

2006 Demonstration Project: Synopsis of Recommendations (ASCO Guidelines Only)¹

This document is a practice tool designed to facilitate physician participation in the CMS 2006 Oncology Demonstration Project and is not intended to substitute for the independent professional judgment of the treating physician. Practice guidelines and this document do not account for individual variation among patients. This tool does not purport to suggest any particular course of medical treatment. Use of the practice guidelines and this document are voluntary. The practice guidelines and additional information are available at <http://www.asco.org/guidelines>.

BREAST CANCER	
Sentinel Lymph Node Biopsy in Early-Stage Breast Cancer	
Citation/Link	ASCO Guideline Recommendations for Sentinel Lymph Node Biopsy in Early-Stage Breast Cancer; <i>Journal of Clinical Oncology</i> , Vol 23, No 30 (October 20), 2005: pp. 7703-7720 http://www.asco.org/ac/1,1003,12-002032-0018-0042103,00.asp
Staging System	2002, AJCC; the node classification (pN0) is not altered by clusters of isolated tumor cells of 0.2 mm or less, regardless of the staining technique used to identify them.
G-Code	Sentinel lymph node biopsy (SNB) <u>is acceptable</u> for staging and management of early stage breast cancer under the following clinical circumstances:
<u>G9071</u> Onc dx brst stg1-2B HR, no pro	<ul style="list-style-type: none"> ▪ T1 or T2 tumors ▪ Multicentric tumors ▪ Ductal carcinoma-in-situ (DCIS) with mastectomy ▪ DCIS without mastectomy (large DCIS (> 5 cm) on core biopsy or with suspected or proven microinvasion)
<u>G9072</u> Onc dx brst stg1-2 no progres	<ul style="list-style-type: none"> ▪ Older age patients (clinical judgment) ▪ Obese patients (clinical judgment) ▪ Male breast cancer
<u>G9073</u> Onc dx brst stg3-HR, no pro	<ul style="list-style-type: none"> ▪ Evaluation of internal mammary lymph nodes ▪ Prior Diagnostic or excisional breast biopsy ▪ Before preoperative systemic therapy
<u>G9074</u> Onc dx brst stg3-no progress	SNB <u>is not recommended</u> for the following clinical circumstances:
<u>G9075</u> Onc dx brst metastatic/ recur	<ul style="list-style-type: none"> ▪ T3 or T4 tumors ▪ Inflammatory breast cancer ▪ DCIS without mastectomy (exceptions exist) ▪ Suspicious, palpable axillary nodes ▪ Pregnancy ▪ Prior axillary surgery ▪ Prior non-oncologic breast surgery (reduction or augmentation mammoplasty, breast reconstruction, etc)
<u>G9076</u> Onc dx brst unknown NOS; does not include DCIS	<ul style="list-style-type: none"> ▪ After preoperative systemic therapy
Role of Bisphosphonates and Bone Health Issues in Women with Breast Cancer²	
Citation/Link	ASCO 2003 Update on the Role of Bisphosphonates and Bone Health Issues in Women With Breast Cancer; <i>Journal of Clinical Oncology</i> , Vol 21, Issue 21 (November), 2003: 4042-4057

¹ ASCO full text guidelines include more information than what is presented in the guideline tables. For the full text of each guideline, go to <http://www.asco.org/guidelines> or click on the appropriate citation/link.

² This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines>.

	http://www.asco.org/ac/1,1003,12-002032-00_18-0031101-00_19-0031102-00_20-001,00.asp
<p>G-Code</p> <p><u>G9071</u> Onc dx brst stg1-2B HR, no pro</p> <p><u>G9072</u> Onc dx brst stg1-2 no progres</p> <p><u>G9073</u> Onc dx brst stg3-HR, no pro</p> <p><u>G9074</u> Onc dx brst stg3-no progress</p> <p><u>G9075</u> Onc dx brst metastic/ recur</p> <p><u>G9076</u> Onc dx brst unknown NOS</p>	<p>The following should be considered about the role of bisphosphonates in women with breast cancer:</p> <ul style="list-style-type: none"> ▪ Bisphosphonates should not be used in women with an abnormal bone scan but normal radiographs and no evidence of bone destruction on CT or MRI ▪ Starting bisphosphonates in women without evidence of bone metastases even in the presence of other extra-skeletal metastases is not recommended. ▪ Starting bisphosphonates in women at any stage of their nonosseous disease, outside of clinical trials, despite a high risk for future bone metastasis is currently not recommended. <p>Consider the following recommendations for safety and adverse effects of bisphosphonate use in women:</p> <ul style="list-style-type: none"> ▪ In patients with pre-existing renal disease and a serum creatinine level less than 3.0 mg/dL (265 µmol/L) no change in dosage, infusion time, or interval of pamidronate or zoledronic acid is required. ▪ Infusion times less than 2 hours with pamidronate or less than 15 minutes with zoledronic acid should be avoided ▪ Serum creatinine should be monitored prior to each dose of pamidronate or zoledronic acid, in accordance with FDA-approved labeling. Serum calcium, electrolytes, phosphate, magnesium, and hematocrit/hemoglobin should also be monitored regularly. ▪ In contrast to multiple myeloma patients, there currently is no data to support routine assessments for albuminuria in breast cancer patients. ▪ The use of the biochemical markers to monitor bisphosphonate use is not suggested for routine care. ▪ The Panel suggests that once initiated, intravenous bisphosphonates be continued until evidence of substantial decline in a patient's general performance status. ▪ Current standards of care for cancer pain management must be applied throughout bisphosphonate therapy and are required by good clinical practice. ▪ There is insufficient evidence to support a role for intravenous bisphosphonates as an adjunctive therapy to radiation therapy in women with pain as a result of metastatic bone disease when systemic chemotherapy and/or hormonal therapy is not being employed. <p>Oncology professionals must take an expanded role in the routine and regular assessment of these women's bone health (use algorithm included in guideline).</p>
Use of Tumor Markers in Breast and Colorectal Cancer³	
Citation/Link	2000 Update of Recommendations for the Use of Tumor Markers in Breast and Colorectal Cancer: Clinical Practice Guidelines of ASCO; <i>Journal of Clinical Oncology</i> , Vol 19, Issue 6 (March), 2001: 1865-1878 http://www.asco.org/ac/1,1003,12-002032-00_18-0032488-00_19-0032489-00_20-001,00.asp
<p>G-Code</p> <p><u>G9071</u> Onc dx brst stg1-2B HR, no pro</p> <p><u>G9072</u> Onc dx brst stg1-2 no progres</p> <p><u>G9073</u> Onc dx brst stg3-HR, no pro</p> <p><u>G9074</u> Onc dx brst stg3-no progress</p> <p><u>G9075</u></p>	<p>The use of the following tumor markers are recommended in breast cancer:</p> <ul style="list-style-type: none"> ▪ <u>Estrogen receptors and progesterone receptors</u> – to be measured on every primary breast cancer and may be measured on metastatic lesions if the results would influence treatment planning. In both pre- and postmenopausal patients, steroid hormone receptor status may be used to identify patients most likely to benefit from endocrine forms of adjuvant therapy and therapy for recurrent or metastatic disease. ▪ <u>c-erbB-2 (HER-2/neu)</u> – c-erbB-2 overexpression should be evaluated on every primary breast cancer either at the time of diagnosis or at the time of recurrence. Measures of c-erbB-2 amplification may also be of value. <p>It is important to consider the following regarding c-erbB-2:</p> <ul style="list-style-type: none"> ▪ Because of the uncertain interchangeability, reproducibility, and clinical utility of different c-erbB-2 tests, it is important that clinical laboratories report not only an estimate c-erbB-2 but also a statement about the test's quality controls, the method, the specific kit or critical reagents, details of the scoring system, a statement regarding reproducibility, sensitivity, and specificity of the assay, and a reference to the clinical validation of the assay or its correlation with a clinically validated c-erbB-2 test. ▪ High levels of c-erbB-2 expression or c-erbB-2 amplification can be used to identify patients for whom trastuzumab may be of benefit for the treatment of metastatic, recurrent, and/or treatment-

³ This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines> .

<p>Onc dx brst metastatic/ recur</p> <p><u>G9076</u> Onc dx brst unknown NOS</p>	<p>refractory unresectable locally advanced breast cancer.</p> <ul style="list-style-type: none"> ▪ High levels of <i>c-erbB-2</i> expression, as determined by immunohistochemistry, may identify patients who particularly benefit from anthracycline-based adjuvant therapy, but levels of <i>c-erbB-2</i> expression should not be used to exclude patients from anthracycline treatment. ▪ The question of whether <i>c-erbB-2</i> overexpression affects the relative benefit of adjuvant cyclophosphamide, methotrexate, and fluorouracil chemotherapy remains open, and the update committee cannot make a definitive practice recommendation at present. ▪ The use of <i>c-erbB-2</i> data to decide whether to prescribe endocrine therapy either in the adjuvant or metastatic setting is not recommended. ▪ The use of <i>c-erbB-2</i> data to decide whether to prescribe taxane-based chemotherapy either in the adjuvant or metastatic setting is not recommended. ▪ The data are insufficient to recommend the routine use of <i>c-erbB-2</i> overexpression in patients with early breast cancer to identify patients with a higher risk of relapse. ▪ Measuring circulating extracellular domain of <i>c-erbB-2</i> is not currently recommended for any clinical setting. <p>The use of the following tumor markers are not recommended in breast cancer:</p> <ul style="list-style-type: none"> ▪ CA 15-3 ▪ CEA <p>The following tumor markers could not be recommend because of insufficient data:</p> <ul style="list-style-type: none"> ▪ DNA flow cytometry derived parameters ▪ <i>p53</i> ▪ Cathepsin-D
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Postmastectomy Radiotherapy

Citation/Link	Postmastectomy Radiotherapy: Clinical Practice Guidelines of ASCO; <i>Journal of Clinical Oncology</i> , Vol 19, Issue 5 (March), 2001: 1539-1569 http://www.asco.org/ac/1,1003,12-002032-00_18-0011092-00_19-0011095-00_20-001,00.asp
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<p>G-Code</p> <p><u>G9071</u> Onc dx brst stg1-2B HR, no pro</p> <p><u>G9072</u> Onc dx brst stg1-2 no progres</p> <p><u>G9073</u> Onc dx brst stg3-HR, no pro</p> <p><u>G9074</u> Onc dx brst stg3-no progress</p>	<p>Postmastectomy radiotherapy (PMRT) is recommended for the following patients:</p> <ul style="list-style-type: none"> ▪ Four or more positive axillary lymph nodes ▪ T3 tumors with positive axillary nodes and patients with operable stage III tumors <p>The following considerations should be made when managing patients with invasive breast cancer:</p> <ul style="list-style-type: none"> ▪ In patients given PMRT, adequately treating the chest wall is mandatory ▪ A supraclavicular field should be irradiated in patients with four or more positive axillary nodes. ▪ The risk of serious toxicity of PMRT (when performed using modern techniques) is low enough that such considerations of toxicity should not limit its use in most circumstances when otherwise indicated. <p>The following could not be recommended because of insufficient evidence:</p> <ul style="list-style-type: none"> ▪ Routine use of PMRT in patients with T1/2 tumors with one to three positive nodes ▪ Whether all patients initially treated with preoperative systemic therapy should be given PMRT after surgery ▪ Modifications of the guidelines for special patient subgroups (based on tumor-, patient-, or treatment-related factors) ▪ Such aspects of chest wall irradiation as total dose, fraction size, the use of bolus, and the use of scar boosts ▪ Whether a supraclavicular field should be used for patients with one to three positive axillary nodes ▪ Whether deliberate internal mammary nodal irradiation should be used in any patient subgroup ▪ Integration of PMRT and reconstructive surgery ▪ PMRT use for some subgroups of patients based on increased rates of toxicity compared with the rest of the population ▪ Optimal sequencing of chemotherapy, tamoxifen, and PMRT <p>The following were not recommended when using PMRT:</p> <ul style="list-style-type: none"> ▪ Full axillary radiotherapy should not be given routinely to patients undergoing complete or level I/II axillary dissection ▪ Doxorubicin administered concurrently with PMRT
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Breast Cancer Surveillance Guidelines⁴

Citation/Link	American Society of Clinical Oncology 1998 Update of Recommended Breast Cancer Surveillance Guidelines; <i>Journal of Clinical Oncology</i> , Vol 17, Issue 3 (March), 1999: 1080-1081 http://www.asco.org/ac/1,1003, 12-002032-00 18-0010784-00 19-0010785-00 20-001,00.asp
G-Code <u>G9071</u> Onc dx brst stg1-2B HR, no pro <u>G9072</u> Onc dx brst stg1-2 no progres <u>G9073</u> Onc dx brst stg3-HR, no pro <u>G9074</u> Onc dx brst stg3-no progress <u>G9075</u> Onc dx brst metastic/ recur <u>G9076</u> Onc dx brst unknown NOS	<p>The following guidelines are recommended for breast cancer surveillance:</p> <ul style="list-style-type: none"> ▪ All women should have a careful history every 3 to 6 months for the first 3 years after primary therapy, then every 6 to 12 months for the next 2 years, and then annually. ▪ All women should have a careful physical examination every 3 to 6 months for the first 3 years, then every 6 to 12 months for the next 2 years, and then annually. ▪ All women should be informed about performing a monthly breast self-examination. ▪ All women with a prior diagnosis of breast cancer should be informed about having a yearly mammographic evaluation. Women treated with breast-conserving therapy should have their first posttreatment mammogram 6 months after completion of radiotherapy, then annually or as indicated for surveillance of abnormalities. If stability of mammographic findings is achieved, mammography can be performed yearly thereafter. ▪ Inform women about symptoms of recurrence. ▪ Subsequent care of the patient following primary treatment should be coordinated and not duplicated. ▪ Continuity of care should be encouraged and conducted by a physician experienced in the surveillance of cancer patients and in the examination of women with both irradiated and normal contralateral breasts. ▪ Inform all women to have a pelvic examination at regular intervals. <p>The routine use of the following breast cancer surveillance tests could not be recommended because of insufficient evidence:</p> <ul style="list-style-type: none"> ▪ Complete blood cell count ▪ Automated chemistry studies ▪ Chest roentgenography ▪ Bone scan ▪ Ultrasound of the liver ▪ Computed tomography <p>The following tumor markers are not recommended for breast cancer surveillance testing:</p> <ul style="list-style-type: none"> ▪ CA 15-3 ▪ CEA

Use of Aromatase Inhibitors As Adjuvant Therapy for Postmenopausal Women With Hormone Receptor-Positive Breast Cancer

Citation/Link	American Society of Clinical Oncology Technology Assessment on the Use of Aromatase Inhibitors As Adjuvant Therapy for Postmenopausal Women With Hormone Receptor-Positive Breast Cancer: Status Report 2004; <i>Journal of Clinical Oncology</i> , Vol 23, No 3 (January 20), 2005: pp. 619-629 http://www.asco.org/ac/1,1003, 12-002033-00 18-0036744-00 19-0036745-00 20-001,00.asp
G-Code <u>G9071</u> Onc dx brst stg1-2B HR, no pro <u>G9073</u> Onc dx brst stg3-HR, no pro <u>G9075</u> Onc dx brst	<p>Optimal adjuvant hormonal therapy for a postmenopausal woman with receptor-positive breast cancer should include an aromatase inhibitor (AI) either as initial therapy or after treatment with tamoxifen in order to lower the risk of tumor recurrence.</p> <p>Based on available evidence, the following should also be noted about AIs:</p> <ul style="list-style-type: none"> ▪ An AI is the treatment of choice as initial adjuvant therapy for any postmenopausal women with hormone receptor-positive invasive breast cancer with a contraindication to tamoxifen. ▪ Close monitoring for bone loss and consideration of proactive treatment will be an important adjunct to the use of any AI. ▪ The Panel generally recommends that HER-2 status not be considered when making choices about adjuvant hormonal therapy. It must be noted, however, that some Panel members are more inclined to recommend initial therapy with an AI in postmenopausal women with HER-2-positive tumors.

⁴ This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines>.

<p>metastatic/ recur</p> <p><u>G9076</u></p> <p>Onc dx brst</p> <p>unknown NOS</p>	<ul style="list-style-type: none"> ▪ Postmenopausal women finishing 5 years of tamoxifen for ER-positive, early-stage breast cancer should consider treatment with an AI. A minimum of 2.5 years of therapy can be recommended. ▪ Postmenopausal women concluding 2 to 3 years of tamoxifen therapy may consider cross-over to an AI. ▪ There is no evidence to suggest that a longer than 5-year course of an AI is beneficial. ▪ Existing clinical data do not support the use of tamoxifen after an AI in the adjuvant setting. However, if a woman initially treated with an AI develops toxicity that would require premature discontinuation of adjuvant endocrine therapy, it is reasonable to consider either substituting another AI or switching to tamoxifen. ▪ There is overwhelming evidence that adjuvant hormonal therapy is effective only in patients with positive ER and/or progesterone receptors. ▪ Hormone receptor studies should be performed on all primary invasive tumors to guide the use of adjuvant hormonal therapy. Women whose tumors are known to be hormone receptor–negative should not receive an AI as adjuvant therapy. ▪ There is widespread agreement that AIs should not be employed as monotherapy in premenopausal women. ▪ There are no clinical trial data in premenopausal women from the adjuvant setting on which to judge the value of using an AI in conjunction with ovarian function suppression. ▪ AI use is associated with osteoporosis and fracture risk related to estrogen deprivation. ▪ Incidence of three life-threatening side effects seen with tamoxifen—endometrial cancer, pulmonary emboli, and stroke—was significantly reduced with AI use. ▪ AI effects on cognition or dementia have not been reported. ▪ The differing clinical situations and lack of standard criteria for collection of side effects hinder comparison of AI effects on patient-perceived symptoms. ▪ Tailoring decisions about adjuvant hormonal therapy for individual patients requires an understanding of disease and patient characteristics associated with relapse and toxicity of each approach.
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COLON CANCER

Colorectal Cancer Surveillance

Citation/Link	Colorectal Cancer Surveillance: 2005 Update of an American Society of Clinical Oncology Practice Guideline; <i>Journal of Clinical Oncology</i> , Vol 23, No 33 (November 20), 2005: pp. 8512-8519 http://www.asco.org/ac/1,1003,12-002032-00_18-0042948,00.asp
G-Code <u>G9084</u> Onc dx colon t1-3,n1-2,no pr <u>G9085</u> Onc dx colon T4, N0 w/o prog <u>G9086</u> Onc dx colon T1-4 no dx prog	<p>Recommendations for colorectal cancer surveillance:</p> <ul style="list-style-type: none"> ▪ Coordinate physician visits every 3 to 6 months for the first 3 years, every 6 months during years 4 and 5, and subsequently at the discretion of the physician. ▪ Physician visits should focus on the initial risk assessment, followed by the implementation of a surveillance strategy and periodic counseling based on estimated risk and feasibility of surgical interventions. ▪ Postoperative serum CEA testing should be performed every 3 months in patients with stage II or III disease for at least 3 years after diagnosis, if the patient is a candidate for surgery or systemic therapy. ▪ Patients who are at higher risk of recurrence, and who could be candidates for curative-intent surgery, should undergo annual CT of the chest and abdomen for 3 years after primary therapy for colon and rectal cancer. ▪ All patients with colon and rectal cancer should have a colonoscopy for the preor perioperative documentation of a cancer-and polyp-free colon. <p>The following are not recommended for colorectal cancer surveillance:</p> <ul style="list-style-type: none"> ▪ Routine blood tests (i.e., CBCs or liver function tests) ▪ Periodic fecal occult blood testing ▪ Yearly chest x-rays. Since the Panel has recommended annual CT scanning of the chest and abdomen for high-risk patients who are candidates for resection, routine chest x-rays are probably not relevant. ▪ Until prospective data are available, use of molecular or cellular markers should not influence the surveillance strategy. <p>These guidelines also present information from the American Gastroenterology Association guidelines on colorectal cancer patients with high-risk genetic syndromes.</p>

Adjuvant Chemotherapy for Stage II Colon Cancer

Citation/Link	American Society of Clinical Oncology Recommendations on Adjuvant Chemotherapy for Stage II Colon Cancer; <i>Journal of Clinical Oncology</i> , Vol 22, No 16 (August 15), 2004: pp. 3408-3419 http://www.asco.org/ac/1,1003,12-002032-00_18-0034698-00_19-0032489-00_20-001,00.asp
Staging System	2002;Stage II colon cancer was defined according to the TNM system classification of the American Joint Committee on Cancer as any pT3N0M0 or pT4N0M0 tumor of the colon.
G-Code <u>G9084</u> Onc dx colon t1-3,n1-2,no pr <u>G9085</u> Onc dx colon T4, N0 w/o prog	<p>The following recommendations focus on adjuvant chemotherapy for stage II colon cancer:</p> <ul style="list-style-type: none"> ▪ The routine use of adjuvant chemotherapy for medically fit patients with stage II colon cancer is <u>not recommended</u>. ▪ Clinical decisions to use adjuvant chemotherapy in stage II disease should be based on a discussion with the patient about the nature of the direct evidence supporting treatment, the assumptions inherent in accepting indirect evidence of benefit, the anticipated morbidity of treatment, the presence of high-risk prognostic features, and patient preferences. (See “talking points” within the full text guideline) ▪ Clinicians should carefully review the pathologic report to identify poor prognostic factors but there is inadequate evidence to support analysis of molecular markers to facilitate adjuvant treatment decision-making.

Use of Tumor Markers in Breast and Colorectal Cancer⁵

⁵ This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines> .

Citation/Link	2000 Update of Recommendations for the Use of Tumor Markers in Breast and Colorectal Cancer: Clinical Practice Guidelines of ASCO; <i>Journal of Clinical Oncology</i> , Vol 19, Issue 6 (March), 2001: 1865-1878 http://www.asco.org/ac/1,1003,12-002032-00_18-0032488-00_19-0032489-00_20-001,00.asp
G-Code <u>G9084</u> Onc dx colon t1-3,n1-2,no pr <u>G9085</u> Onc dx colon T4, N0 w/o prog <u>G9086</u> Onc dx colon T1-4 no dx prog <u>G9087</u> Onc dx colon metas evid dx <u>G9088</u> Onc dx colon metas no evid dx <u>G9089</u> Onc dx colon extent unknown	<p>The use of carcinoembryonic antigen (CEA) is not recommended as a screening test for colorectal cancer. However, it is important to consider the following regarding CEA:</p> <ul style="list-style-type: none"> ▪ CEA may be ordered preoperatively in patients with colorectal carcinoma if it would assist in staging and surgical treatment planning. Data are insufficient to support the use of CEA to determine whether to treat a patient with adjuvant therapy. ▪ If resection of liver metastases would be clinically indicated, it is recommended that postoperative serum CEA testing may be performed every 2 to 3 months in patients with stage II or III disease for 2 or more years after diagnosis. An elevated CEA, if confirmed by retesting, warrants further evaluation for metastatic disease but does not justify the institution of adjuvant therapy or systemic therapy for presumed metastatic disease. ▪ Present data are insufficient to recommend routine use of the serum CEA alone for monitoring response to treatment. If no other simple test is available to indicate a response, CEA should be measured at the start of treatment for metastatic disease and every 2 to 3 months during active treatment. Two values above baseline are adequate to document progressive disease even in the absence of corroborating radiographs. CEA is regarded as the marker of choice for monitoring colorectal cancer. <p>The following tumor markers could not be recommend because of insufficient data:</p> <ul style="list-style-type: none"> ▪ Lipid-associated sialic acid ▪ CA 19–9 ▪ DNA flow cytometrically derived ploidy (DNA index) for the management of colorectal cancer ▪ <i>p53</i> expression or mutation ▪ <i>ras</i> oncogene

MULTIPLE MYELOMA

Role of Bisphosphonates in Multiple Myeloma⁶

Citation/Link	American Society of Clinical Oncology Clinical Practice Guidelines: The Role of Bisphosphonates in Multiple Myeloma; <i>Journal of Clinical Oncology</i> , Vol 20, Issue 17 (September), 2002: 3719-3736 http://www.asco.org/ac/1,1003,12-002032-00_18-0024732-00_19-0024733-00_20-001,00.asp
G-Code <u>G9128</u> Onc dx multi myeloma stage I <u>G9129</u> Onc dx mult myeloma stg2 hig <u>G9130</u> Onc dx multi myeloma unknown	<p>The following should be considered about the role of bisphosphonates in patients with multiple myeloma:</p> <ul style="list-style-type: none"> ▪ For multiple myeloma patients who have on plain radiograph(s), lytic destruction of bone, intravenous pamidronate 90 mg delivered over at least 2 hours or zoledronic acid 4 mg over 15 minutes every 3 to 4 weeks are recommended. ▪ In patients with pre-existing renal disease and a serum creatinine < 265 µmol/L or < 3.0 mg/dL, no change in dosage, infusion time, or interval of pamidronate or zoledronic acid is required. ▪ Infusion times less than 2 hours with pamidronate or less than 15 minutes with zoledronic acid should be avoided. ▪ The Panel recommends intermittent evaluation (every 3 to 6 months) of all patients receiving chronic pamidronate or zoledronic acid therapy for the presence of albuminuria and azotemia. In patients experiencing unexplained albuminuria or azotemia, discontinuation of the drug is warranted until the renal problems are resolved. These patients should be reassessed every 3 to 4 weeks (with a 24-hour urine collection for total protein and urine protein electrophoresis) and pamidronate reinstated over a longer infusion time (≥ 2 hours) and at doses not to exceed 90 mg every 4 weeks when the renal function returns to baseline. ▪ Once initiated, intravenous pamidronate or zoledronic acid can be continued until there is evidence of a substantial decline in a patient's general performance status. ▪ It is reasonable to start intravenous bisphosphonates in multiple myeloma with osteopenia but no radiographic evidence of lytic bone disease. ▪ Intravenous pamidronate or zoledronic acid is recommended for patients with pain due to osteolytic disease and as an adjunctive treatment for patients receiving radiation therapy, analgesics, or surgical intervention to stabilize fractures or impending fractures. <p>The following are not suggested for multiple myeloma patients:</p> <ul style="list-style-type: none"> ▪ Starting bisphosphonates for patients with solitary plasmacytoma, or smoldering or indolent myeloma ▪ Starting bisphosphonates for patients with monoclonal gammopathy of undetermined significance ▪ Using biochemical markers of bone metabolism to monitor bisphosphonate use is not suggested for routine care

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NON-SMALL CELL LUNG CANCER (NSCLC)

Treatment of Unresectable Non-Small-Cell Lung Cancer Guideline

Citation/Link	American Society of Clinical Oncology Treatment of Unresectable Non-Small-Cell Lung Cancer Guideline: Update 2003; <i>Journal of Clinical Oncology</i> , Vol 22, No 2 (January 15), 2004: pp. 330-353 http://www.asco.org/ac/1,1003,12-002032-00_18-0032489-00_19-0032490-00_20-001,00.asp
Staging System	1997, International System for Staging of Lung Cancer (adopted by the AJCC); Using the TNM system: T1N0M0, stage IA; T2N0M0, stage IB; T1N1M0, stage IIA; T2N1M0 and T3N0M0, stage IIB; and T3N1M0, T1N2M0, T2N2M0, T3N2M0, stage IIIA. The TNM subsets in stage IIB are T4 any N M0 and any T N3M0. The TNM subsets in stage IV are any T any N M1. Patients with T3N0 tumors are categorized as stage IIB. The presence of satellite tumor(s) in the ipsilateral lung, in a distant, nonprimary tumor lobe, is categorized as M1 disease, consistent with the poorer prognosis of this patient population.
G-Code <u>G9066</u> Onc dx nsclc stg3B-4 metasta <u>G9067</u> Onc dx nsclc dx unknown nos	<p>Diagnostic evaluations of patients with advanced lung cancer should include the following:</p> <ul style="list-style-type: none"> ▪ A chest x-ray and chest (CT) scan with infusion of contrast material are recommended to stage locoregional disease. The CT scan should extend inferiorly to include the liver and adrenal glands. Assuming there is no evidence of distant metastatic disease on CT scan, FDG-PET scanning complements CT scan and is recommended. ▪ For patients with clinically operable NSCLC, biopsy is recommended of mediastinal lymph nodes found on chest CT scan to be greater than 1.0 cm in shortest transverse axis, or positive on FDG-PET scanning. Negative FDG-PET scanning does not preclude biopsy of radiographically enlarged mediastinal lymph nodes. <p>For the staging of distant metastatic disease, an FDG-PET scan is recommended when there is no evidence of distant metastatic disease on CT scan of the chest. In addition, the following should be considered:</p> <ul style="list-style-type: none"> ▪ A bone scan is optional in patients who have evidence of bone metastases on FDG-PET scanning, unless there are suspicious symptoms in regions not imaged by FDG-PET. In patients with a surgically resectable primary lung lesion, bone lesions discovered on bone scan or FDG-PET require histologic confirmation, or corroboration by additional radiologic testing. ▪ Head CT or MRI brain imaging with and without infusion of contrast material is recommended in patients who have signs or symptoms of CNS disease, as well as asymptomatic patients with stage III disease who are being considered for aggressive local therapy. ▪ The finding of an isolated adrenal or liver mass on ultrasonography, CT scan, or FDG-PET scan requires biopsy to rule out metastatic disease if the patient is otherwise considered to be potentially resectable. <p>Recommendations about the treatment options for unresectable NSCLC are outlined below.</p> <p><u>Chemotherapy</u></p> <ul style="list-style-type: none"> ▪ Chemotherapy in association with definitive thoracic irradiation is appropriate for selected patients with unresectable, locally advanced NSCLC. ▪ Chemotherapy is appropriate for selected patients with stage IV NSCLC. ▪ In unresectable stage III disease, chemotherapy plus radiotherapy prolongs survival compared with radiation alone and is most appropriate for individuals with good performance status. ▪ In stage IV disease, chemotherapy prolongs survival and is most appropriate for individuals with good performance status. ▪ Chemotherapy given to NSCLC patients should be a platinum-based combination regimen. ▪ First-line chemotherapy given to patients with advanced NSCLC should be a two-drug combination regimen. Non-platinum containing chemotherapy regimens may be used as alternatives to platinum-based regimens in the first line. For elderly patients, or patients with ECOG/Zubrod performance status 2, available data support the use of single-agent chemotherapy. ▪ In patients with unresectable stage III NSCLC, who are candidates for combined chemotherapy and radiation, the duration of chemotherapy should be two to four cycles of initial, platinum-based chemotherapy. ▪ In patients with unresectable stage III NSCLC who are candidates for combined chemotherapy and radiation, the duration of initial platinum-based chemotherapy should be no more than four cycles. ▪ In patients with stage IV NSCLC, first-line chemotherapy should be stopped at 4 cycles in patients who are not responding to treatment. First-line chemotherapy should be administered for no more

than six cycles in patients with stage IV NSCLC.

- In patients with unresectable stage III disease, chemotherapy may best be started soon after the diagnosis of unresectable NSCLC has been made.
- In patients with stage IV disease, if chemotherapy is to be given it should be initiated while the patient still has good performance status.
- Docetaxel is recommended as second-line therapy for patients with locally advanced or metastatic NSCLC with adequate performance status who have progressed on first-line, platinum-based therapy. Gefitinib is recommended for the treatment of patients with locally advanced or metastatic NSCLC after failure of both platinum-based and docetaxel chemotherapies.
- Initial treatment with an investigational agent or regimen is appropriate for selected patients with stage IV NSCLC, provided that patients are crossed over to an active treatment regimen if they have not responded after two cycles of therapy.
- NSCLC histology is not an important prognostic factor in patients with advanced, unresectable disease. The use of newer, putative prognostic factors such as *ras* mutations or *p53* mutations is investigational and should not be used in clinical decision-making.

Radiotherapy

- Radiation therapy should be included as part of treatment for selected patients with unresectable locally advanced NSCLC.
- Candidates for definitive thoracic radiotherapy with curative intent should have performance status 0, 1, or possibly 2, adequate pulmonary function, and disease confined to the thorax. Patients with malignant pleural effusions and those with distant metastatic disease are not appropriate candidates for definitive thoracic radiotherapy.
- Definitive-dose thoracic radiotherapy should be no less than the biologic equivalent of 60 Gy in 1.8- to 2.0-Gy fractions.
- Local symptoms from primary or metastatic NSCLC can be relieved by a variety of doses and fractionations of external-beam radiotherapy. In appropriately selected patients, hypofractionated palliative radiotherapy (of one to five fractions instead of 10) may provide symptomatic relief with acceptable toxicity in a more time efficient and less costly manner.

Surgery

- In patients with controlled disease outside of the brain who have an isolated cerebral metastasis in a resectable area, resection followed by whole-brain radiotherapy is superior to whole-brain radiotherapy alone.
- While feasible in selected patients, there is insufficient evidence to support routine resection of solitary adrenal metastases.

The following should be considered for surveillance and follow-up care of patients with advanced lung cancer:

- For patients treated with curative intent, in the absence of symptoms, a history and physical examination should be performed every 3 months during the first 2 years; every 6 months thereafter through year 5; and yearly thereafter.
- For patients treated with curative intent, there is no clear role for routine studies in asymptomatic patients and for those in whom no interventions are planned.
- There is no role for routine studies in most asymptomatic patients and those patients not undergoing therapeutic interventions. CT scan of the chest/abdomen; CT scan/MRI of the brain; FDG-PET scan; bone scan; bronchoscopy; complete blood cell count; and routine chemistries, including liver function tests, should only be performed as indicated by the patient's symptoms.
- Low-dose helical chest CT is more sensitive than chest x-ray for the identification of second primary cancers, but at this time remains investigational as part of the routine follow-up of patients with a history of unresectable NSCLC.

The following recommendations highlight lifestyle changes to prevent recurrent lung cancer:

- Smoking cessation, never initiating smoking, and avoidance of occupational and environmental exposure to carcinogenic substances are recommended as effective interventions to reduce the risk of second primary NSCLC in curatively treated patients. In patients with distant metastatic NSCLC, the outlook is poor and smoking cessation has little effect on overall prognosis, but may improve respiratory symptoms.
- The use of antioxidants and/or chemopreventive agents for NSCLC is investigational and their clinical use off-study is not recommended.

PROSTATE CANCER

Initial Hormonal Management of Androgen-Sensitive Metastatic, Recurrent, or Progressive Prostate Cancer⁷

Citation/Link	American Society of Clinical Oncology Recommendations for the Initial Hormonal Management of Androgen-Sensitive Metastatic, Recurrent, or Progressive Prostate Cancer; <i>Journal of Clinical Oncology</i> , Vol 22, No 14 (July 15), 2004: pp. 2927-2941 http://www.asco.org/ac/1,1003,12-002032-00_18-0034700-00_19-0032489-00_20-001,00.asp
Staging System	1992, TNM; Staging System; Tx–tumor cannot be assessed; T1–clinically inapparent tumor, not palpable or visible by imaging; T2–palpable tumor confined to gland; T3–tumor extends through prostatic capsule; T4–tumor is fixed or involves adjacent structures other than seminal vesicle; N1-3–regional lymph node(s) positive; M1–distant metastases. 1987, American Urological Association Staging System; A–incidental finding; B–palpable tumor confined to gland; C–extension beyond prostate capsule without evidence of metastases; D1–involvement of lymph nodes below aortic bifurcation; D2–lymph node involvement above bifurcation or distant metastases involving other sites.
G-Code <u>G9080</u> Onc dx prostate w/rise PSA <u>G9081</u> Onc dx prostate mets no cast <u>G9082</u> Onc dx prostate castrate met <u>G9083</u> Onc dx prostate unknown NOS	Initial hormonal management of androgen-sensitive metastatic, recurrent, or progressive prostate cancer should be guided by the following recommendations: <ul style="list-style-type: none">▪ Bilateral orchiectomy or medical castration with LHRH agonists are the recommended initial treatments for metastatic prostate cancer. A full discussion between practitioner and patient should occur to determine which is best for the patient. DES should not be considered as a standard first-line treatment option and is currently no longer commercially available in North America.▪ Nonsteroidal antiandrogen monotherapy may be discussed as an alternative to castration. Steroidal antiandrogens should not be offered as monotherapy.▪ A discussion should occur between the patient and his practitioner regarding combined androgen blockade compared to castration alone. The patient needs to appreciate that there is a small potential gain in overall survival with the addition of a nonsteroidal antiandrogen to medical or surgical castration and that increased side effects may occur as a result.▪ Until data from studies using modern medical diagnostic and biochemical tests, and standardized follow-up schedules become available, no specific recommendations can be issued regarding the question of early versus deferred ADT using LHRH agonists or orchiectomy. A discussion about the pros and cons of early versus deferred therapy should occur between patient and practitioner. Antiandrogen monotherapy is not recommended. Patients should be followed clinically and started on ADT once symptoms of locally progressive or metastatic disease present.▪ There are no data from prospective randomized trials upon which to base a recommendation about intermittent ADT compared to continuous ADT. Therefore, intermittent androgen blockade should still be considered experimental.

⁷ This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines> .

RECTAL CANCER

Colorectal Cancer Surveillance

Citation/Link	Colorectal Cancer Surveillance: 2005 Update of an American Society of Clinical Oncology Practice Guideline; <i>Journal of Clinical Oncology</i> , Vol 23, No 33 (November 20), 2005: pp. 8512-8519 http://www.asco.org/ac/1,1003,12-002032-00_18-0042948,00.asp
G-Code <u>G9091</u> Onc dx rectal T3 N0 no prog <u>G9092</u> Onc dx rectal T1-3,N1-2noprg <u>G9093</u> Onc dx rectal T4,N,M0 no prg	<p>Colorectal cancer surveillance should be conducted using the following recommendations:</p> <ul style="list-style-type: none"> ▪ Coordinate physician visits every 3 to 6 months for the first 3 years, every 6 months during years 4 and 5, and subsequently at the discretion of the physician. ▪ Physician visits should focus on the initial risk assessment, followed by the implementation of a surveillance strategy and periodic counseling based on estimated risk and feasibility of surgical interventions. ▪ Postoperative serum CEA testing should be performed every 3 months in patients with stage II or III disease for at least 3 years after diagnosis, if the patient is a candidate for surgery or systemic therapy. ▪ Patients who are at higher risk of recurrence, and who could be candidates for curative-intent surgery, should undergo annual CT of the chest and abdomen for 3 years after primary therapy for colon and rectal cancer. ▪ A pelvic CT scan should be considered for rectal cancer surveillance, especially for patients who have not been treated with radiotherapy. ▪ All patients with colon and rectal cancer should have a colonoscopy for the pre- or perioperative documentation of a cancer-and polyp-free colon. ▪ For patients who have not received pelvic radiation, flexible sigmoidoscopy of the rectum every six months for 5 years is recommended. <p>The following are not recommended for colorectal cancer surveillance:</p> <ul style="list-style-type: none"> ▪ Routine blood tests (i.e., CBCs or liver function tests) ▪ Periodic fecal occult blood testing ▪ Yearly chest x-rays. Since the Panel has recommended annual CT scanning of the chest and abdomen for high-risk patients who are candidates for resection, routine chest x-rays are probably not relevant. ▪ Until prospective data are available, use of molecular or cellular markers should not influence the surveillance strategy. <p>These guidelines also present information from the American Gastroenterology Association guidelines on colorectal cancer patients with high-risk genetic syndromes.</p>

Use of Tumor Markers in Breast and Colorectal Cancer⁸

Citation/Link	2000 Update of Recommendations for the Use of Tumor Markers in Breast and Colorectal Cancer: Clinical Practice Guidelines of ASCO; <i>Journal of Clinical Oncology</i> , Vol 19, Issue 6 (March), 2001: 1865-1878 http://www.asco.org/ac/1,1003,12-002032-00_18-0032488-00_19-0032489-00_20-001,00.asp
G-Code <u>G9090</u> Onc dx rectal T1-2 no progr <u>G9091</u> Onc dx rectal T3 N0 no prog	<p>The use of carcinoembryonic antigen (CEA) <u>is not recommended</u> as a screening test for colorectal cancer. However it is important to consider the following regarding CEA:</p> <ul style="list-style-type: none"> ▪ CEA may be ordered preoperatively in patients with colorectal carcinoma if it would assist in staging and surgical treatment planning. Although elevated preoperative CEA (> 5 ng/mL) may correlate with poorer prognosis, data are insufficient to support the use of CEA to determine whether to treat a patient with adjuvant therapy. ▪ If resection of liver metastases would be clinically indicated, it is recommended that postoperative serum CEA testing may be performed every 2 to 3 months in patients with stage II or III disease for 2 or more years after diagnosis. An elevated CEA, if confirmed by retesting, warrants further evaluation for metastatic disease but does not justify the institution of adjuvant therapy or systemic

⁸ This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines>.

<p><u>G9092</u> Onc dx rectal T1-3,N1-2noprg</p>	<p>therapy for presumed metastatic disease.</p> <ul style="list-style-type: none"> ▪ Present data are insufficient to recommend routine use of the serum CEA alone for monitoring response to treatment. If no other simple test is available to indicate a response, CEA should be measured at the start of treatment for metastatic disease and every 2 to 3 months during active treatment. Two values above baseline are adequate to document progressive disease even in the absence of corroborating radiographs. CEA is regarded as the marker of choice for monitoring colorectal cancer.
<p><u>G9093</u> Onc dx rectal T4,N,M0 no prg</p>	
<p><u>G9094</u> Onc dx rectal M1 w/mets prog</p>	<p>The following tumor markers could not be recommended because of insufficient data:</p> <ul style="list-style-type: none"> ▪ Lipid-associated sialic acid ▪ CA 19-9 ▪ DNA flow cytometrically derived ploidy (DNA index) for the management of colorectal cancer
<p><u>G9095</u> Onc dx rectal extent unknwn</p>	<ul style="list-style-type: none"> ▪ <i>p53</i> expression or mutation ▪ <i>ras</i> oncogene

SUPPORTIVE CARE⁹

Use of Antiemetics¹⁰

Citation/Link	Recommendations for the Use of Antiemetics: Evidence-Based, Clinical Practice Guidelines; <i>Journal of Clinical Oncology</i> , Vol 17, Issue 9 (September), 1999: 2971 http://www.asco.org/ac/1,1003,12-002032-00_18-0010772-00_19-0010774-00_20-001,00.asp
G-Code G9063-G9130	<p>The proceeding recommendations should be followed when using antiemetics to control for chemotherapy- and radiation-induced emesis.</p> <p><u>Acute Emesis (vomiting occurring 0 to 24 hours after chemotherapy)</u></p> <ul style="list-style-type: none"> ▪ Serotonin receptor antagonists and corticosteroids are the two classes of antiemetic agents at the highest therapeutic index. ▪ At equivalent doses, <u>serotonin receptor antagonists</u> have equivalent safety and efficacy and can be used interchangeably based on convenience, availability, and cost. There are currently four agents of this class commercially available in many countries: dolasetron, granisetron, ondansetron, and tropisetron. <ul style="list-style-type: none"> ▪ Established, proven doses of all agents are recommended. ▪ Single doses of antiemetics are effective and preferred for convenience and cost. ▪ At biologically equivalent doses, oral agents are equally effective and are as safe as intravenous antiemetics. In most settings, oral agents are less costly and more convenient; for these reasons, they are recommended over intravenous therapy. ▪ At equivalent doses, <u>corticosteroids</u> have equivalent safety and efficacy and can be used interchangeably. ▪ Single doses of corticosteroids are recommended. ▪ Dopamine antagonists, butyrophenones, phenothiazines, and cannabinoids are antiemetic agents at a lower therapeutic index. ▪ For chemotherapy with a high risk of emesis, selective serotonin antagonists (with dexamethosone) are recommended. ▪ Benzodiazepines and antihistamines are useful adjuncts to antiemetic drugs but are not recommended as single agents. ▪ It is recommended that serotonin antagonists be given with corticosteroids. <p>Recommendations on risk factors of chemotherapy-induced acute emesis include the following:</p> <ul style="list-style-type: none"> ▪ The combination of a 5-HT₃ antagonist plus a corticosteroid is recommended before chemotherapy for patients with agents of high emetic risk. ▪ A corticosteroid is suggested for patients being treated with agents of intermediate emetic risk. ▪ It is suggested that for patients being treated with agents of low emetic risk, no antiemetic be routinely administered before chemotherapy. ▪ It is suggested that when combination chemotherapy is given, the patient be given antiemetics appropriate for the chemotherapeutic agent of greatest emetic risk. ▪ It is suggested that antiemetics appropriate for the risk class of the chemotherapy be administered for each day of the chemotherapy. <p><u>Delayed Emesis (vomiting occurring >24 hours after chemotherapy)</u></p> <ul style="list-style-type: none"> ▪ Single agent corticosteroids are the most consistently useful drugs for the prevention of delayed emesis. ▪ Several trials have reported efficacy for oral metoclopramide given in combination with corticosteroids.

⁹ Non-disease-specific guidelines. These guidelines may refer to any diagnosis covered by the demonstration project; these guidelines are supportive care guidelines, and as such, may not apply to your particular patient at this visit. For the full text of each guideline, go to <http://www.asco.org/guidelines> or click on the appropriate citation/link.

¹⁰ This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines>.

	<ul style="list-style-type: none"> ▪ Studies have yielded conflicting results concerning the use of serotonin antagonists for delayed emesis. ▪ In delayed emesis, as with acute vomiting, combination regimens seem to be the most effective. <p>Recommendations on risk factors of chemotherapy-induced delayed emesis include the following:</p> <ul style="list-style-type: none"> ▪ For all patients receiving cisplatin, a corticosteroid plus metoclopramide or plus a 5-HT₃ antagonist is recommended for the prevention of delayed emesis. ▪ A prophylactic corticosteroid as a single agent, a prophylactic corticosteroid plus metoclopramide, and a prophylactic corticosteroid plus a 5-HT₃ antagonist are regimens suggested for the prevention of delayed emesis. ▪ No regular preventive use of antiemetics for delayed emesis is suggested for patients receiving chemotherapeutic agents of low emetic risk. <p><u>Anticipatory Emesis</u></p> <ul style="list-style-type: none"> ▪ Use of the most active antiemetic regimens appropriate for the chemotherapy being given to prevent acute or delayed emesis is suggested. Such regimens must be used with the initial chemotherapy, rather than after assessment of the patient's emetic response to less effective treatment. ▪ If anticipatory emesis occurs, behavioral therapy with systematic desensitization is effective and is suggested. <p>Recommendations on special emetic problems include the following:</p> <ul style="list-style-type: none"> ▪ The combination of a 5-HT₃ antagonist plus a corticosteroid is suggested before chemotherapy in children receiving chemotherapy of high emetic risk. ▪ A 5-HT₃ antagonist plus a corticosteroid is suggested for patients receiving high-dose chemotherapy. ▪ In order to prevent vomiting and nausea despite optimal prophylaxis in current or prior cycles it is suggested that clinicians: <ol style="list-style-type: none"> 1. Conduct a careful evaluation of risk, antiemetic, chemotherapy, tumor, and concurrent disease and medication factors 2. Ascertain that the best regimen is being given for the emetic setting 3. Consider adding an anti-anxiety agent to the regimen, and 4. Consider substituting a dopamine receptor antagonist, such as high-dose metoclopramide, for the 5-HT₃ antagonist (or add the dopamine antagonist to the regimen). <p><u>Radiation-Induced Emesis</u></p> <p>Guidelines for risk factors of radiation-induced emesis follow:</p> <ul style="list-style-type: none"> ▪ A serotonin receptor antagonist should be given with or without a corticosteroid before each fraction and for at least 24 hours after total body irradiation. (High Risk) ▪ A serotonin receptor antagonist or a dopamine receptor antagonist should be given before each fraction during hemibody irradiation, upper abdomen, abdominal-pelvic, mantle, cranial radiosurgery, and craniospinal radiotherapy. (Intermediate Risk) ▪ Treatment should be given on an as-needed basis only for patients receiving radiation of the cranium only, breast, head and neck, extremities, pelvis, and thorax. ▪ Dopamine or serotonin receptor antagonists are advised. Antiemetics should be continued prophylactically for each remaining radiation treatment day.
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Use of Epoetin in Patients with Cancer¹¹

Citation/Link	Use of Epoetin in Patients With Cancer: Evidence-Based Clinical Practice Guidelines of the American Society of Clinical Oncology and the American Society of Hematology; <i>Journal of Clinical Oncology</i> , Vol 20, Issue 19 (October), 2002: 4083-4107 http://www.asco.org/ac/1,1003,12-002032-0018-0024623-0019-0024624-0020-001,00.asp
G-Code G9063-G9130	The use of epoetin in patients with cancer include the following recommendations: <ul style="list-style-type: none"> ▪ The use of epoetin is recommended as a treatment option for patients with chemotherapy-associated anemia and a hemoglobin concentration that has declined to a level ≤ 10 g/dL. RBC transfusion is also an option depending upon the severity of anemia or clinical circumstances. ▪ For patients with declining hemoglobin levels but less severe anemia (those with hemoglobin concentration < 12 g/dL, but who have never fallen below 10 g/dL.) the decision of whether to use

¹¹ This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines>.

	<p>epoetin immediately or to wait until hemoglobin levels fall closer to 10 g/dL should be determined by clinical circumstances. RBC transfusion is also a therapeutic option when warranted by severe clinical conditions.</p> <ul style="list-style-type: none"> ▪ The recommended starting dose is 150 U/kg epoetin thrice weekly for a minimum of 4 weeks, with consideration given for dose escalation to 300 U/kg thrice weekly for an additional 4 to 8 weeks in those who do not respond to the initial dose. An alternative weekly dosing regimen (40,000 U/wk), based on common clinical practice, can be considered. Dose escalation of weekly regimens should be under similar circumstances to thrice weekly regimens. ▪ Continuing epoetin treatment beyond 6 to 8 weeks in the absence of response (e.g., < 1-2 g/dL rise in hemoglobin), assuming appropriate dose increase has been attempted in nonresponders, does not appear to be beneficial. Patients who do not respond should be investigated for underlying tumor progression or iron deficiency. As with other failed individual therapeutic trials, consideration should be given to discontinuing the medication. ▪ Hemoglobin levels can be raised to (or near) a concentration of 12 g/dL, at which time the dosage of epoetin should be titrated to maintain that level or restarted when the level falls to near 10 g/dL. Insufficient evidence to date supports the "normalization" of hemoglobin levels to above 12 g/dL. ▪ Baseline and periodic monitoring of iron, total iron-binding capacity, transferrin saturation, or ferritin levels and instituting iron repletion when indicated may be valuable in limiting the need for epoetin, maximizing symptomatic improvement for patients, and determining the reason for failure to respond adequately to epoetin. There is inadequate evidence to specify the optimal timing, periodicity, or testing regimen for such monitoring. ▪ There is evidence from one well-designed, placebo-controlled, randomized trial that supports the use of epoetin in patients with anemia associated with low-risk myelodysplasia. Treatment with epoetin for myeloma, non-Hodgkin's lymphoma, or chronic lymphocytic leukemia patients experiencing chemotherapy-associated anemia should follow the recommendations outlined above. ▪ Physicians caring for patients with myeloma, non-Hodgkin's lymphoma, or chronic lymphocytic leukemia are advised to begin treatment with chemotherapy and/or corticosteroids and observe the hematologic outcomes achieved solely through tumor reduction before considering epoetin. If a rise in hemoglobin is not observed after chemotherapy, epoetin should be used in accordance with the criteria outlined above for chemotherapy-associated anemia if clinically indicated. Blood transfusion is also a therapeutic option.
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Use of Hematopoietic Colony-Stimulating Factors¹²

Citation/Link	2000 Update of Recommendations for the Use of Hematopoietic Colony-Stimulating Factors: Evidence-Based, Clinical Practice Guidelines; <i>Journal of Clinical Oncology</i> , Vol 18, Issue 20 (October), 2000: 3558-3585 http://www.asco.org/ac/1.1003, 12-002032-00 18-0010944-00 19-0010945-00 20-001.00.asp
G-Code G9063-G9130	<p>Guidelines on the use of hematopoietic colony-stimulating factors (CSFs) include the following:</p> <ul style="list-style-type: none"> ▪ It is recommended that primary administration of CSFs be reserved for patients with a risk of febrile neutropenia (FN) that is in the range of 40% or higher. ▪ It is possible that primary CSF administration may be exceptionally warranted in patients at higher risk for chemotherapy-induced infectious complications, even though the data supporting such use are not conclusive. ▪ In the setting of many tumors exclusive of curable tumors (e.g., germ cell tumors), dose reduction after an episode of severe neutropenia should be considered as a primary therapeutic option. ▪ Current evidence supports the recommendation that CSFs <u>should not</u> be routinely used for patients with neutropenia who are afebrile. ▪ CSFs <u>should not</u> be routinely used as adjunct therapy for the treatment of uncomplicated fever and neutropenia. ▪ In the absence of more trials demonstrating a favorable effect on overall survival, disease-free survival, quality of life, or toxicity, there is no justification for the use of CSFs to increase chemotherapy dose-intensity or schedule or both outside of a clinical trial. ▪ CSFs are recommended to help mobilize PBPCs and after PBPC infusion. ▪ CSF use can be considered for patients with acute myeloid leukemia (AML) if benefits in terms of possible shortening of hospitalization outweigh the costs of CSF use.

¹² This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines> .

	<ul style="list-style-type: none"> ▪ There is no evidence that CSFs given either before or concurrently with chemotherapy for priming effects are of benefit, and their use in this fashion cannot be recommended outside the setting of the clinical trial. ▪ CSFs can be recommended after the completion of consolidation chemotherapy. ▪ CSFs can increase the ANC in neutropenic patients with myelodysplastic syndromes. Intermittent administration of CSFs may be considered in a subset of patients with severe neutropenia and recurrent infection. ▪ For patients with acute lymphoblastic leukemia (ALL) the data are sufficient to recommend G-CSF administration begun after completion of the first few days of chemotherapy of the initial induction or first postremission course, thus shortening the duration of neutropenia of less than 1,000/mm³ by approximately 1 week. ▪ There is no evidence that CSFs are of important benefit in patients with refractory or relapsed myeloid leukemia, and they should be used judiciously or not at all in such patients. ▪ CSFs should be avoided in patients receiving concomitant chemotherapy and radiation therapy, particularly involving the mediastinum. In the absence of chemotherapy, in patients receiving radiation therapy involving large fields, therapeutic use of CSFs may be considered if prolonged delays secondary to neutropenia are expected. ▪ In the absence of conclusive pediatric data, the guidelines recommended for adults are generally applicable to the pediatric age group. ▪ In adults, the recommended CSF doses are 5 mg/kg/d for G-CSF (filgrastim) and 250 mg/m²/d for GM-CSF (sargramostim) for all clinical settings other than PBPC mobilization. ▪ In the setting of PBPC mobilization, if G-CSF is used, a dose of 10 mg/kg/d seems preferable. Outside of this indication, CSF dose escalation is not advised. Rounding the dose to the nearest vial size is an appropriate strategy to maximize cost benefit. The preferred route of CSF administration is subcutaneous. ▪ The optimal timing and duration of CSF administration are still under investigation. Starting CSFs up to 5 days after PBPC reinfusion is reasonable based on available clinical data. ▪ Guidelines about equivalency of the available recombinant preparations of G-CSF and GM-CSF cannot be proposed.
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Platelet Transfusion for Patients With Cancer

Citation/Link	Platelet Transfusion for Patients With Cancer: Clinical Practice Guidelines of the American Society of Clinical Oncology; <i>Journal of Clinical Oncology</i> , Vol 19, Issue 5 (March), 2001: 1519-1538 http://www.asco.org/ac/1,1003,12-002032-00_18-0011068-00_19-0011069-00_20-001,00.asp
G-Code G9063-G9130	The following recommendations were made to assist clinicians regarding platelet transfusion in patients with cancer: <ul style="list-style-type: none"> ▪ Platelets for transfusion can be prepared either by separation of units of platelet concentrates (PCs) from whole blood, which are pooled before administration, or by apheresis from single donors. In routine circumstances, they can be used interchangeably. Single-donor platelets from selected donors are preferred when histocompatible platelet transfusions are needed. Both preparations can be stored for up to 5 days after collection at 20°C to 24°C with good maintenance of platelet viability. ▪ Prophylactic platelet transfusion should be administered to patients with thrombocytopenia resulting from impaired bone marrow function to reduce the risk of hemorrhage when the platelet count falls below a predefined threshold level. ▪ A threshold of 10,000/μL for prophylactic platelet transfusion should be used in adult patients receiving therapy for acute leukemia. Transfusion at higher levels may be necessary in newborns or in patients with signs of hemorrhage, high fever, hyperleukocytosis, rapid fall of platelet count, or coagulation abnormalities (for example, acute promyelocytic leukemia) and in those undergoing invasive procedures or in circumstances in which platelet transfusions may not be readily available in case of emergencies. It is probably reasonable to use similar guidelines for children and older infants. ▪ Clinical experience and the available data suggest that guidelines for prophylactic transfusion similar to those for patients with acute leukemia can be used in transplant recipients, with similar caveats about transfusion at higher counts in patients with complicating clinical conditions. ▪ Patients with chronic, stable or severe thrombocytopenia can be observed without prophylactic transfusion, reserving platelet transfusions for episodes of hemorrhage or during times of active treatment. ▪ Evidence obtained from observational studies supports the clinical benefit of prophylactic transfusion at a threshold of 10,000/μL platelets or less in patients with solid tumors. Prophylactic

	<p>transfusion at a threshold of 20,000/μL should be considered for patients receiving aggressive therapy for bladder tumors as well as those with demonstrated necrotic tumors, owing to their presumed increased risk of bleeding at these sites.</p> <ul style="list-style-type: none"> ▪ Thrombocytopenic patients frequently require invasive diagnostic or therapeutic procedures. A platelet count of 40,000/μL to 50,000/μL is sufficient to perform major invasive procedures with safety, in the absence of associated coagulation abnormalities. Certain procedures, such as bone marrow aspirations and biopsies, can be performed safely at counts of less than 20,000/μL. If platelet transfusions are administered before a procedure, it is critical that a posttransfusion platelet count be obtained to prove that the desired platelet count level has been reached. Platelet transfusions should also be available on short notice, in case intraoperative or postoperative bleeding occurs. For alloimmunized patients, histocompatible platelets must be available in these circumstances. ▪ Prevention of RhD alloimmunization resulting from RBCs contaminating platelet transfusions, either through the exclusive use of platelets from RhD negative donors or via anti-D immunoprophylaxis, should be considered for RhD-negative children (particularly girls) and for women of child-bearing age. ▪ The incidence of alloantibody mediated refractoriness to platelet transfusion can be decreased in patients with AML receiving induction chemotherapy when both platelet and RBC products are leukoreduced by filtration before transfusion (level I evidence). It is therefore appropriate to provide leukoreduced blood products to patients with AML from the time of diagnosis to ameliorate this important clinical problem. ▪ Because leukoreduction adds appreciably to the costs of transfusion, it should be used only for patients expected to require multiple platelet transfusions during their treatment courses and is not indicated for patients with cancer receiving RBCs or therapies that do not produce significant and sustained thrombocytopenia. ▪ Posttransfusion platelet counts should be obtained after all transfusions, whenever possible. Additional transfusions should be administered if the posttransfusion count is less than the platelet trigger appropriate for that clinical situation. Because patients may have a poor increment to a single transfusion yet have excellent platelet increments with subsequent transfusions, a diagnosis of refractoriness to platelet transfusion should only be made when at least two ABO-compatible transfusions, stored less than 72 hours, result in poor increments, as defined in the supporting text of the recommendation. ▪ Patients with alloimmune refractory thrombocytopenia, are best managed with platelet transfusions from donors who are HLA-A and HLA-B antigen selected. Alloimmunized patients should be transfused only for hemorrhagic events.
Chemotherapy and Radiotherapy Protectants¹³	
Citation/Link	<p>2002 Update of Recommendations for the Use of Chemotherapy and Radiotherapy Protectants: Clinical Practice Guidelines of the American Society of Clinical Oncology; <i>Journal of Clinical Oncology</i>, Vol 20, Issue 12 (June), 2002: 2895-2903 http://www.asco.org/ac/1,1003, 12-002032-00 18-0013550-00 19-0013551-00 20-001.00.asp</p>
G-Code G9063-G9130	<p>Recommendations for chemotherapy and radiotherapy protectants include guidelines on mesna, dexrazoxane, and amifostine. Specific recommendations follow.</p> <p>Mesna</p> <p><u>Mesna Use With Ifosfamide</u></p> <ul style="list-style-type: none"> ▪ The use of mesna is recommended to decrease the incidence of ifosfamide-associated urothelial toxicity. ▪ The daily dose of mesna should be calculated to equal 60% of the total daily dose of ifosfamide, administered as three bolus doses given 15 minutes before and 4 and 8 hours after administration of each dose of ifosfamide, when the ifosfamide dose is less than 2.0.5 g/m²/d administered as a short infusion. For use with continuous-infusion ifosfamide, mesna may be administered as a bolus dose equal to 20% of the total ifosfamide dose followed by a continuous infusion of mesna equal to 40% of the ifosfamide dose, continuing for 12 to 24 hours after completion of the ifosfamide infusion. ▪ There is insufficient evidence on which to base a recommendation for the use of mesna with ifosfamide doses in excess of 2.5 g/m²/d.

¹³ This guideline is undergoing a process of review and update. Newly updated guidelines will be available at <http://www.asco.org/guidelines> .

- The recommended dose and schedule is to administer mesna as an IV bolus injection in a dosage equal to 20% of the ifosfamide dosage (weight/weight) at the time of ifosfamide administration. Mesna tablets are given orally in a dosage equal to 40% of the ifosfamide dose at 2 and 6 hours after each dose of ifosfamide. The total daily dose of mesna is 100% of the ifosfamide dose. Patients who vomit within 2 hours of taking oral mesna should repeat the dose or receive IV mesna. The dosing schedule should be repeated on each day that ifosfamide is administered.

Mesna Use With Cyclophosphamide

- Mesna plus saline diuresis or forced saline diuresis is recommended to decrease the incidence of urothelial toxicity associated with high-dose cyclophosphamide in the setting of stem-cell transplantation.

Surveillance of Patients Receiving Ifosfamide and/or Cyclophosphamide and Mesna

- There are insufficient data to make a recommendation regarding specific monitoring for hemorrhagic cystitis in patients receiving mesna to ameliorate ifosfamide or high-dose cyclophosphamide-associated urothelial toxicity.

Dexrazoxane

Breast Cancer

- Dexrazoxane should not be routinely used for patients with metastatic breast cancer receiving initial doxorubicin-based chemotherapy.
- The use of dexrazoxane should be considered for patients with metastatic breast cancer who have received more than 300 mg/m² of doxorubicin in the metastatic setting and who may benefit from continued doxorubicin-containing therapy.
- Dexrazoxane in the adjuvant setting is not suggested outside of a clinical trial.

Other Malignancies

- Dexrazoxane can be considered in adult patients who have received more than 300 mg/m² of doxorubicin-based therapy. Caution should be exercised in the use of dexrazoxane in settings in which doxorubicin-based therapy has been shown to improve survival.
- There is insufficient evidence to make a recommendation for the use of dexrazoxane in the treatment of pediatric malignancies.

Other Anthracycline Doses and Schedules

- Dexrazoxane may be considered for patients responding to anthracycline-based chemotherapy for advanced breast cancer and for whom continued epirubicin therapy is clinically indicated.
- The current data for high-dose epirubicin plus dexrazoxane is insufficient to make a recommendation.

Patients With Cardiac Risks

- There is insufficient evidence on which to base a recommendation for the use of dexrazoxane in patients with cardiac risk factors or underlying cardiac disease.

Monitoring Therapy

- Patients receiving dexrazoxane should continue to undergo cardiac monitoring. After cumulative doxorubicin doses of 400 mg/m², cardiac monitoring should be frequent. The panel suggests repeating the monitoring study after 500 mg/m² and subsequently after every 50 mg/m² of doxorubicin. The termination of dexrazoxane/doxorubicin therapy should be strongly considered in patients who develop a decline in LVEF to below institutional normal limits or who develop clinical congestive heart failure.
- It is suggested that patients who are being treated with dexrazoxane receive dexrazoxane at a ratio of 10:1 with the doxorubicin dose, given by slow IV push or short IV infusion, 15 to 30 minutes before doxorubicin or epirubicin administration. A ratio of 10:1 with the epirubicin dose may be reasonable. However, it should be noted that the optimal dose ratio has not been determined.

Amifostine

Amifostine Use in Chemotherapy-Associated Complications

- Amifostine may be considered for the prevention of nephrotoxicity in patients receiving cisplatin-based chemotherapy.
- Amifostine should be considered for the reduction of neutropenia-associated events in patients receiving alkylating-agent chemotherapy. However, in the absence of clinical data supporting maintenance of the chemotherapy dose-intensity, physicians should consider chemotherapy dose reduction as an alternative to the use of amifostine.
- Present data are insufficient to recommend the use of amifostine for protection against thrombocytopenia in patients receiving alkylating-agent chemotherapy or carboplatin.
- Present data are insufficient to support the routine use of amifostine for the prevention of cisplatin-

associated neurotoxicity or ototoxicity.

- There are no data to support the use of amifostine for prevention of paclitaxel-associated neurotoxicity.

Dose and Administration of Amifostine With Chemotherapy

- In adults, the suggested dose of amifostine with chemotherapy is 910 mg/m². Amifostine is administered intravenously, over 15 minutes, 30 minutes before chemotherapy. Administration of amifostine requires close patient monitoring, and toxicity is clearly dose related. All patients should be treated with antiemetics before the administration of amifostine, and pretreatment with intravenous fluids should also be considered. Blood pressures are taken every 3 to 5 minutes during the 15-minute infusion. Amifostine is discontinued if blood pressure declines significantly or the patient becomes symptomatic. The hypotension associated with amifostine usually occurs at the end of the infusion and is reversed with discontinuation of the amifostine, administration of saline, and placing the patient in the Trendelenburg position. There are insufficient data to recommend redosing of amifostine after chemotherapy.

Amifostine Use in Radiation Therapy–Associated Complications

- Amifostine may be considered to decrease the incidence of acute and late xerostomia in patients undergoing fractionated radiation therapy in the head and neck region.
- Present data are insufficient to recommend amifostine to prevent mucositis associated with radiation therapy.

Dose and Administration of Amifostine With Radiation Therapy

- When given with radiation therapy, the recommended amifostine dose is 200 mg/m²/d, given as a slow IV push over 3 minutes, 15 to 30 minutes before each fraction of radiation therapy. Blood pressure should be measured just before and immediately after the 3-minute amifostine infusion. The hypotension associated with amifostine at this dose is less frequent but still requires close monitoring.