2017;18(9):1182–1191.
- 37e. Hiret S, Borg C, Bertaut A, et al. Bevacizumab or cetuximab plus chemotherapy after progression with bevacizumab plus chemotherapy in patients with wtKRAS metastatic colorectal cancer: A randomized phase II study (Prodige 18 –UNICANCER GI). Journal of Clinical Oncology 2016 34:15_suppl, 3514-3514.
- 38e. 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.
- 39e. Socinski MA, Jotte RM, Cappuzzo F, et al. Atezolizumab for First-Line Treatment of Metastatic Nonsquamous NSCLC. N Engl J Med. 2018 Jun 14;378(24):2288-2301.
- 40e. Gandhi L, Rodríguez-Abreu D, Gadgeel S, et al. Pembrolizumab plus Chemotherapy in Metastatic Non–Small-Cell Lung Cancer. N Engl J Med 2018; 378:2078-2092.
- 41e. Fossella F, Pereira JR, von Pawel J, et al. Randomized, multinational, phase III study of docetaxel plus platinum combinations versus vinorelbine plus cisplatin for advanced non-small-cell lung cancer: the TAX 326 study group. J Clin Oncol. 2003 Aug 15;21(16):3016-24.
- 42e. Ohe Y, Ohashi Y, Kubota K, et al. Randomized phase III study of cisplatin plus irinotecan versus carboplatin plus paclitaxel, cisplatin plus gemcitabine, and cisplatin plus vinorelbine for advanced non-small-cell lung cancer: Four-Arm Cooperative Study in Japan. Ann Oncol. 2007 Feb;18(2):317-23
- 43e. Cardenal F, López-Cabrerizo MP, Antón A, et al. Randomized phase III study of gemcitabine-cisplatin versus etoposide-cisplatin in the treatment of locally advanced or metastatic non-small-cell lung cancer. J Clin Oncol. 1999 Jan;17(1):12-8.
- 44e. Patel JD, Socinski MA, Garon EB, et al. PointBreak: a randomized phase III study of pemetrexed plus carboplatin and bevacizumab followed by maintenance pemetrexed and bevacizumab versus paclitaxel plus carboplatin and bevacizumab followed by maintenance bevacizumab in patients with stage IIIB or IV nonsquamous non-small-cell lung cancer. J Clin Oncol. 2013;31(34):4349–4357.

- 45e. Barlesi F, Scherpereel A, Rittmeyer A, et al. Randomized phase III trial of maintenance bevacizumab with or without pemetrexed after first-line induction with bevacizumab, cisplatin, and pemetrexed in advanced nonsquamous non-small-cell lung cancer: AVAPERL (MO22089). J Clin Oncol. 2013 Aug 20;31(24):3004-11.
- 46e. Gridelli C, de Castro Carpeno J, Dingemans AC, et al. Safety and Efficacy of Bevacizumab Plus Standard-of-Care Treatment Beyond Disease Progression in Patients With Advanced Non-Small Cell Lung Cancer: The AvaALL Randomized Clinical Trial. JAMA Oncol. 2018 Dec 1;4(12):e183486.
- 47e. Borghaei H, Paz-Ares L, Horn L, et al. Nivolumab versus Docetaxel in Advanced Nonsquamous Non-Small-Cell Lung Cancer. N Engl J Med. 2015;373(17):1627–1639.
- 48e. 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):1540-50.
- 49e. Barlesi F, Park K, Ciardiello F, et al. Primary analysis from OAK, a randomized phase III study comparing atezolizumab with docetaxel in 2L/3L NSCLC. Annals of Oncology, Volume 27, Issue suppl_6, 1 October 2016, LBA44_PR.
- 50e. Garon EB, Ciuleanu TE, Arrieta O, et al. Ramucirumab plus docetaxel versus placebo plus docetaxel for second-line treatment of stage IV non-small-cell lung cancer after disease progression on platinum-based therapy (REVEL): a multicentre, double-blind, randomised phase 3 trial. Lancet. 2014 Aug 23;384(9944):665-73
- 51e. Moore DH, Blessing JA, McQuellon RP, et al. Phase III study of cisplatin with or without paclitaxel in stage IVB, recurrent, or persistent squamous cell carcinoma of the cervix: a gynecologic oncology group study. J Clin Oncol. 2004 Aug 1;22(15):3113-9.
- 52e. Kitagawa R, Katsumata N, Shibata T, et al. Paclitaxel Plus Carboplatin Versus Paclitaxel Plus Cisplatin in Metastatic or Recurrent Cervical Cancer: The Open-Label Randomized Phase III Trial JCOG0505. J Clin Oncol. 2015 Jul 1;33(19):2129-35.
- 53e. Monk BJ, Sill MW, Burger RA, Gray HJ, Buekers TE, Roman LD. Phase II trial of bevacizumab in the treatment of persistent or recurrent squamous cell carcinoma of the cervix: a gynecologic oncology group study. J Clin Oncol. 2009;27(7):1069–1074.
- 54e. Chung HC, Schellens JHM, Delord JP, et al. Pembrolizumab treatment of advanced cervical cancer: Updated results from the phase 2 KEYNOTE-158 study. J Clin Oncol 36, 2018 (suppl; abstr 5522).
- 55e. Miller K, Wang M, Gralow J, et al. Paclitaxel plus Bevacizumab versus Paclitaxel Alone for Metastatic Breast Cancer. N Engl J Med 2007; 357:2666-2676.
- 56e. Miles DW, Chan A, Dirix LY, et al. Phase III study of bevacizumab plus docetaxel compared with placebo plus docetaxel for the first-line treatment of human epidermal growth factor receptor 2-negative metastatic breast cancer. J Clin Oncol. 2010 Jul 10;28(20):3239-47.
- 57e. Nabholtz JM, Falkson C, Campos D, et al. Docetaxel and doxorubicin compared with doxorubicin and cyclophosphamide as first-line chemotherapy for metastatic breast cancer: results of a randomized, multicenter, phase III trial. J Clin Oncol. 2003 Mar 15;21(6):968-75.
- 58e. Langley RE, Carmichael J, Jones AL, et al. Phase III trial of epirubicin plus paclitaxel compared with epirubicin plus cyclophosphamide as first-line chemotherapy for metastatic breast cancer:

- United Kingdom National Cancer Research Institute trial AB01. J Clin Oncol. 2005 Nov 20;23(33):8322-30.
- 59e. Mavroudis D, Papakotoulas P, Ardavanis A, et al. Randomized phase III trial comparing docetaxel plus epirubicin versus docetaxel plus capecitabine as first-line treatment in women with advanced breast cancer. Ann Oncol. 2010 Jan;21(1):48-54.
- 60e. Albain KS, Nag SM, Calderillo-Ruiz G, et al. Gemcitabine plus Paclitaxel versus Paclitaxel monotherapy in patients with metastatic breast cancer and prior anthracycline treatment. J Clin Oncol. 2008 Aug 20;26(24):3950-7.
- 61e. Rugo HS, Barry WT, Moreno-Aspitia A, et al. Randomized Phase III Trial of Paclitaxel Once Per Week Compared With Nanoparticle Albumin-Bound Nab-Paclitaxel Once Per Week or Ixabepilone With Bevacizumab As First-Line Chemotherapy for Locally Recurrent or Metastatic Breast Cancer: CALGB 40502/NCCTG N063H (Alliance). J Clin Oncol. 2015;33(21):2361–2369. Lancet. 2007 Dec 22;370(9605):2103-11.
- 62e. Rini BI, Halabi S, Rosenberg JE, et al. Phase III trial of bevacizumab plus interferon alfa versus interferon alfa monotherapy in patients with metastatic renal cell carcinoma: final results of CALGB 90206. J Clin Oncol. 2010;28(13):2137–2143.
- 63e. Sternberg CN, Davis ID, Mardiak J, et al. Pazopanib in locally advanced or metastatic renal cell carcinoma: results of a randomized phase III trial. J Clin Oncol. 2010 Feb 20;28(6):1061-8.
- 64e. Sternberg CN, Hawkins RE, Wagstaff J, et al. A randomised, double-blind phase III study of pazopanib in patients with advanced and/or metastatic renal cell carcinoma: final overall survival results and safety update. Eur J Cancer. 2013 Apr;49(6):1287-96.
- 65e. Motzer RJ, Hutson TE, Tomczak P, et al. Sunitinib versus interferon alfa in metastatic renal-cell carcinoma. N Engl J Med. 2007 Jan 11;356(2):115-24.
- 66e. Motzer RJ, Tannir NM, McDermott DF, et al. Nivolumab plus Ipilimumab versus Sunitinib in Advanced Renal-Cell Carcinoma. N Engl J Med. 2018;378(14):1277–1290.
- 67e. Hammers HJ, Plimack ER1, Infante JR, et al. Safety and Efficacy of Nivolumab in Combination With Ipilimumab in Metastatic Renal Cell Carcinoma: The CheckMate 016 Study. J Clin Oncol. 2017 Dec 1;35(34):3851-3858.
- 68e. Hudes G, Carducci M, Tomczak P, et al. Temsirolimus, interferon alfa, or both for advanced renal-cell carcinoma. N Engl J Med. 2007 May 31;356(22):2271-81.
- 69e. Choueiri TK, Halabi S, Sanford BL, et al. Cabozantinib Versus Sunitinib As Initial Targeted Therapy for Patients With Metastatic Renal Cell Carcinoma of Poor or Intermediate Risk: The Alliance A031203 CABOSUN Trial. J Clin Oncol. 2016;35(6):591–597.
- 70e. Irshad T, Olencki T, Zynger DL, et al. Bevacizumab in metastatic papillary renal cell carcinoma (PRCC). Journal of Clinical Oncology 2011 29:15_suppl, e15158-e15158.
- 71e. Voss MH, Molina AM, Chen YB, et al. Phase II Trial and Correlative Genomic Analysis of Everolimus Plus Bevacizumab in Advanced Non-Clear Cell Renal Cell Carcinoma. J Clin Oncol. 2016;34(32):3846–3853.
- 72e. Lee JL, Ahn JH, Lim HY, et al. Multicenter phase II study of sunitinib in patients with non-clear cell renal cell carcinoma. Ann Oncol. 2012 Aug;23(8):2108-14.

- 73e. Armstrong AJ, Halabi S, Eisen T, et al. Everolimus versus sunitinib for patients with metastatic non-clear cell renal cell carcinoma (ASPEN): a multicentre, open-label, randomised phase 2 trial. Lancet Oncol. 2016 Mar;17(3):378-88.
- 74e. Srinivasan, R, Gurram S, Al Harthy M,. et al. Results from a phase II study of bevacizumab and erlotinib in subjects with advanced hereditary leiomyomatosis and renal cell cancer (HLRCC) or sporadic papillary renal cell cancer. J Clin Oncol. 2020;38(15 suppl):5004-5004.
- 75e. Dutcher JP, de Souza P, McDermott D, et al. Effect of temsirolimus versus interferon-alpha on outcome of patients with advanced renal cell carcinoma of different tumor histologies. Med Oncol. 2009;26(2):202-9.
- 76e. Norden AD, Young GS, Setayesh K, et al. Bevacizumab for recurrent malignant gliomas: efficacy, toxicity, and patterns of recurrence. Neurology. 2008 Mar 4;70(10):779-87.
- 77e. Chamberlain MC, Johnston S. Bevacizumab for recurrent alkylator-refractory anaplastic oligodendroglioma. Cancer. 2009 Apr 15;115(8):1734-43
- 78e. Chamberlain MC, Johnston S. Salvage chemotherapy with bevacizumab for recurrent alkylator-refractory anaplastic astrocytoma. J Neurooncol. 2009 Feb;91(3):359-67.
- 79e. Taillibert S, Vincent LA, Granger B, et al. Bevacizumab and irinotecan for recurrent oligodendroglial tumors. Neurology. 2009 May 5;72(18):1601-6.
- 80e. Vredenburgh JJ, Desjardins A, Herndon JE 2nd, et al. Phase II trial of bevacizumab and irinotecan in recurrent malignant glioma. Clin Cancer Res. 2007 Feb 15;13(4):1253-9.
- 81e. Soffietti R, Rudà R, Trevisan E, et al. Phase II study of bevacizumab and nitrosourea in patients with recurrent malignant glioma: A multicenter Italian study. Journal of Clinical Oncology 2009 27:15S, 2012-2012.
- 82e. Yung WK, Prados MD, Yaya-Tur R, et al. Multicenter phase II trial of temozolomide in patients with anaplastic astrocytoma or anaplastic oligoastrocytoma at first relapse. Temodal Brain Tumor Group. J Clin Oncol. 1999 Sep;17(9):2762-71.
- 83e. Prados M, Rodriguez L, Chamberlain M, et al. Treatment of recurrent gliomas with 1,3-bis(2-chloroethyl)-1-nitrosourea and alpha-difluoromethylornithine. Neurosurgery. 1989 Jun;24(6):806-9.
- 84e. Soffietti R, Rudà R, Bradac GB, Schiffer D. PCV chemotherapy for recurrent oligodendrogliomas and oligoastrocytomas. Neurosurgery. 1998 Nov;43(5):1066-73.
- 85e. Taal W, Oosterkamp HM, Walenkamp AM, et al. Single-agent bevacizumab or lomustine versus a combination of bevacizumab plus lomustine in patients with recurrent glioblastoma (BELOB trial): a randomised controlled phase 2 trial. Lancet Oncol. 2014 Aug;15(9):943-53.
- 86e. Kreisl TN, Kim L, Moore K, et al. Phase II trial of single-agent bevacizumab followed by bevacizumab plus irinotecan at tumor progression in recurrent glioblastoma. J Clin Oncol. 2008;27(5):740–745.
- 87e. Vredenburgh JJ, Desjardins A, Herndon JE 2nd, et al. Bevacizumab plus irinotecan in recurrent glioblastoma multiforme. J Clin Oncol. 2007 Oct 20;25(30):4722-9.
- 88e. Yung WK, Albright RE, Olson J, et al. A phase II study of temozolomide vs. procarbazine in patients with glioblastoma multiforme at first relapse. Br J Cancer. 2000;83(5):588–593.

- 89e. Weller M, Tabatabai G, Kästner B, et al. MGMT Promoter Methylation Is a Strong Prognostic Biomarker for Benefit from Dose-Intensified Temozolomide Rechallenge in Progressive Glioblastoma: The DIRECTOR Trial. Clin Cancer Res. 2015 May 1;21(9):2057-64
- 90e. Perry JR, Bélanger K, Mason WP, et al. Phase II trial of continuous dose-intense temozolomide in recurrent malignant glioma: RESCUE study. J Clin Oncol. 2010 Apr 20;28(12):2051-7.
- 91e. Brandes AA, Tosoni A, Amistà P, et al. How effective is BCNU in recurrent glioblastoma in the modern era? A phase II trial. Neurology. 2004 Oct 12;63(7):1281-4.
- 92e. Carvalho BF, Fernandes AC, Almeida DS, et al. Second-Line Chemotherapy in Recurrent Glioblastoma: A 2-Cohort Study. Oncol Res Treat. 2015;38(7-8):348-54.
- 93e. Schmidt F, Fischer J, Herrlinger U, et al. PCV chemotherapy for recurrent glioblastoma. Neurology. 2006 Feb 28;66(4):587-9.
- 94e. Green RM, Cloughesy TF, Stupp R, et al. Bevacizumab for recurrent ependymoma. Neurology. 2009;73(20):1677–1680.
- 95e. Brandes AA, Cavallo G, Reni M, et al. A multicenter retrospective study of chemotherapy for recurrent intracranial ependymal tumors in adults by the Gruppo Italiano Cooperativo di Neuro-Oncologia. Cancer. 2005 Jul 1;104(1):143-8.
- 96e. Kaley T, Nolan C, Carver A, Omuro A. Bevacizumab for acute neurologic deterioration in patients with glioblastoma. CNS Oncol. 2013 Sep;2(5):413-8.
- 97e. Levin VA, Bidaut L, Hou P, et al. Randomized double-blind placebo-controlled trial of bevacizumab therapy for radiation necrosis of the central nervous system [published correction appears in Int J Radiat Oncol Biol Phys. 2012 Sep 1;84(1):6. Grewal, Jai [added]]. Int J Radiat Oncol Biol Phys. 2011;79(5):1487–1495.
- 98e. Xu Y, Rong X, Hu W, et al. Bevacizumab Monotherapy Reduces Radiation-induced Brain Necrosis in Nasopharyngeal Carcinoma Patients: A Randomized Controlled Trial. Int J Radiat Oncol Biol Phys. 2018 Aug 1;101(5):1087-1095.
- 99e. Burger RA, Sill MW, Monk BJ, et al. Phase II trial of bevacizumab in persistent or recurrent epithelial ovarian cancer or primary peritoneal cancer: a Gynecologic Oncology Group Study. J Clin Oncol. 2007 Nov 20;25(33):5165-71.
- 100e. Gordon AN, Tonda M, Sun S, et al. Long-term survival advantage for women treated with pegylated liposomal doxorubicin compared with topotecan in a phase 3 randomized study of recurrent and refractory epithelial ovarian cancer. Gynecol Oncol. 2004 Oct;95(1):1-8.
- 101e. Aghajanian C, Goff B, Nycum LR, Wang YV, Husain A, Blank SV. Final overall survival and safety analysis of OCEANS, a phase 3 trial of chemotherapy with or without bevacizumab in patients with platinum-sensitive recurrent ovarian cancer. Gynecol Oncol. 2015;139(1):10–16.
- 102e. Pujade-Lauraine E, Wagner U, Aavall-Lundqvist E, et al. Pegylated liposomal Doxorubicin and Carboplatin compared with Paclitaxel and Carboplatin for patients with platinum-sensitive ovarian cancer in late relapse. J Clin Oncol. 2010 Jul 10;28(20):3323-9.
- 103e. Rose PG, Blessing JA, Ball HG, et al. A phase II study of docetaxel in paclitaxel-resistant ovarian and peritoneal carcinoma: a Gynecologic Oncology Group study. Gynecol Oncol. 2003 Feb;88(2):130-5.

- 104e. Rose PG, Blessing JA, Mayer AR, Homesley HD. Prolonged oral etoposide as second-line therapy for platinum-resistant and platinum-sensitive ovarian carcinoma: a Gynecologic Oncology Group study. J Clin Oncol. 1998 Feb;16(2):405-10.
- 105e. Sehouli J, Stengel D, Harter P, et al. Topotecan Weekly Versus Conventional 5-Day Schedule in Patients With Platinum-Resistant Ovarian Cancer: a randomized multicenter phase II trial of the North-Eastern German Society of Gynecological Oncology Ovarian Cancer Study Group. J Clin Oncol. 2011 Jan 10;29(2):242-8.
- 106e. Ferriss JS, Java JJ, Bookman MA, et al. Ascites predicts treatment benefit of bevacizumab in front-line therapy of advanced epithelial ovarian, fallopian tube and peritoneal cancers: an NRG Oncology/GOG study. Gynecol Oncol. 2015;139(1):17–22.
- 107e. Perren TJ, Swart AM, Pfisterer J, et al. A phase 3 trial of bevacizumab in ovarian cancer. N Engl J Med. 2011 Dec 29;365(26):2484-96.
- 108e. Oza AM, Cook AD, Pfisterer J, et al. Standard chemotherapy with or without bevacizumab for women with newly diagnosed ovarian cancer (ICON7): overall survival results of a phase 3 randomised trial. Lancet Oncol. 2015;16(8):928–936.
- 109e. Armstrong DK, Bundy B, Wenzel L, et al. Intraperitoneal cisplatin and paclitaxel in ovarian cancer. N Engl J Med. 2006 Jan 5;354(1):34-43.
- 110e. Ozols RF, Bundy BN, Greer BE, et al. Phase III trial of carboplatin and paclitaxel compared with cisplatin and paclitaxel in patients with optimally resected stage III ovarian cancer: a Gynecologic Oncology Group study. J Clin Oncol. 2003 Sep 1;21(17):3194-200.
- 111e. Pignata S, Scambia G, Ferrandina G, et al. Carboplatin plus paclitaxel versus carboplatin plus pegylated liposomal doxorubicin as first-line treatment for patients with ovarian cancer: the MITO-2 randomized phase III trial. J Clin Oncol. 2011 Sep 20;29(27):3628-35.
- 112e. Vasey PA, Jayson GC, Gordon A, et al. Phase III randomized trial of docetaxel-carboplatin versus paclitaxel-carboplatin as first-line chemotherapy for ovarian carcinoma. J Natl Cancer Inst. 2004 Nov 17;96(22):1682-91.
- 113e. Garcia YG, De Juan A, Mendiola C, et al. Phase II randomized trial of neoadjuvant (NA) chemotherapy (CT) with or without bevacizumab (Bev) in advanced epithelial ovarian cancer (EOC) (GEICO 1205/NOVA TRIAL). Journal of Clinical Oncology 2017 35:15_suppl, 5508-5508.
- 114e. Vergote I, Tropé CG, Amant F, et al. Neoadjuvant chemotherapy or primary surgery in stage IIIC or IV ovarian cancer. N Engl J Med. 2010 Sep 2;363(10):943-53.
- 115e. Onda T, Satoh T, Saito T, et al. Comparison of treatment invasiveness between upfront debulking surgery versus interval debulking surgery following neoadjuvant chemotherapy for stage III/IV ovarian, tubal, and peritoneal cancers in a phase III randomised trial: Japan Clinical Oncology Group Study JCOG0602. Eur J Cancer. 2016 Sep;64:22-31.
- 116e. Tao X, Sood AK, Deavers MT, et al. Anti-angiogenesis therapy with bevacizumab for patients with ovarian granulosa cell tumors. Gynecol Oncol. 2009;114(3):431–436.
- 117e. Brown J, Brady WE, Schink J, et al. Efficacy and safety of bevacizumab in recurrent sex cordstromal ovarian tumors: results of a phase 2 trial of the Gynecologic Oncology Group. Cancer. 2013;120(3):344–351.
- 118e. Fishman A, Kudelka AP, Tresukosol D, et al. Leuprolide acetate for treating refractory or persistent ovarian granulosa cell tumor. J Reprod Med. 1996 Jun;41(6):393-6.

- 119e. Penel N, Bui BN, Bay JO, Cupissol D, et al. Phase II trial of weekly paclitaxel for unresectable angiosarcoma: the ANGIOTAX Study. J Clin Oncol. 2008 Nov 10;26(32):5269-74.
- 120e. van Hoesel QG, Verweij J, Catimel G, et al. Phase II study with Docetaxel (Taxotere®) in advanced soft tissue sarcomas of the adult. Ann Oncol. 1994 Jul;5(6):539-42.
- 121e. Maki RG, D'Adamo DR, Keohan ML, et al. Phase II study of sorafenib in patients with metastatic or recurrent sarcomas. J Clin Oncol. 2009;27(19):3133–3140.
- 122e. George S, Merriam P, Maki RG, et al. Multicenter phase II trial of sunitinib in the treatment of nongastrointestinal stromal tumor sarcomas. J Clin Oncol. 2009;27(19):3154–3160.
- 123e. Park MS, Patel SR, Ludwig JA, et al. Activity of temozolomide and bevacizumab in the treatment of locally advanced, recurrent, and metastatic hemangiopericytoma and malignant solitary fibrous tumor. Cancer. 2011;117(21):4939–4947.
- 124e. Stacchiotti S, Negri T, Libertini M, et al. Sunitinib malate in solitary fibrous tumor (SFT). Ann Oncol. 2012 Dec;23(12):3171-9.
- 125e. Valentin T, Fournier C, Penel N, et al. Sorafenib in patients with progressive malignant solitary fibrous tumors: a subgroup analysis from a phase II study of the French Sarcoma Group (GSF/GETO). Invest New Drugs. 2013 Dec;31(6):1626-7
- 126e. Ebata T, Shimoi T, Bun S, et al. Efficacy and Safety of Pazopanib for Recurrent or Metastatic Solitary Fibrous Tumor. Oncology. 2018;94(6):340-344.
- 127e. Rose PG, Ali S, Moslemi-Kebria M, Simpkins F. Paclitaxel, Carboplatin, and Bevacizumab in Advanced and Recurrent Endometrial Carcinoma. Int J Gynecol Cancer. 2017 Mar;27(3):452-458.
- 128e. Miller, D. et al. 1.Late-Breaking Abstract 1: Randomized phase III noninferiority trial of first line chemotherapy for metastatic or recurrent endometrial carcinoma: A Gynecologic Oncology Group study. Gynecologic Oncology, Volume 125, Issue 3, 771.
- 129e. Fleming GF, Brunetto VL, Cella D, et al. Phase III trial of doxorubicin plus cisplatin with or without paclitaxel plus filgrastim in advanced endometrial carcinoma: a Gynecologic Oncology Group Study. J Clin Oncol. 2004 Jun 1;22(11):2159-66.
- 130e. Aghajanian C, Sill MW, Darcy KM, et al. Phase II trial of bevacizumab in recurrent or persistent endometrial cancer: a Gynecologic Oncology Group study. J Clin Oncol. 2011;29(16):2259–2265.
- 131e. Lincoln S, Blessing JA, Lee RB, Rocereto TF. Activity of paclitaxel as second-line chemotherapy in endometrial carcinoma: a Gynecologic Oncology Group study. Gynecol Oncol. 2003 Mar;88(3):277-81.
- 132e. Muggia FM, Blessing JA, Sorosky J, Reid GC. Phase II trial of the pegylated liposomal doxorubicin in previously treated metastatic endometrial cancer: a Gynecologic Oncology Group study. J Clin Oncol. 2002 May 1;20(9):2360-4.
- 133e. Oza AM, Elit L, Tsao MS, et al. Phase II study of temsirolimus in women with recurrent or metastatic endometrial cancer: a trial of the NCIC Clinical Trials Group. J Clin Oncol. 2011;29(24):3278–3285.
- 134e. Zalcman G, Mazieres J, Margery J, et al. Bevacizumab for newly diagnosed pleural mesothelioma in the Mesothelioma Avastin Cisplatin Pemetrexed Study (MAPS): a randomised, controlled, open-label, phase 3 trial. Lancet. 2016 Apr 2;387(10026):1405-1414.

- 135e. Vogelzang NJ, Rusthoven JJ, Symanowski J, et al. Phase III study of pemetrexed in combination with cisplatin versus cisplatin alone in patients with malignant pleural mesothelioma. J Clin Oncol. 2003 Jul 15;21(14):2636-44.
- 136e. Castagneto B, Botta M, Aitini E, et al. Phase II study of pemetrexed in combination with carboplatin in patients with malignant pleural mesothelioma (MPM). Ann Oncol. 2008 Feb;19(2):370-3.
- 137e. Uldrick TS, Wyvill KM, Kumar P, et al. Phase II study of bevacizumab in patients with HIV-associated Kaposi's sarcoma receiving antiretroviral therapy. J Clin Oncol. 2012;30(13):1476–1483.
- 138e. Fortino S, Santoro M, Luliano E, et al. Treatment of Kaposi's Sarcoma (KS) with nab-paclitaxel. Annals of Oncology, Volume 27, Issue suppl 4, 21 September 2016, Page iv124.
- 139e. Polizzotto MN, Uldrick TS, Wyvill KM, et al. Pomalidomide for Symptomatic Kaposi's Sarcoma in People With and Without HIV Infection: A Phase I/II Study. J Clin Oncol. 2016;34(34):4125–4131.
- 140e. Northfelt DW, Dezube BJ, Thommes JA, et al. Efficacy of pegylated-liposomal doxorubicin in the treatment of AIDS-related Kaposi's sarcoma after failure of standard chemotherapy. J Clin Oncol. 1997 Feb;15(2):653-9.
- 141e. Stebbing J, Wildfire A, Portsmouth S, et al. Paclitaxel for anthracycline-resistant AIDS-related Kaposi's sarcoma: clinical and angiogenic correlations. Ann Oncol. 2003 Nov;14(11):1660-6.
- 142e. Evans SR, Krown SE, Testa MA, et al. Phase II evaluation of low-dose oral etoposide for the treatment of relapsed or progressive AIDS-related Kaposi's sarcoma: an AIDS Clinical Trials Group clinical study. J Clin Oncol. 2002 Aug 1;20(15):3236-41.
- 143e. Busakhala NW, Waako PJ, Strother MR, et al. Randomized Phase IIA Trial of Gemcitabine Compared With Bleomycin Plus Vincristine for Treatment of Kaposi's Sarcoma in Patients on Combination Antiretroviral Therapy in Western Kenya. J Glob Oncol. 2018;4:1–9.
- 144e. Koon HB, Krown SE, Lee JY, et al. Phase II trial of imatinib in AIDS-associated Kaposi's sarcoma: AIDS Malignancy Consortium Protocol 042. J Clin Oncol. 2013;32(5):402–408.
- 145e. Shepherd FA, Beaulieu R, Gelmon K, et al. Prospective randomized trial of two dose levels of interferon alfa with zidovudine for the treatment of Kaposi's sarcoma associated with human immunodeficiency virus infection: a Canadian HIV Clinical Trials Network study. J Clin Oncol. 1998 May;16(5):1736-42.
- 146e. Little RF, Wyvill KM, Pluda JM, et al. Activity of thalidomide in AIDS-related Kaposi's sarcoma. J Clin Oncol. 2000 Jul;18(13):2593-602.
- 147e. Nasti G, Errante D, Talamini R, et al. Vinorelbine is an effective and safe drug for AIDS-related Kaposi's sarcoma: results of a phase II study. J Clin Oncol. 2000 Apr;18(7):1550-7.
- 148e. Franceschi E, Lamberti G, Visani M, et al. Temozolomide rechallenge in recurrent glioblastoma: when is it useful? Future Oncol. 2018 May;14(11):1063-1069.
- 149e. Lou E, Sumrall AL, Turner S, et al. Bevacizumab therapy for adults with recurrent/progressive meningioma: a retrospective series. J Neurooncol. 2012;109(1):63–70.
- 150e. Nayak L, Iwamoto FM, et al. Atypical and anaplastic meningiomas treated with bevacizumab. J Neurooncol. 2012 Aug;109(1):187-93.

- 151e. Pfisterer J, Shannon CM, Baumann K, et al. Bevacizumab and platinum-based combinations for recurrent ovarian cancer: a randomised, open-label, phase 3 trial. Lancet Oncol. 2020 May;21(5):699-709.
- 152e. Barber EL, Zsiros E, Lurain JR, Rademaker A, Schink JC, Neubauer NL. The combination of intravenous bevacizumab and metronomic oral cyclophosphamide is an effective regimen for platinum-resistant recurrent ovarian cancer. J Gynecol Oncol. 2013;24(3):258–264.
- 153e. Garcia AA, Hirte H, Fleming G, et al. Phase II clinical trial of bevacizumab and low-dose metronomic oral cyclophosphamide in recurrent ovarian cancer: a trial of the California, Chicago, and Princess Margaret Hospital phase II consortia. J Clin Oncol. 2008 Jan 1;26(1):76-82.
- 154e. Takayoshi K, Kusaba H, Uenomachi M, et al. Suggestion of added value by bevacizumab to chemotherapy in patients with unresectable or recurrent small bowel cancer. Cancer Chemother Pharmacol. 2017 Aug;80(2):333-342.
- 155e. Gulhati P, Raghav K, Shroff RT, et al. Bevacizumab combined with capecitabine and oxaliplatin in patients with advanced adenocarcinoma of the small bowel or ampulla of vater: A single-center, open-label, phase 2 study. Cancer. 2017;123(6):1011–1017.
- 156e. Overman MJ, Varadhachary GR, Kopetz S, et al. Phase II study of capecitabine and oxaliplatin for advanced adenocarcinoma of the small bowel and ampulla of Vater. J Clin Oncol. 2009 Jun 1;27(16):2598-603.
- 157e. Xiang XJ, Liu YW, Zhang L, et al. A phase II study of modified FOLFOX as first-line chemotherapy in advanced small bowel adenocarcinoma. Anticancer Drugs. 2012 Jun;23(5):561-6.
- 158e. Horimatsu T, Nakayama N, Moriwaki T, et al. A phase II study of 5-fluorouracil/L-leucovorin/oxaliplatin (mFOLFOX6) in Japanese patients with metastatic or unresectable small bowel adenocarcinoma. Int J Clin Oncol. 2017;22(5):905–912.
- 159e. 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.
- 160e. Motzer RJ, Penkov K, Haanen J, et al. Avelumab plus Axitinib versus Sunitinib for Advanced Renal-Cell Carcinoma. N Engl J Med. 2019;380(12):1103–1115.
- 161e. Finn RS, Qin S, Ikeda M, et al. Atezolizumab plus Bevacizumab in Unresectable Hepatocellular Carcinoma. N Engl J Med. 2020;382(20):1894-1905.
- 162e. Saito H, Fukuhara T, Furuya N, et al. Erlotinib plus bevacizumab versus erlotinib alone in patients with EGFR-positive advanced non-squamous non-small-cell lung cancer (NEJ026): interim analysis of an open-label, randomised, multicentre, phase 3 trial. Lancet Oncol. 2019 May;20(5):625-635.
- 163e. Mirza MR, Åvall Lundqvist E, Birrer MJ, et al. Niraparib plus bevacizumab versus niraparib alone for platinum-sensitive recurrent ovarian cancer (NSGO-AVANOVA2/ENGOT-ov24): a randomised, phase 2, superiority trial. Lancet Oncol. 2019 Oct;20(10):1409-1419.
- 164e. Spigel D et al. IMpower110: Interim OS Analysis of a Phase III Study of Atezolizumab (atezo) vs Platinum-Based Chemotherapy (chemo) as 1L Treatment (tx) in PD-L1—selected NSCLC [ESMO 2019 Abstract LBA78].

- 165e. Blank CU, Bono P, Larkin JMG, et al. Safety and efficacy of everolimus in patients with nonclear cell renal cell carcinoma refractory to VEGF-targeted therapy: Subgroup analysis of REACT [abstract]. J Clin Oncol 2012; 30 (5_suppl):Abstract 402.
- 166e. Desjardins A, Reardon DA, Coan A, et al. Bevacizumab and daily temozolomide for recurrent glioblastoma. Cancer. 2012 Mar 1;118(5):1302-12.
- 167e. Badruddoja MA, Pazzi M, Sanan A, et al. Phase II study of bi-weekly temozolomide plus bevacizumab for adult patients with recurrent glioblastoma. Cancer Chemother Pharmacol. 2017 Oct;80(4):715-721.
- 168e. Lombardi G, De Salvo GL, Brandes AA, et al. Regorafenib compared with lomustine in patients with relapsed glioblastoma (REGOMA): a multicentre, open-label, randomised, controlled, phase 2 trial. Lancet Oncol. 2019 Jan;20(1):110-119.
- 169e. Sezer A, Kilickap S, Gümüş M, et al. Cemiplimab monotherapy for first-line treatment of advanced non-small-cell lung cancer with PD-L1 of at least 50%: a multicentre, open-label, global, phase 3, randomised, controlled trial. Lancet. 2021 Feb 13;397(10274):592-604.
- 170e. Pfeiffer P, Yilmaz M, Möller S, et al. TAS-102 with or without bevacizumab in patients with chemorefractory metastatic colorectal cancer: an investigator-initiated, open-label, randomised, phase 2 trial. Lancet Oncol. 2020 Mar;21(3):412-420.
- 171e. van der Graaf WT, Blay JY, Chawla SP, et al. Pazopanib for metastatic soft-tissue sarcoma (PALETTE): a randomised, double-blind, placebo-controlled phase 3 trial. Lancet. 2012 May 19;379(9829):1879-86.
- 172e. McDermott DF, Lee JL, Ziobro M, et al. Open-Label, Single-Arm, Phase II Study of Pembrolizumab Monotherapy as First-Line Therapy in Patients With Advanced Non-Clear Cell Renal Cell Carcinoma. J Clin Oncol. 2021 Mar 20;39(9):1029-1039.
- 173e. Koshkin VS, Barata PC, Zhang T, et al. Clinical activity of nivolumab in patients with non-clear cell renal cell carcinoma. J Immunother Cancer. 2018;6(1):9. Published 2018 Jan 29.
- 174e. Jung KS, Lee SJ, Park SH, et al. Pazopanib for the Treatment of Non-clear Cell Renal Cell Carcinoma: A Single-Arm, Open-Label, Multicenter, Phase II Study. Cancer Res Treat. 2018;50(2):488-494.
- 175e. Park I, Lee SH, Lee JL. A Multicenter Phase II Trial of Axitinib in Patients With Recurrent or Metastatic Non-clear-cell Renal Cell Carcinoma Who Had Failed Prior Treatment With Temsirolimus. Clin Genitourin Cancer. 2018 Oct;16(5):e997-e1002.
- 176e. Cannistra SA, Matulonis UA, Penson RT, et al. Phase II study of bevacizumab in patients with platinum-resistant ovarian cancer or peritoneal serous cancer. J Clin Oncol. 2007 Nov 20;25(33):5180-6. doi: 10.1200/JCO.2007.12.0782. Erratum in: J Clin Oncol. 2008 Apr 1;26(10):1773.
- 177e. Colombo N, Dubot C, Lorusso D, et al. Pembrolizumab for Persistent, Recurrent, or Metastatic Cervical Cancer. N Engl J Med. 2021 Sep 18.
- 178e. Baas P, Scherpereel A, Nowak AK, et al. First-line nivolumab plus ipilimumab in unresectable malignant pleural mesothelioma (CheckMate 743): a multicentre, randomised, open-label, phase 3 trial. Lancet. 2021 Jan 30;397(10272):375-386. doi: 10.1016/S0140-6736(20)32714-8. Epub 2021 Jan 21. Erratum in: Lancet. 2021 Feb 20;397(10275):670.

- 179e. Raghav KPS, Overman MJ, Liu S, et al. A phase II trial of atezolizumab and bevacizumab in patients with relapsed/refractory and unresectable malignant peritoneal mesothelioma.. J Clin Oncol 2020;38:9013-9013.
- 180e. Nakagawa K, Garon EB, Seto T, et al. Ramucirumab plus erlotinib in patients with untreated, EGFR-mutated, advanced non-small-cell lung cancer (RELAY): a randomised, double-blind, placebo-controlled, phase 3 trial. Lancet Oncol. 2019 Dec;20(12):1655-1669.
- 181e. Soria JC, Ohe Y, Vansteenkiste J, et al. Osimertinib in Untreated EGFR-Mutated Advanced Non-Small-Cell Lung Cancer. N Engl J Med. 2018 Jan 11;378(2):113-125.
- 182e. Pfisterer J, Plante M, Vergote I, et al. Gemcitabine plus carboplatin significantly improves PFS and response rate without worsening quality of life for patients with platinum-sensitive recurrent ovarian cancer. J Clin Oncol 2006;24:4699-4707.
- 183e. Fennell DA, Ewings S, Ottensmeier C, et al. Nivolumab versus placebo in patients with relapsed malignant mesothelioma (CONFIRM): a multicentre, double-blind, randomised, phase 3 trial. Lancet Oncol 2021; 22:1530.
- 184e. Brada M, Stenning S, Gabe R, et al. Temozolomide versus procarbazine, lomustine, and vincristine in recurrent high-grade glioma. J Clin Oncol. 2010 Oct 20;28(30):4601-8.
- 185e. Grill J, Massimino M, Bouffet E, et al. Phase II, Open-Label, Randomized, Multicenter Trial (HERBY) of Bevacizumab in Pediatric Patients With Newly Diagnosed High-Grade Glioma. J Clin Oncol. 2018 Apr 1;36(10):951-958.
- 186e. Johnson ML, Cho BC, Luft A, et al; POSEIDON investigators. Durvalumab With or Without Tremelimumab in Combination With Chemotherapy as First-Line Therapy for Metastatic Non-Small-Cell Lung Cancer: The Phase III POSEIDON Study. J Clin Oncol. 2022 Nov 3:JCO2200975.
- 187e. Gogishvili M, Melkadze T, Makharadze T, et al. LBA51 EMPOWER-Lung 3: Cemiplimab in combination with platinum doublet chemotherapy for first-line (1L) treatment of advanced non-small cell lung cancer (NSCLC). Annals of Oncology, ISSN: 0923-7534, Vol: 32, SUPPLEMENT 5, S1328, SEPTEMBER 01, 2021. DOI10.1016/j.annonc.2021.08.2130.
- 188e. Abou-Alfa GK, Lau G, Kudo M, et al. Tremelimumab plus durvalumab in unresectable hepatocellular carcinoma. NEJM Evid 2022;1:EVIDoa2100070.
- 189e. D'Alessio A, Fulgenzi CAM, Nishida N, et al. Preliminary evidence of safety and tolerability of atezolizumab plus bevacizumab in patients with hepatocellular carcinoma and Child-Pugh A and B cirrhosis: A real-world study. Hepatology. 2022 Oct;76(4):1000-1012.
- 190e. Herzog TJ, Monk BJ, Rose PG, et al., A phase II trial of oxaliplatin, docetaxel, and bevacizumab as first-line therapy of advanced cancer of the ovary, peritoneum, and fallopian tube. Gynecologic Oncology, 2014. 132(3): p. 517-525.
- 191e. Prager GW, Taieb J, Fakih M, et a;. Trifluridine-Tipiracil and Bevacizumab in Refractory Metastatic Colorectal Cancer. N Engl J Med. 2023 May 4;388(18):1657-1667.
- 192e. Pfisterer J, Dean AP, Baumann K, et al. Carboplatin/pegylated liposomal doxorubicin/bevacizumab (CD-BEV) vs. carboplatin/gemcitabine/bevacizumab (CG BEV) in patients with recurrent ovarian cancer. A prospective randomized phase III ENGOT/GCIG-

- Intergroup study (AGO Study Group, AGO-Austria, ANZGOG, GINECO, SGCTG). Presented at: 2018 ESMO Congress; October 19-23, 2018; Munich, Germany. Abstract 9330.
- 193e. Zsiros E, Lynam S, Attwood KM, et al. Efficacy and Safety of Pembrolizumab in Combination With Bevacizumab and Oral Metronomic Cyclophosphamide in the Treatment of Recurrent Ovarian Cancer: A Phase 2 Nonrandomized Clinical Trial. JAMA Oncol. 2021 Jan 1;7(1):78-85. doi: 10.1001/jamaoncol.2020.5945. PMID: 33211063; PMCID: PMC7677872.
- 194e. Poblete S, Caulkins M, Loecher C, et al. Pembrolizumab in combination with bevacizumab and oral metronomic cyclophosphamide for recurrent epithelial ovarian, fallopian tube, or primary peritoneal cancer: Real-life clinical experience [abstract]. Ann Oncol 2022;33(Suppl): Abstract 569P. DOI:https://doi.org/10.1016/j.annonc.2022.07.697.
- 195e. Gilbert L, Oaknin A, Matulonis UA, et al. Safety and efficacy of mirvetuximab soravtansine, a folate receptor alpha ($FR\alpha$)-targeting antibody-drug conjugate (ADC), in combination with bevacizumab in patients with platinum-resistant ovarian cancer. Gynecol Oncol 2023;170:241-247.
- 196e. Qin S, Chen M, Cheng AL, et al. Atezolizumab plus bevacizumab versus active surveillance in patients with resected or ablated high-risk hepatocellular carcinoma (IMbrave050): a randomised, open-label, multicentre, phase 3 trial. Lancet 2023;402:1835-1847.
- 197e. Tewari KS, Sill MW, Long HJ III, et al. Improved survival with bevacizumab in advanced cervical cancer. N Engl J Med 2014;370:734-743.
- 198e. Hardesty MM, Krivak TC, Wright GS, et al. OVARIO phase II trial of combination niraparib plus bevacizumab maintenance therapy in advanced ovarian cancer following first-line platinum-based chemotherapy with bevacizumab. Gynecol Oncol. 2022;166(2):219-229. Doi:10.1016/j.ygyno.2022.05.020.
- 199e. Yamauchi T, Kitai R, Arai H, et al. Bevacizumab, irinotecan, and temozolomide with reirradiation in adult recurrrent medulloblastoma: A first case report. Interdisciplinary Neurosurgery: Advanced Techniques and Case Management 2021;25:101249.

 Doi:10.1016/j.inat.2021.101249
- 200e. Chamberlain MC. Recurrent intracranial ependymoma in children: salvage therapy with oral etoposide. Pediatr Neurol 2001;24:117-121. Doi:10.1016/s0887-8994(00)00249-6
- 201e. Gornet MK, Buckner JC, Marks RS, et al. Chemotherapy for advanced CNS ependymoma. J Neurooncol 1999;45:61-67. Doi:10.1023/a:1006394407245
- 202e. Gururangan S, Krauser J, Watral MA, et al. Efficacy of high-dose chemotherapy or standard salvage therapy in patients with recurrent medulloblastoma. Neuro Oncol 2008;10:745-751.
- 203e. Ruda R, Bosa C, Magistrello M, et al. TMZ as salvage treatment for recurrent intracranial ependymomas of the adult: a retrospective study. Neuro Oncol 2016;18:261-268. Doi:10.1093/neuonc/nov167
- 204e. Brandes AA, Ermani M, Amista P, et al. The treatment of adults with medulloblastoma: A prospective study. Int J Radiat Oncol Biol Phys 2003;57:755-761. Doi. 10.1016/s0360-3016(03)00643-6

- 205e. Franceschi E, Cavallo G, Scopece L, et al. Phase II trial of carboplatin and etoposide for patients with recurrent high-grade glioma. Br J Cancer 2004;91:1038-1044.

 Doi:10.1038.sj.bjc.6602105
- 206e. Ashley DM, Meier L, Kerby T, et al. Response of recurrent medulloblastoma to low-dose oral etoposide. J Clin Oncol 1996;14:1922-1927. Doi:10.1200/JCO.1996.14.6.1922
- 207e. Nicholson HS, Kretschmar CS, Krailo M, et al. Phase 2 study of TMZ in children and adolescents with recurrent central nervous system tumors: a report from the Children's Oncology Group. Cancer 2007;110:1542-1550. Doi.10.1002/cncr.22961
- 208e. McGuire WP, Blessing JA, Moore D, et al. Paclitaxel has moderate activity in squamous cervix cancer. A Gynecologic Oncology Group study. J Clin Oncol 1996;14:792-795. Doi. 10.1200/JCO.1996.14.3.792
- 209e. Alberts DS, Blessing JA, Landrum LM, et al. Phase II trial of nab-paclitaxel in the treatment of recurrent or persistent advanced cervix cancer: A gynecologic oncology group study. Gynecol Oncol. 2012;127(3):451-5. Doi. 10.1016/j.ygyno.2012.09.008
- 210e. Garcia A, Blessing JA, Vacarello L, et al. Phase II clinical trial of docetaxel in refractory squamous cell carcinoma of the cervix: a Gynecologic Oncology Group Study. Am J Clin Oncol. 2007 Aug;30(4):428-31. doi: 10.1097/COC.0b013e31803377c8.
- 211e. Lorusso D, G. Ferrandina, S. Pignata, et al. Evaluation of pemetrexed (Alimta, LY231514) as second-line chemotherapy in persistent or recurrent carcinoma of the cervix: the CERVIX 1 study of the MITO (Multicentre Italian Trials in Ovarian Cancer and Gynecologic Malignancies)

 Group. Annals of Oncology. 2009;21(1):61-66. doi:https://doi.org/10.1093/annonc/mdp266
- 212e. Bookman MA, Blessing JA, Hanjani P, Herzog TJ, Andersen WA. Topotecan in Squamous Cell Carcinoma of the Cervix: A Phase II Study of the Gynecologic Oncology Group. Gynecologic Oncology. 2000;77(3):446-449. doi:https://doi.org/10.1006/gyno.2000.5807
- 213e. Muggia FM, Blessing JA, Method M, et al. Evaluation of vinorelbine in persistent or recurrent squamous cell carcinoma of the cervix: a Gynecologic Oncology Group study. Gynecologic Oncology. 2004;92(2):639-643.
- 214e. Homesley H, Filiaci V, Gibbons SK et al. A randomized phase III trial in advanced endometrial carcinoma of surgery and volume directed radiation followed by cisplatin and doxorubicin with or without paclitaxel: A Gynecologic Oncology Group study. Gynecol Oncol. 2009

 Mar;112(3):543-52. doi: 10.1016/j.ygyno.2008.11.014.
- 215e. Brown J, Shvartsman HS, Deavers MT, et al. The activity of taxanes compared with bleomycin, etoposide, and cisplatin in the treatment of sex cord-stromal ovarian tumors. Gynecol Oncol. 2005 May;97(2):489-96. doi: 10.1016/j.ygyno.2005.01.011
- 216e. Konagunta GV, Bacik J, Bajorin, et al. Etoposide and cisplatin chemotherapy for metastatic good-risk germ cell tumors. J Clin Oncol. 2005 Dec 20;23(36):9290-4. doi: 10.1200/JCO.2005.03.6616
- 217e. Homesley HD, Filiaci V, Markman M, et al. Phase III trial of ifosfamide with or without paclitaxel in advanced uterine carcinosarcoma: a Gynecologic Oncology Group Study. J Clin Oncol. 2007 Feb 10;25(5):526-31. doi: 10.1200/JCO.2006.06.4907.
- 218e. Pfisterer J, du Bois A, Wagner. Docetaxel and carboplatin as first-line chemotherapy in patients with advanced gynecological tumors. A phase I/II trial of the Arbeitsgemeinschaft

- Gynäkologische Onkologie (AGO-OVAR) Ovarian Cancer Study Group. Gynecol Oncol. 2004 Mar;92(3):949-56. doi: 10.1016/j.ygyno.2003.12.004.
- 219e. Burton ER, Brady M, Homesley H, et al. A phase II study of paclitaxel for the treatment of ovarian stromal tumors: An NRG Oncology/ Gynecologic Oncology Group Study. Gynecol Oncol. 2016 Jan;140(1):48-52. doi: 10.1016/j.ygyno.2015.11.027.
- 220e. Needle MN, Molloy PT, Geyer JR, et al. Phase II study of daily oral etoposide in children with recurrent brain tumors and other solid tumors. Med Pediatr Oncol. 1997 Jul;29(1):28-32. doi: 10.1002/(sici)1096-911x(199707)29:1<28::aid-mpo5>3.0.co;2-u.
- 221e. Kumthekar P, Grimm SA, Aleman RT, et al. A multi-institutional phase II trial of bevacizumab for recurrent and refractory meningioma. Neuro-Oncology Advances. 2022;4(1). doi:https://doi.org/10.1093/noajnl/vdac123
- 222e. Aydin D, Sendur MA, Kefeli U, et al. Evaluation of Bevacizumab in Advanced Small Bowel Adenocarcinoma. Clinical Colorectal Cancer. 2017;16(1):78-83. doi:https://doi.org/10.1016/j.clcc.2016.04.013
- 223e. Eskander RN, Sill MW, Beffa L, et al. Pembrolizumab plus Chemotherapy in Advanced Endometrial Cancer. New England Journal of Medicine. 2023;388(23). doi:https://doi.org/10.1056/nejmoa2302312
- 224e. Powell MA, Powell MA, Powell MA, et al. Overall Survival in Patients with Endometrial Cancer Treated with Dostarlimab plus Carboplatin-Paclitaxel in the Randomized ENGOT-EN6/GOG-3031/RUBY Trial. Annals of oncology. Published online June 1, 2024. doi:https://doi.org/10.1016/j.annonc.2024.05.546
- 225e. Simpkins F, Drake RD, Escobar PF, Nutter B, Rasool N, Rose PG. A phase II trial of paclitaxel, carboplatin, and bevacizumab in advanced and recurrent endometrial carcinoma (EMCA). Gynecologic Oncology. 2015;136(2):240-245. doi:https://doi.org/10.1016/j.ygyno.2014.12.004
- 226e. Brown J, Smith JA, Ramondetta LM, et al. Combination of gemcitabine and cisplatin is highly active in women with endometrial carcinoma: results of a prospective phase 2 trial. Cancer. 2010;116(21):4973-4979. doi:https://doi.org/10.1002/cncr.25498
- 227e. Ignace Vergote, Powell MA, Teneriello MG, et al. Second-line lenvatinib in patients with recurrent endometrial cancer. Gynecologic Oncology. 2020;156(3):575-582. doi:https://doi.org/10.1016/j.ygyno.2019.12.039
- 228e. Jänne PA, Wozniak AJ, Belani CP, et al. Open-Label Study of Pemetrexed Alone or in Combination with Cisplatin for the Treatment of Patients with Peritoneal Mesothelioma: Outcomes of an Expanded Access Program. Clinical Lung Cancer. 2005;7(1):40-46. doi:https://doi.org/10.3816/clc.2005.n.020
- 229e. Quincy Siu-Chung Chu, Perrone F, L. Greillier, et al. Pembrolizumab plus chemotherapy versus chemotherapy in untreated advanced pleural mesothelioma in Canada, Italy, and France: a phase 3, open-label, randomised controlled trial. The Lancet. Published online November 1, 2023. doi:https://doi.org/10.1016/s0140-6736(23)01613-6
- 230e. Gwénaël Le Teuff, Castaneda-Heredia A, Dufour C, et al. Phase II study of temozolomide and topotecan (TOTEM) in children with relapsed or refractory extracranial and central nervous

- system tumors including medulloblastoma with post hoc Bayesian analysis: A European ITCC study. Pediatric Blood & Cancer. 2019;67(1). doi:https://doi.org/10.1002/pbc.28032
- 231e. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Vaginal Cancer Version 5.2025. National Comprehensive Cancer Network, 2025. 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 Guidelines, go online to NCCN.org. Accessed June 2025.
- 232e. Terashima T, Kido H, Takata N, et al. Phase II Study of Atezolizumab and Bevacizumab Combination Therapy for Patients with Advanced Hepatocellular Carcinoma Previously Treated with Lenvatinib. *Cancers*. 2025;17(2):278-278. doi:https://doi.org/10.3390/cancers17020278
- 233e. Mori N, Tamaki N, Takaki S, et al. Treatment response to durvalumab plus tremelimumab after progression with previous immune checkpoint inhibitor in unresectable hepatocellular carcinoma. *Investigational New Drugs*. 2024;42(5):559-565. doi:https://doi.org/10.1007/s10637-024-01470-y
- 234e. Bijelic L, Stuart OA, Sugarbaker P. Adjuvant bidirectional chemotherapy with intraperitoneal pemetrexed combined with intravenous Cisplatin for diffuse malignant peritoneal mesothelioma. Gastroenterol Res Pract. 2012;2012:890450.
- 235e. Krug LM, Pass HI, Rusch VW, et al. Multicenter phase II trial of neoadjuvant pemetrexed plus cisplatin followed by extrapleural pneumonectomy and radiation for malignant pleural mesothelioma. J Clin Oncol. 2009;27(18):3007–3013.
- 236e. Metts J, Harrington B, Salman E, et al. A phase I study of irinotecan and temozolomide with bevacizumab in children with recurrent/refractory central nervous system tumors. Childs Nerv Syst. 2022 May;38(5):919-928. doi: 10.1007/s00381-022-05479-7. Epub 2022 Mar 8. PMID: 35260913.
- 237e. Prime Therapeutics Management. Bevacizumab Clinical Literature Review Analysis. Last updated August 2025. Accessed August 2025.

Appendix A – Non-Quantitative Treatment Limitations (NQTL) Factor Checklist

Non-quantitative treatment limitations (NQTLs) refer to the methods, guidelines, standards of evidence, or other conditions that can restrict how long or to what extent benefits are provided under a health plan. These may include things like utilization review or prior authorization. The utilization management NQTL applies comparably, and not more stringently, to mental health/substance use disorder (MH/SUD) Medical Benefit Prescription Drugs and medical/surgical (M/S) Medical Benefit Prescription Drugs. The table below lists the factors that were considered in designing and applying prior authorization to this drug/drug group, and a summary of the conclusions that Prime's assessment led to for each.

| Factor | Conclusion |
|----------------------------|-----------------------|
| Indication | Yes: Consider for PA |
| Safety and efficacy | No: PA not a priority |
| Potential for misuse/abuse | No: PA not a priority |
| Cost of drug | Yes: Consider for PA |

Appendix 1 – Covered Diagnosis Codes

| ICD-10 | ICD-10 Description |
|--------|--|
| C17.0 | Malignant neoplasm duodenum |
| C17.1 | Malignant neoplasm jejunum |
| C17.2 | Malignant neoplasm ileum |
| C17.3 | Meckel's diverticulum, malignant |
| C17.8 | Malignant neoplasm of overlapping sites of small intestines |
| C17.9 | Malignant neoplasm of small intestine, unspecified |
| C18.0 | Malignant neoplasm of cecum |
| C18.1 | Malignant neoplasm of appendix |
| C18.2 | Malignant neoplasm of ascending colon |
| C18.3 | Malignant neoplasm of hepatic flexure |
| C18.4 | Malignant neoplasm of transverse colon |
| C18.5 | Malignant neoplasm of splenic flexure |
| C18.6 | Malignant neoplasm of descending colon |
| C18.7 | Malignant neoplasm of sigmoid colon |
| C18.8 | Malignant neoplasm of overlapping sites of large intestines |
| C18.9 | Malignant neoplasm of colon, unspecified |
| C19 | Malignant neoplasm of rectosigmoid junction |
| C20 | Malignant neoplasm of rectum |
| C21.8 | Malignant neoplasm of overlapping sites of rectum, anus and anal canal |
| C22.0 | Liver cell carcinoma |
| C22.3 | Angiosarcoma of the liver |
| C22.8 | Malignant neoplasm of liver, primary, unspecified as to type |
| C22.9 | Malignant neoplasm of liver, not specified as primary or secondary |
| C24.1 | Malignant neoplasm of ampulla of Vater |
| C33 | Malignant neoplasm of trachea |
| C34.00 | Malignant neoplasm of unspecified main bronchus |
| C34.01 | Malignant neoplasm of right main bronchus |
| C34.02 | Malignant neoplasm of left main bronchus |
| C34.10 | Malignant neoplasm of upper lobe, unspecified bronchus or lung |
| C34.11 | Malignant neoplasm of upper lobe, right bronchus or lung |
| C34.12 | Malignant neoplasm of upper lobe, left bronchus or lung |
| C34.2 | Malignant neoplasm of middle lobe, bronchus or lung |
| C34.30 | Malignant neoplasm of lower lobe, unspecified bronchus or lung |

| ICD-10 | ICD-10 Description |
|--------|--|
| C34.31 | Malignant neoplasm of lower lobe, right bronchus or lung |
| C34.32 | Malignant neoplasm of lower lobe, left bronchus or lung |
| C34.80 | Malignant neoplasm of overlapping sites of unspecified bronchus or lung |
| C34.81 | Malignant neoplasm of overlapping sites of right bronchus and lung |
| C34.82 | Malignant neoplasm of overlapping sites of left bronchus and lung |
| C34.90 | Malignant neoplasm of unspecified part of unspecified bronchus or lung |
| C34.91 | Malignant neoplasm of unspecified part of right bronchus or lung |
| C34.92 | Malignant neoplasm of unspecified part of left bronchus or lung |
| C45.0 | Mesothelioma of pleura |
| C45.1 | Mesothelioma of peritoneum |
| C45.2 | Mesothelioma of pericardium |
| C45.7 | Mesothelioma of other sites |
| C45.9 | Mesothelioma, unspecified |
| C48.0 | Malignant neoplasm of retroperitoneum |
| C48.1 | Malignant neoplasm of specified parts of peritoneum |
| C48.2 | Malignant neoplasm of peritoneum, unspecified |
| C48.8 | Malignant neoplasm of overlapping sites of retroperitoneum and peritoneum |
| C49.0 | Malignant neoplasm of connective and soft tissue of head, face and neck |
| C49.10 | Malignant neoplasm of connective and soft tissue of unspecified upper limb, including shoulder |
| C49.11 | Malignant neoplasm of connective and soft tissue of right upper limb including shoulder |
| C49.12 | Malignant neoplasm of connective and soft tissue of left upper limb, including shoulder |
| C49.20 | Malignant neoplasm of connective and soft tissue of unspecified lower limb, including hip |
| C49.21 | Malignant neoplasm of connective and soft tissue of right lower limb, including hip |
| C49.22 | Malignant neoplasm of connective and soft tissue of left lower limb, including hip |
| C49.3 | Malignant neoplasm of connective and soft tissue of thorax |
| C49.4 | Malignant neoplasm of connective and soft tissue of abdomen |
| C49.5 | Malignant neoplasm of connective and soft tissue of pelvis |
| C49.6 | Malignant neoplasm of connective and soft tissue of trunk, unspecified |
| C49.8 | Malignant neoplasm of overlapping sites of connective and soft tissue |
| C49.9 | Malignant neoplasm of connective and soft tissue, unspecified |
| C51.0 | Malignant neoplasm of labium majus |
| C51.1 | Malignant neoplasm of labium minus |
| C51.2 | Malignant neoplasm of clitoris |
| C51.8 | Malignant neoplasm of overlapping sites of vulva |

| ICD-10 | ICD-10 Description |
|--------|--|
| C51.9 | Malignant neoplasm of vulva, unspecified |
| C52 | Malignant neoplasm of vagina |
| C53.0 | Malignant neoplasm of endocervix |
| C53.1 | Malignant neoplasm of exocervix |
| C53.8 | Malignant neoplasm of overlapping sites of cervix uteri |
| C53.9 | Malignant neoplasm of cervix uteri, unspecified |
| C54.0 | Malignant neoplasm of isthmus uteri |
| C54.1 | Malignant neoplasm of endometrium |
| C54.2 | Malignant neoplasm of myometrium |
| C54.3 | Malignant neoplasm of fundus uteri |
| C54.8 | Malignant neoplasm of overlapping sites of corpus uteri |
| C54.9 | Malignant neoplasm of corpus uteri, unspecified |
| C55 | Malignant neoplasm of uterus, part unspecified |
| C56.1 | Malignant neoplasm of right ovary |
| C56.2 | Malignant neoplasm of left ovary |
| C56.3 | Malignant neoplasm of bilateral ovaries |
| C56.9 | Malignant neoplasm of unspecified ovary |
| C57.00 | Malignant neoplasm of unspecified fallopian tube |
| C57.01 | Malignant neoplasm of right fallopian tube |
| C57.02 | Malignant neoplasm of left fallopian tube |
| C57.10 | Malignant neoplasm of unspecified broad ligament |
| C57.11 | Malignant neoplasm of right broad ligament |
| C57.12 | Malignant neoplasm of left broad ligament |
| C57.20 | Malignant neoplasm of unspecified round ligament |
| C57.21 | Malignant neoplasm of right round ligament |
| C57.22 | Malignant neoplasm of left round ligament |
| C57.3 | Malignant neoplasm of parametrium |
| C57.4 | Malignant neoplasm of uterine adnexa, unspecified |
| C57.7 | Malignant neoplasm of other specified female genital organs |
| C57.8 | Malignant neoplasm of overlapping sites of female genital organs |
| C57.9 | Malignant neoplasm of female genital organ, unspecified |
| C64.1 | Malignant neoplasm of right kidney, except renal pelvis |
| C64.2 | Malignant neoplasm of left kidney, except renal pelvis |
| C64.9 | Malignant neoplasm of unspecified kidney, except renal pelvis |

| ICD-10 | ICD-10 Description |
|---------|--|
| C65.1 | Malignant neoplasm of right renal pelvis |
| C65.2 | Malignant neoplasm of left renal pelvis |
| C65.9 | Malignant neoplasm of unspecified renal pelvis |
| C70.0 | Malignant neoplasm of cerebral meninges |
| C70.1 | Malignant neoplasm of spinal meninges |
| C70.9 | Malignant neoplasm of meninges, unspecified |
| C71.6 | Malignant neoplasm of cerebellum |
| C71.7 | Malignant neoplasm of brain stem |
| C71.8 | Malignant neoplasm of overlapping sites of brain |
| C71.9 | Malignant neoplasm of brain, unspecified |
| C72.30 | Malignant neoplasm of unspecified optic nerve |
| C72.31 | Malignant neoplasm of right optic nerve |
| C72.32 | Malignant neoplasm of left optic nerve |
| C78.00 | Secondary malignant neoplasm of unspecified lung |
| C78.01 | Secondary malignant neoplasm of right lung |
| C78.02 | Secondary malignant neoplasm of left lung |
| C78.6 | Secondary malignant neoplasm of retroperitoneum and peritoneum |
| C78.7 | Secondary malignant neoplasm of liver and intrahepatic bile duct |
| C79.31 | Secondary malignant neoplasm of brain |
| C83.30 | Diffuse large B-cell lymphoma unspecified site |
| C83.390 | Primary central nervous system lymphoma |
| C83.398 | Diffuse large B-cell lymphoma of other extranodal and solid organ sites |
| C83.59 | Lymphoblastic (diffuse) lymphoma, extranodal and solid organ sites |
| C83.79 | Burkitt lymphoma, extranodal and solid organ sites |
| C83.80 | Other non-follicular lymphoma unspecified site |
| C83.89 | Other non-follicular lymphoma extranodal and solid organ sites |
| C84.49 | Peripheral T-cell lymphoma, not elsewhere classified, extranodal and solid organ sites |
| C85.89 | Other specified types of non-Hodgkin lymphoma, extranodal and solid organ sites |
| C85.99 | Non-Hodgkin lymphoma, unspecified, extranodal and solid organ sites |
| D32.0 | Benign neoplasm of cerebral meninges |
| D32.1 | Benign neoplasm of spinal meninges |
| D32.9 | Benign neoplasm of meninges, unspecified |
| D42.0 | Neoplasm of uncertain behavior of cerebral meninges |
| D42.1 | Neoplasm of uncertain behavior of spinal meninges |

| ICD-10 | ICD-10 Description |
|---------|---|
| D42.9 | Neoplasm of uncertain behavior of meninges, unspecified |
| D43.0 | Neoplasm of uncertain behavior of brain, supratentorial |
| D43.1 | Neoplasm of uncertain behavior of brain, infratentorial |
| D43.2 | Neoplasm of uncertain behavior of brain, unspecified |
| D43.4 | Neoplasm of uncertain behavior of spinal cord |
| D43.9 | Neoplasm of uncertain behavior of central nervous system, unspecified |
| G93.6 | Cerebral edema |
| 167.89 | Other cerebrovascular disease |
| 167.9 | Cerebrovascular disease, unspecified |
| Q85.02 | Neurofibromatosis, type 2 |
| Q85.03 | Schwannomatosis |
| Q85.83 | Von Hippel-Lindau syndrome |
| Y84.2 | Radiological procedure and radiotherapy as the cause of abnormal reaction of the patient, or of later |
| 104.2 | complication, without mention of misadventure at the time of the procedure |
| Z85.038 | Personal history of other malignant neoplasm of large intestine |
| Z85.068 | Personal history of other malignant neoplasm of small intestine |
| Z85.09 | Personal history of malignant neoplasm of other digestive organs |
| Z85.118 | Personal history of other malignant neoplasm of bronchus and lung |
| Z85.42 | Personal history of malignant neoplasm of other parts of uterus |
| Z85.43 | Personal history of malignant neoplasm of ovary |
| Z85.831 | Personal history of malignant neoplasm of soft tissue |

Appendix 2 – Centers for Medicare and Medicaid Services (CMS)

The preceding information is intended for non-Medicare coverage determinations. Medicare coverage for outpatient (Part B) drugs is outlined in the Medicare Benefit Policy Manual (Pub. 100-2), Chapter 15, §50 Drugs and Biologicals. In addition, National Coverage Determinations (NCDs) and/or Local Coverage Determinations (LCDs) may exist and compliance with these policies is required where applicable. Local Coverage Articles (LCAs) may also exist for claims payment purposes or to clarify benefit eligibility under Part B for drugs which may be self-administered. The following link may be used to search for NCD, LCD, or LCA documents: https://www.cms.gov/medicare-coverage-database/search.aspx. Additional indications, including any preceding information, may be applied at the discretion of the health plan.

| | Medicare Part B | Covered Diagnosis Codes |
|--------------|-----------------|-----------------------------------|
| Jurisdiction | NCD/LCA/LCD | Contractor |
| | Document (s) | |
| 6, K | A52370 | National Government Services, Inc |

| Medicare Part B Administrative Contractor (MAC) Jurisdictions | | |
|---|---|---|
| Jurisdiction | Applicable State/US Territory | Contractor |
| E (1) | CA, HI, NV, AS, GU, CNMI | Noridian Healthcare Solutions, LLC |
| F (2 & 3) | AK, WA, OR, ID, ND, SD, MT, WY, UT, AZ | Noridian Healthcare Solutions, LLC |
| 5 | KS, NE, IA, MO | Wisconsin Physicians Service Insurance Corp (WPS) |
| 6 | MN, WI, IL | National Government Services, Inc. (NGS) |
| H (4 & 7) | LA, AR, MS, TX, OK, CO, NM | Novitas Solutions, Inc. |
| 8 | MI, IN | Wisconsin Physicians Service Insurance Corp (WPS) |
| N (9) | FL, PR, VI | First Coast Service Options, Inc. |
| J (10) | TN, GA, AL | Palmetto GBA |
| M (11) | NC, SC, WV, VA (excluding below) | Palmetto GBA |
| L (12) | DE, MD, PA, NJ, DC (includes Arlington & Fairfax counties and the city of Alexandria in VA) | Novitas Solutions, Inc. |
| K (13 & 14) | NY, CT, MA, RI, VT, ME, NH | National Government Services, Inc. (NGS) |
| 15 | кү, он | CGS Administrators, LLC |