NATIONAL QUALITY FORUM

Resource Use Measure Evaluation 1.0
January 2011

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

Resource Use Definition:

- Resource use measures are broadly applicable and comparable measures of input counts—(in terms of units or dollars)-- applied to a population or population sample
- Resource use measures count the frequency of specific resources; these resource units may be monetized, as appropriate.
- The approach to monetizing resource use varies and often depends on the perspective of the measurer and those being measured. Monetizing resource use allows for the aggregation across resources.

NQF Staff: NQF staff will complete a preliminary review of the measure to ensure conditions are met and the form has been completed according to the developer's intent. Staff comments have been highlighted in green.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the subcriteria are met (TAP or Steering Committee)
High (H) – based on the information submitted, there is high confidence (or certainty) that the criterion is met
Moderate (M) – based on the information submitted, there is moderate confidence (or certainty) that the criterion is met
Low (L) - based on the information submitted, there is low confidence (or certainty) that the criterion is met
Insufficient (I) – there is insufficient information submitted to evaluate whether the criterion is met, e.g., blank, incomplete, or information is not relevant, responsive, or specific to the particular question (unacceptable)
Not Applicable (NA) - Not applicable (only an option for a few subcriteria as indicated)

Evaluation ratings of whether the measure met the overall criterion (Steering Committee)
Yes (Y)- The overall criteria has been met
No (N)-The overall criterion has NOT been met
High (H) – There is high confidence (or certainty) that the criterion is met
Moderate (M) – There is moderate confidence (or certainty) that the criterion is met
Low (L) - There is low confidence (or certainty) that the criterion is met

Recommendations for endorsement (Steering Committee)
Yes (Y) – The measure should be recommended for endorsement
No (N)-The measure should NOT be recommended for endorsement
Abstain (A)- Abstain from voting to recommend the measure

TAP/Workgroup Reviewer Name:

Steering Committee Reviewer Name:

Staff Reviewer Name(s):

NQF Review #: 1579 **NQF Project:** Endorsing Resource Use Standards- Phase II

BRIEF MEASURE INFORMATION

Measure Title: Episode of care for cases of newly diagnosed breast cancer over a 15 month period

Measure Steward (IP Owner): American Board of Medical Specialties Research and Education Foundation, 222 N. LaSalle St., Suite 1500, Chicago, Illinois, 60601

Brief description of measure: Resource use and costs associated with management of newly diagnosed cases of breast cancer over an 18-month period, three months preceding the diagnosis date and 15 months following the initial diagnosis. Patients are included in the cohort based on identification of new diagnoses of breast cancer using a validated algorithm. Women with a diagnosis code for breast cancer are identified during the measurement year and stratified into high likelihood cases if they have surgical or procedure claims related to breast cancer (mastectomy, lumpectomy, radiation treatment) or have more than two visits with a primary diagnosis of breast cancer. Women are identified as non-high likelihood cases if they do not meet these criteria. These women are included as potential cases if they meet certain criteria related to surgery, multiple claims, other cancers and secondary breast cancer. Patients with a previous diagnosis of breast cancer, metastatic disease and non-melanoma non-skin cancer are excluded. Eligible patients are followed for 15 months following the initial date of their diagnosis during the measurement period and data from the three months preceding the entry date are also captured for identification of breast cancer-related care. Patients are stratified into four mutually exclusive groups: 1) Chemotherapy, with trastuzumab; 2) chemotherapy, no trastuzumab; 3) no chemotherapy; and 4) neoadjuvant chemotherapy. Overall breast cancer-related costs and resource use are calculated for each stratum. Costs of care are calculated at a system level due to the inability to measure important case-mix factors such as stage of disease and estrogen and progesterone receptor status in current administrative datasets.

Resource use service categories: Inpatient services: Inpatient facility services
Inpatient services: Evaluation and management
Inpatient services: Procedures and surgeries
Inpatient services: Imaging and diagnostic
Inpatient services: Lab services
Inpatient services: Admissions/discharges
Ambulatory services: Outpatient facility services
Ambulatory services: Emergency Department
Ambulatory services: Pharmacy
Ambulatory services: Evaluation and management
Ambulatory services: Procedures and surgeries
Ambulatory services: Imaging and diagnostic
Ambulatory services: Lab services
Durable Medical Equipment (DME)

Brief description of measure clinical logic: Resource use and costs associated with management of newly diagnosed cases of breast cancer over an 18-month period, three months preceding the diagnosis date and 15 months following the initial diagnosis. Patients are included in the cohort based on identification of new diagnoses of breast cancer using a validated algorithm. Women with a diagnosis code for breast cancer are identified during the measurement year and stratified into high likelihood cases if they have surgical or procedure claims related to breast cancer (mastectomy, lumpectomy, radiation treatment) or have more than two visits with a primary diagnosis of breast cancer. Women are identified as non-high likelihood cases if they do not meet these criteria. These women are included as potential cases if they meet certain criteria related to surgery, multiple claims, other cancers and secondary breast cancer. Patients with a previous diagnosis of breast cancer, metastatic disease and non-melanoma non-skin cancer are excluded. Eligible patients are followed for 15 months following the initial date of their diagnosis during the measurement period and data from the three months preceding the entry date are also captured for identification of breast cancer-related care. Patients are stratified into four mutually exclusive groups: 1) Chemotherapy, with trastuzumab; 2) chemotherapy, no trastuzumab; 3) no chemotherapy; and 4) neoadjuvant chemotherapy. Overall breast cancer-related costs and resource use are calculated for each stratum. Costs of care are calculated at a system level due to the inability to measure important case-mix factors such as stage of disease and estrogen and progesterone receptor status in current administrative datasets.

If included in a composite or paired with another measure, please identify composite or paired measure:

Subject/ Topic Areas: Cancer
Type of resource use measure: Cost/Resource Use
Data Type: Administrative claims Other

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. Measure Steward Agreement. *The measure is in the public domain or an intellectual property (measure steward agreement) is signed. Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* **A.1.Do you attest that the measure steward holds intellectual property rights to the measure? (If no, do not submit)** Yes **A.2. Please check if either of the following apply:** **A.3. Measure Steward Agreement.** Agreement signed and submitted **A.4. Measure Steward Agreement attached:** Signed_NQFMeasureSteward Agreement_020309-634387013972253336.pdf	**A** **Y☐** **N☐**
B. Maintenance. *The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. (If no, do not submit)* Yes, information provided in contact section	**B** **Y☐** **N☐**
C. Purpose/ Use *(All the purposes and/or uses for which the measure is specified and tested:* Quality Improvement (Internal to the specific organization)	**C** **Y☐** **N☐**
D. Testing. *The measure is fully specified and tested for reliability and validity (See guidance on measure testing).* Yes, reliability and validity testing completed	**D** **Y☐** **N☐**
E. Harmonization and Competing Measures. *Have NQF-endorsed measures been reviewed to identify if there are related or competing measures? (List the NQF # and title in the section on related and competing measures)* Yes *E.1.***Do you attest that measure harmonization issues with related measure (either the same measure**	**E** **Y☐** **N☐**

focus or the same target population) have been considered and addresses as appropriate? (List the NQF # and title in the section on related and competing measures) No related measures *E.2.Do you attest that competing measures (both the same measure focus and the same target population) have been considered and addressed where appropriate?* No competing measures	
F. Submission Complete. *The requested measure submission information is complete and responsive to the questions so that all the information needed to evaluate all criteria is provided.*	**F** **Y☐** **N☐**
Have all conditions for consideration been met? **Staff Notes to Steward** (*if submission returned*)**:**	**Y ☐** **N ☐**
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
File Attachments Related to Measure/Criteria: Attachment: Attachment: S5_Data Dictionary-634350259983152765.pdf Attachment: Attachment: Attachment: Attachment: Attachment: Attachment: Attachment: Attachment: SA_Reliability_Validity Testing Breast Cancer.pdf	

IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in performance. **Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All subcriteria must be met to pass this criterion.**	**Eval Rating**
High Impact **IM1. Demonstrated high impact aspect of healthcare:** Affects large numbers A leading cause of morbidity/mortality High resource use **IM1.1. Summary of evidence of high impact:** The Institute of Medicine and AQA have identified breast cancer as one of 20 conditions that should be considered priority areas in need of quality improvement based on its relevance to a significant volume of patients, its impact on those patients, and the perception of opportunity to significantly improve the quality and efficiency of related care (1). Breast cancer is the most commonly diagnosed cancer in women and the second leading cause of cancer death in women (2). In the United States there were 182,480 new cases of breast cancer in 2008 with 40,480 deaths (22.2% mortality) (3). Breast cancer is the leading cause of premature mortality among women due to death from cancer, and a leading cause of premature mortality from all causes of death (4). Age adjusted breast cancer mortality rates were congruent between	**1a** **H☐** **M☐** **L☐** **I☐**

African-American and white women until the early 1980s, but thereafter a continued divergence was evident with higher mortality rates for African-American women (29 vs. 22 cancer deaths per 100,000 woman-years) (5).

On average, women in the United States have the highest breast cancer rates in the world: among whites the risk is 141/100,000 and among American-Americans it is 121/100,000 (7). The risk of being diagnosed with breast cancer increases as women age. The 10 year risk of breast cancer diagnosis at age 30 is 1 in 225 (0.4%), increasing to 1 in 25 (4.0%) for women age 70 (8).
The health care cost of breast cancer treatment is significant. From 1990-2000 actual United States screening patterns and subsequent treatment accrued 947.5 million quality adjusted life years and cost $166 billion of the over the lifetime of the screened women (7). The total cost of breast cancer treatment alone was $103 billion. The per-patient treatment costs ranged from $12,000 to $27,000 (in year 2000 dollars) depending on the stage at detection of breast cancer (9-11).

In a recent study, Mariotto et al. used the most recently available cancer incidence, survival, and medical cost of care data in the United States to estimate and project the national costs of cancer care through the year 2020. Female breast was the cancer site with the highest cost in 2010 at $16.50 billion and is projected to cost $20.50 billion (in 2010 dollars) by the year 2020 (12).

Campbell et al, systematically summarized and analyzed the published literature on per-patient costs of breast cancer, finding estimates for the treatment costs of breast cancer vary widely in methodology, perspective, patient populations and time horizon. This review included 29 US cost-of-illness studies for breast cancer. The estimates of lifetime per-patient costs of breast cancer varied widely, ranging from $US20 000 to $US100 000. (13)

IM1.2. Citations for evidence of high impact cited in IM1.1.:

1. Alliance AQ. Candidate list of conditions for cost of care measurement. Available at: http://www.aqaalliance.org/files/CandidateListofConditionsforCostofCare MeasurementApproved.pdf. Accessed April 17, 2011.
2. Cancer Facts & Figures 2006. American Cancer Society, 2006. (Accessed February 7, 2007, at http://www.cancer.org/downloads/STT/CAFF2006Wsecured.pdf.)
3. Vetto JT, Luoh SW, Naik A. Breast cancer in premenopausal women. Curr Probl Surg 2009;46:944-1004.
4. Horner M RL, Krapcho M, et al. SEER Cancer Statistics Review, 1975-2006. Bethesda: National Cancer Institute; 2009.
5. Jatoi I, Anderson WF, Rao SR, Devesa SS. Breast cancer trends among black and white women in the United States. J Clin Oncol 2005;23:7836-41.
6. Reis LAG EM, Kosary CL, Hankey BF. SEER Cancer Statistics Review: 1975-2000. Bethesda: National Cancer Institute; 2003.
7. Risk of breast cancer by age. Centers for Disease Control and Prevention. http://www.cdc.gov/newscenter/pressreleases/CISNET.)
8. Stout NK, Rosenberg MA, Trentham-Dietz A, Smith MA, Robinson SM, Fryback DG. Retrospective cost-effectiveness analysis of screening mammography. J Natl Cancer Inst 2006;98:774-82.
9. Brown ML, Fintor L. U.S. screening mammography services with mobile units: results from the National Survey of Mammography Facilities. Radiology 1995;195:529-32.
10. Farria D, Feig SA. An introduction to economic issues in breast imaging. Radiol Clin North Am 2000;38:825-42.
11. Taplin SH, Barlow W, Urban N, et al. Stage, age, comorbidity, and direct costs of colon, prostate, and breast cancer care. J Natl Cancer Inst 1995;87:417-26.
12. Mariotto AB, Yabroff KR, Shao Y et al. Projections of the cost of cancer care in the United States: 2010-2020. J Natl Cancer Inst. 201;103:117-28.
13. Campbell JD, Ramsey SD. The costs of treating breast cancer in the US: a synthesis of published evidence. Pharmacoeconomics. 2009;27(3):199-209.

IM2. Opportunity for Improvement

IM2.1. Briefly explain the benefits envisioned by use of this measure:

The intent is that the measure will be paired with quality measures to examine the overall efficiency of care being provided for patients with breast cancer. This will help to identify regions that may be utilizing best care practices through identification of those that provide 'efficient' care by examining both the resource use as well as the quality of care. It will be necessary to put both of these measures together in order to fully realize the potential of resource use measures. However, in the interim this can be used to compare the relative resource use across different regions to examine patterns in breast cancer-related healthcare costs. This may provide actionable information if for example one region´s costs are always higher than another because of differential treatment patterns.

IM2.2. Summary of data demonstrating variation across providers or entities:

Implementation of widespread mammographic screening has contributed to a stage shift for newly diagnosed disease, with an average tumor size at presentation of less than 2cm (1). At least two-thirds of patients are eligible for breast conservation surgery, but rates of mastectomy vary both geographically and institutionally (2).

Given all these treatment options, it is not surprising that the initial treatment for breast cancer varies greatly across the United States (3-5). This variation has been attributed to a host of factors: race, age at time of presentation, socioeconomic status, level of education, and surgeon capabilities (6-8). For example, the highest percentage of patients who received breast conservation therapy as initial treatment was seen in the Northeast (69.9%), while the lowest percentage was seen in the South (57.7%)(9). The literature suggests that the variability in treatment selection is linked to a disparity in survival rates as well (10).

Fisher et al. in a study of , the National Surgical Adjuvant Breast and Bowel Project (NSABP) first published in 1989 and re-analyzed in 1995, found no significant differences in overall survival, disease-free survival, or survival free of disease at distant sites between the patients who underwent total mastectomy and those treated by lumpectomy alone or by lumpectomy plus breast irradiation (11).

In a recent study published by Giuliano et al in February 2011, the authors reported that for women who meet certain criteria (about 20 percent of breast cancer patients, or 40,000 women a year in the United States)-- taking out cancerous nodes has no advantage. The authors found that is did not change the treatment plan, improve survival or make the cancer less likely to recur and contributed to complications of infection and lymphedema (12).The findings are part of a trend to move away from radical surgery for breast cancer. Rates of mastectomy, removal of the whole breast, began declining in the 1980s after studies found that for many patients, survival rates after lumpectomy and radiation were just as good as those after mastectomy

Studies (13) have shown that women may not be fully informed about surgical treatment options. These concerns have led to laws in 20 states that require surgeons to discuss both breast conserving surgery (BCS) with radiation and mastectomy with patients to ensure informed decisions. Knowledge of the risks and benefits of each alternative is necessary for an informed decision, but studies have shown that low knowledge of the surgical alternatives exist even among those who have been through treatment, and that vulnerable populations may be at a particular disadvantage when it comes to making informed surgery decisions (13). In another study (14), site of care, rather than sociodemographic variables, was the only significant predictor of delay in diagnostic resolution among breast cancer patients from six community health centers (CHC) in Boston. This suggests that timely follow-up may be due to system issues within each of the CHCs, rather than differences in the populations. System issues may reflect resource constraints, and variations in providers' prioritization of services to meet community needs (13).

1b

Breast Cancer Screening:
--Breast cancer screening is a topic of much controversy and variations in recommended screening depending upon the source of guidelines. Since 1997, annual screening for all women aged 40 years and older has been recommended by the American Cancer Society (ACS) and the American College of Radiology (15, 16) .43,44 However, the in 2009, the USPSTF issued guidelines advising against any screening for women in their 40s except for those at very high risk—citing small net benefit for screening women ages 40-49 and concern over false positive results.(17)

--Various studies have found MRI screening can be cost-effective for very high-risk women, such as BRCA carriers, and others at 20% or greater lifetime risk. Further studies are needed to determine whether MRI is cost-effective for those at

H☐
M☐
L☐
I☐

moderately high (15%–20%) lifetime risk (18-20).

--Widespread implementation in the United States of image-guided core biopsy instead of open surgical biopsy has occurred since 1990 with various studies showing costs of image-guided core biopsy to be 16% to 33% of those for an open excisional biopsy(21-24)..30–37 It has been estimated that more than one million breast biopsies are performed in the United States yearly, but fewer than 25% prove to be malignant (25). In 1999, Burkhardt and Sunshine estimated that use of image-guided core biopsies instead of open surgical biopsies for all lesions would be equivalent to a cost reduction of about $1.6 billion (26).

IM2.3. Citations for data on variation:

1. Benson JR, Jatoi I, Keisch M, Esteva FJ, Makris A, Jordan VC. Early breast cancer. Lancet 2009;373:1463-79.
2. Locker G SR, Cuzick J. Breast surgery in the ATAC trial: women in the United States are more likely to have mastectomy. Breast Cancer Res Treat 2002;76:S35.
3. Albain KS, Green SR, Lichter AS, et al. Influence of patient characteristics, socioeconomic factors, geography, and systemic risk on the use of breast-sparing treatment in women enrolled in adjuvant breast cancer studies: an analysis of two intergroup trials. J Clin Oncol 1996;14:3009-17.
4. Hiotis K, Ye W, Sposto R, Goldberg J, Mukhi V, Skinner K. The importance of location in determining breast conservation rates. Am J Surg 2005;190:18-22.
5. Nattinger AB, Gottlieb MS, Veum J, Yahnke D, Goodwin JS. Geographic variation in the use of breast-conserving treatment for breast cancer. N Engl J Med 1992;326:1102-7.
6. Kotwall CA, Covington DL, Rutledge R, Churchill MP, Meyer AA. Patient, hospital, and surgeon factors associated with breast conservation surgery. A statewide analysis in North Carolina. Ann Surg 1996;224:419-26; discussion 26-9.
7. Stafford D, Szczys R, Becker R, Anderson J, Bushfield S. How breast cancer treatment decisions are made by women in North Dakota. Am J Surg 1998;176:515-9.
8. Stewart AK, Bland KI, McGinnis LS, Jr., Morrow M, Eyre HJ. Clinical highlights from the National Cancer Data Base, 2000. CA Cancer J Clin 2000;50:171-83.
9. Sariego J. Regional variation in breast cancer treatment throughout the United States. Am J Surg 2008;196:572-4.
10. Skinner KA, Helsper JT, Deapen D, Ye W, Sposto R. Breast cancer: do specialists make a difference? Ann Surg Oncol 2003;10:606-15.
11. Fisher B, Anderson S, Redmond CK, et al. Reanalysis and results after 12 years of follow-up in a randomized clinical trial comapring total mastectomy with lumpectomy with or without irradiation in the treatment of breast cancer. N Engl J Med 1995;333:1456-61.
12. Giuliano AE, Hunt KK, Ballman KV, et al. Axillary dissection vs no axillary dissection in women with invasive breast cancer and sentinel node metastasis: a randomized clinical trial. JAMA. 2011 Feb 9;305(6):569-75.
13. Hawley, S.T., Fagerlin, A., et al., (2008) Racial/ethnic disparities in knowledge about risks and benefits of breast cancer treatment: Does it matter where you go? Health Services Research, 43(4): 1366-73.
14. Battaglia, T.A., Santana, M.C., et al., (2010) Predictors of timely follow-up after abnormal cancer screening among women seeking care at urban community health centers. Cancer, 116(4): 913-921.
15. Smith RA, Saslow D, Sawyer KA, et al. American Cancer Society guidelines for breast cancer screening: update 2003. CA Cancer J Clin 2003;53:141–69.
16. Feig SA, D'Orsi CJ, Hendrick RE, et al. American College of Radiology Guidelines for breast cancer screening. AJR Am J Roentgenol 1998;171:29–33.
17. US Preventive Services Task Force. Screening for breast cancer: US preventive services task force recommendation statement.AnnInternMed2009;151:716–26.
18. Plevritis SK, Kurian AW, Sigal BM, et al. Cost-effectiveness of screening BRCA1/2 mutation carriers with breast magnetic resonance imaging. JAMA 2006;295: 2374–84.
19. Lee JM, McMahon PM, Kong CY, et al. Cost-effectiveness of breast MRI imaging and screen-film mammography for screening BRCA 1 gene mutation carriers. Radiology 2010;254:793–800.
20. Taneja C, Edelsberg J, Weycker D, et al. Cost effectiveness of breast cancer screening with contrast- enhanced MRI in high-risk women. J Am Coll Radiol 2009;6:171–9.
21. Howisey RL, Acheson MBG, Rowbotham RK, et al. A comparison of Medicare reimbursement and results for various imaging-guided breast biopsy techniques.

Am J Surg 1997;173:395–8.
22. Lind DS, Minter R, Steinbach B, et al. Stereotactic core biopsy reduces the reexcision rate and the cost of mammographically detected cancer. J Surg Res 1998;78:23–6.
23. Rubin E, Mennemeyer ST, Desmond RA, et al. Reducing the cost of diagnosis of breast cancer. Cancer 2001;91:324–32.
24. Cross MJ, Evans WP, Peters GN, et al. Stereotactic breast biopsy as an alternative to open excisional biopsy. Ann Surg Oncol 1995;2:195–200.
25. Nields MW. Cost-effectiveness of image-guided core needle biopsy versus surgery in diagnosing breast cancer. Acad Radiol 1996;3(Suppl 1):S138–40.
26. Burkhardt JH, Sunshine JH. Core-needle and surgical breast biopsy: comparison of three methods of assessing cost. Radiology. 1999 Jul;212(1):181-8.

IM2.4. Summary of data on disparities by population group:

There is a pronounced racial/ethnic and socioeconomic gradient in the continuum of breast cancer care and outcomes, including mammography screening, incidence, stage at diagnosis, survival and mortality.

Investigators have found that disparities in breast cancer related outcomes have narrowed since 1987 (1), but that socially advantaged groups improved at a faster rate. For example, mortality rates declined 10% for African American women from 1992 to 2004, compared with a 22% decrease among white women (1). A large body of literature highlights multiple factors associated with poorer survival among African American and other minority women, including lower rates of mammography screening (2), lack of health insurance (3), later stage at diagnosis (4), disparities in the receipt of stage-appropriate treatment (5), provider variability (6), and a variety of social and cultural factors.

Screening Mammography

Screening mammography is essential for the early detection of breast cancer, and is associated with reduced morbidity and increased survival. The use of mammography is below national guidelines, and there are reports of recent declines in screening rates (7). The Behavioral Risk Factor Surveillance System (BRFSS) interview was used by investigators (2) to examine disparities in screening mammography. They found that during the period of 2000-2005, women in their 40s and those with lower relative incomes were less likely to have been screened. The disparity based on relative income was greater than that based on education or race (2). Other investigators (7) used National Cancer Institute Surveillance, Epidemiology and End Results (SEER) data to examine screening patterns among women over the age of 64, and Medicare-eligible women from 11 states. They found site-specific contextualizing factors such as community acculturation, and community elderly impoverishment to have significant direct impacts on mammography use. This pattern varied across states, and the authors emphasize that when planning interventions at the community level, a “one size fits all” approach to increasing screening is not appropriate. Local community characteristics need to be taken into consideration for interventions to be effective (7).

In addition, the preventive potential of cancer screening rests on timely diagnostic follow-up once an abnormality has been detected, (8). The time it takes to complete diagnostic evaluation varies widely, with the uninsured or underinsured and racial/ethnic minorities often having the longest delays (8). Other investigators (9) found in a retrospective cohort of 6722 women, that after an abnormal mammogram, African American and Hispanic women had longer times to diagnostic follow-up compared to non-Hispanic white women. It has been suggested that economic, social, and cultural factors may influence delays at each stage of the cancer care continuum (9). In a review of literature, authors (10) categorized barriers to follow-up care after an abnormal screening as patient, provider, and system-related. Patient barriers have been the most extensively examined. Less attention has been paid to provider and system-level impediments (10). Mammography rates also are very low among Asian women. Investigators (11) used data from the 2001 California Health Interview Survey to identify breast cancer screening patterns in Asian women. They found two subgroups that were not compliant with screening guidelines: 1) among women who never had a pap exam, 68% had no mammography, and 2) among women who had pap exam, but had no women’s health issues, 62% had no mammogram (11). Language and culturally appropriate outreach to Asian women is needed to increase screening rates. Other researchers (12) found among a sample of Chinese Americans in Washington, D.C., women with a “more Chinese/Eastern cultural view” were significantly less likely to have had regular mammograms, compared to those with a Western cultural view. English language ability was associated with mammogram adherence. More preventive health outreach is needed among immigrant populations.

Lack of Insurance

The slower adoption of screening mammography among lower-income groups may result from a lack of health insurance and a usual source of care (1). Indeed, a "health insurance theory has been advanced to explain social and racial cancer survival gradients," (13, pp.121). A team of Canadian researchers (13), using Ontario and California cancer registries, examined the differential effect of socioeconomic status on the survival of women with breast cancer. They followed stage adjusted cohorts (1998-2000) until 2006, and found SES-breast cancer survival gradients in the U.S., but not in Canada. Canada's more inclusive single payer health care system, which guarantees access to medically necessary care, is the most reasonable explanation for the Canadian advantage in breast cancer survival rates. In a follow-up study (3), Gorey and colleagues (2010) compared extremely poor and affluent neighborhoods in California and Ontario on breast cancer care. They found that "poverty was associated with non-localized disease, surgical and radiation therapy (RT) waits, non-receipt of breast conserving surgery, RT and hormonal therapy, and shorter survival in California, but not Ontario. Extremely poor Ontario women were consistently advantaged on care indices over their California counterparts," (3, pp.157). These findings underscore the need for a more inclusive health care system in the United States.

Later Stage at Diagnosis

Other investigators (4) using National Cancer Institute SEER data from 1995-2004 found that age-adjusted incidence of invasive breast cancer was significantly higher in African American women age <40 than white women. In addition, the investigators (4) found that age-adjusted mortality rates for African American women age < 40 were twice that for white women. In the same study, African American women were significantly more likely to be diagnosed with regional or distant disease, have a lower relative five-year survival rate, and have a higher likelihood of being diagnosed with tumors associated with poorer outcomes. Lastly, African American women were less likely to receive breast cancer surgery (4). Other researchers (14) have shown that African American and Hispanic women are at great risk for regional and distant stage at diagnosis, but the disparity declines with age. Women in high poverty areas are at substantially greater risk for late stage diagnosis. The effects of poverty do not differ by age or across racial/ethnic groups (14).

Other studies also have shown that African American women are more likely to present with tumor characteristics associated with poorer outcomes (1). Tumors that are ER negative, those with poor differentiation, and greater lymph node involvement are more likely in African American women (1). The increased use of tamoxifen from the mid-1980s, which is very effective in treating ER+ tumors, but less so for ER- tumors, may also contribute to slower mortality declines for African American women (1). Another factor affecting breast cancer differences between African American and white women may be attributed to decreased use of postmenopausal hormone replacement therapy, which declined after the results of the Women's Health Initiative Trial in 2002 implicating estrogen as a tumor promoter. "Given that rates of hormone replacement therapy are lower among African American than white women, larger declines in breast cancer incidence among white women would be expected," (1, pp.128).

Disparities in the Receipt of Stage-Appropriate Treatment

Because cancer care requires a series of treatments, the "failure to transition from one step to the next can result in suboptimal care. Women from underserved populations are less likely to receive radiation therapy, chemotherapy and hormonal therapy than white women"(5). Using a national Medicare database, other investigators (15) found that there were substantial racial disparities in the receipt of radiotherapy (RT) after breast-conserving surgery (BCS) for invasive breast cancer among > 65 year old beneficiaries. Whites were found to be significantly more likely to receive RT than African Americans. The northeast and southern U.S. regions had the lowest rates of RT use among African Americans (15).

IM2.5. Citations for data on disparities cited in IM2.4:

1) Harper, S., Lynch, J., et al., (2009) Trends in area-socioeconomic and race-ethnic disparities in breast cancer incidence, stage at diagnosis, screening, mortality, and survival among women ages 50 years and over (1987-2005). Cancer Epidemiology and Biomarkers Preview, 18(1):121-130.
2) Kim, J. & Jang, S.N. (2008) Socioeconomic disparities in breast cancer screening among US women: Trends from 2000-2005. Journal of Preventive Medicine and Public Health, 41(3):186-94.
3) Gorey, K.M., Luginaah, I.N., et al., (2010) Breast cancer care in Canada and the United States: Ecological comparisons of extremely impoverished and affluent neighborhoods. Health Place, 16(1): 156-163.
4) Baquet, C.R., Mishra, S.I., et al., (2008) Breast cancer epidemiology in blacks and whites: disparities in incidence,

mortality, survival rates and histology. Journal of the National Medical Association, 100(5): 480-8.
5) Freedman, R.A., & Winer, E.P. (2008) Reducing disparities in breast cancer care – a daunting but essential responsibility. Journal of the National Cancer Institute, 11(23): 1661-63.
6) Hawley, S.T., Fagerlin, A., et al., (2008) Racial/ethnic disparities in knowledge about risks and benefits of breast cancer treatment: Does it matter where you go? Health Services Research, 43(4): 1366-73.
7) Mobley, L.R., Tzy-Mey, K., et al., (2008) Heterogeneity in mammography use across the nation: Separating evidence of disparities from the disproportionate effects of geography. International Journal of Health Geographics, 7(32):1-18.
8) Battaglia, T.A., Santana, M.C., et al., (2010) Predictors of timely follow-up after abnormal cancer screening among women seeking care at urban community health centers. Cancer, 116(4): 913-921.
9) Press, R., Carrasquillo, O., et al., (2008) Racial/ethnic disparities in time to follow-up after an abnormal mammogram. Journal of Women's Health, 17(6): 923-930.
10) Wujcik, D. & Fair, A.M. (2008) Barriers to diagnostic resolution after abnormal mammography: A review of the literature. Cancer Nursing, 31(5): E16-30.
11) Gomez, S.L., Tan, S., et al., (2007) Disparities in mammographic screening for Asian women in California: A cross-sectional analysis to identify meaningful groups for targeted intervention. BMC Cancer, 7(201): 1-12.
12) Liang, W., Wang, J., et al., (2009) Cultural views, language ability, and mammography use in Chinese American women. Health Education and Behavior, 36(6): 1012-25.
13) Gorey, K.M., Luginaah, I.N., et al., (2009) Breast cancer survival in Ontario and California, 1998-2006: Socioeconomic inequity remains much greater in the United States. Annals of Epidemiology, 19(2): 121-124.
14) Campbell, R.T., Xue, L, et al., (2009) Economic, racial and ethnic disparities in breast cancer in the U.S.: Toward a more comprehensive model. Health Place, 15(3): 855-864.
15) Smith, G.L., Shih, Y.C., et al., (2010) Racial disparities in the use of radiotherapy after breast-conserving surgery: A national Medicare study. Cancer, 116(3): 734-41.

IM3. Measure Intent

IM3.1. Describe intent of the measure and its components/ Rationale (including any citations) for analyzing variation in resource use in this way

1c

The intent of the measure is to be able to identify differential resource use among those women identified with a new diagnosis of breast cancer and identify reasons for these differences. This measure can help to identify differential resource use that can lead to actions intended to reduce the variability in costs.

H☐ M☐ L☐ I☐

IM4. Resource use service categories are consistent with measure construct

1d

Refer to IM3.1. & all S9 items to evaluate this criteria.

H☐ M☐ L☐ I☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for ***Importance to Measure and Report?***

Steering Committee: Was the threshold criterion, ***Importance to Measure and Report*****, met?** **Y☐ N☐**
Rationale:

SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented.

MEASURE SPECIFICATIONS

S1. Measure Web Page:
Do you have a web page where current detailed measure specifications can be obtained?

Eval Rating 2a1/2b1

Yes
http://www.healthqualityalliance.org/hvhc-project/cost-care-measurement-development

S2. General Approach
If applicable, summarize the general approach or methodology to the measure specification. This is most relevant to measures that are part of or rely on the execution of a measure system or applies to multiple measures.

The ABMS REF episode-based resource use measures were created in an open and transparent manner with input from a wide range of clinical experts, methodologists, health care economists and other stakeholders. The measure development process involved a series of deliberate steps where participating clinicians took into account the natural progression of a condition and existing best practices before carefully considering how to best use administrative claims data to construct the episode. They aimed to identify clinically homogenous populations so that the measures would be sensitive to provider decisions and existing practice protocols for like patients. Workgroup members were then asked to conceptualize the measure specifications based on their combined knowledge of guidelines, evidence, and clinical experience. The workgroups helped to define the denominator, duration, clinically relevant services and attribution of each episode as related to the clinical progression and treatment of the condition. Project staff then worked to translate the concepts into detailed written measure specifications and test the measures on a commercial database. The workgroups subsequently re-convened via a series of conference calls to review data analyses, share expert opinions, consider additional evidence-based literature, revise and finalize the measure specifications. Each measure was developed independently and, as such, they are not summative.

Attachment:

S3. Type of resource use measure:

Per episode

S4. Target Population:

S4.1. Subject/Topic Areas:

Cancer

S4.2. Cross Cutting Areas *(HHS or NPP National health goal/priority)*

Care Coordination
Population Health

S5. Data dictionary or code table
Please provide a web page URL or attachment if exceeds 2 pages. NQF strongly prefers URLs. Attach documents only if they are not available on a web page and keep attached file to 5MB or less.

Data Dictionary:

URL:
Please supply the username and password:
Attachment: S5_Data Dictionary-634350259983152765.pdf

Code Table:

URL:
Please supply the username and password:
Attachment:

S6.Data Protocol (Resource Use Measure Module 1)
The measure developer must determine which of the following data protocol steps: data preparation, data inclusion criteria, data exclusion criteria, and missing data, are submitted as measure specifications or as guidelines. Specifications limit user options and flexibility and must be strictly adhered to; whereas guidelines are well thought out guidance to users while allowing for

user flexibility. If the measure developer determines that the requested specification approach is better suited as guidelines, please select and submit guidelines, otherwise specifications must be provided.

Data Protocol Supplemental Attachment or URL:
If needed, attach document that supplements information provided for data protocol for analysis, data inclusion criteria, data exclusion criteria, and missing data (Save file as: S6_Data Protocol). All fields of the submission form that are supplemented within the attachment must include a summary of important information included in the attachment and its intended purpose, including any references to page numbers, tables, text, etc.

URL: http://www.healthqualityalliance.org/hvhc-project/cost-care-measurement-development
Please supply the username and password:
Attachment:

S6.1. Data preparation for analysis
Detail (specify) the data preparation steps and provide rationale for this methodology.

Guidelines : Approach to Data Cleaning:
If a standardized cleaning methodology or logic for the claims data exists, users are encouraged to apply the existing methodology, or conversely, encouraged not to remove data cleaning steps already implemented. If however, organizations impute missing data, we recommend using only non-imputed data.

Rationale: Each organization will be more familiar with the nature of their data therefore any standard cleaning procedures are likely to be appropriate. Imputation can produce unpredictable biases in the results.

S6.2.Data inclusion criteria
Detail initial data inclusion criteria and rationale(related to claim-line or other data quality, data validation, e.g. truncation or removal of low or high dollar claim)

Guidelines : Paid claims with non-missing enrollee identification numbers, primary procedure and diagnosis codes should be included in the measure.
Note: The ABMS REF resource use measures are constructed based on date of service, not date of payment. Therefore, we recommend applying the measures to finalized or "closed" datasets so that complete claims histories during the measurement period are captured in the data.
Including enrollees with at least 24 months of continuous medical and pharmacy benefit enrollment during the identification year and the measurement year is recommended. However, the measure has been tested on enrollees with at least 320 total days of coverage during each year. If precise information regarding persons' total days of coverage is not available, it is recommended that measure implementers estimate this information to the best of their ability using available data elements (e.g., monthly enrollment indicators). This approach is based on the similar eligibility requirements used by NCQA for HEDIS measure denominators.

S6.3. Data exclusion criteria
Detail initial data exclusion criteria and rationale (related to claim-line or other data quality, data validation, e.g. truncation or removal of low or high dollar claim)

Guidelines : Beyond the standard data cleaning steps, we recommend that claim lines with missing or zero quantity values be set to a quantity of one and claim lines missing enrollee identification variables, primary diagnosis and procedure codes, and service date be eliminated. We also recommend eliminating all rejected or unpaid claims. Because a single provider id could have multiple specialties, we also recommend generating a uniform specialty for all providers by assigning each provider the specialty which is most frequently observed from all their Evaluation and Management visits.

Rationale: Converting missing or zero quantities to a minimum value of 1 allows for the pricing of these services. Claim lines missing enrollee identifiers, or primary procedure and diagnosis codes cannot be attributed to an individual, and without procedure and diagnosis codes, services cannot be properly identified and categorized. The resource use measures are intended to track costs to the payer, not general or societal costs, so rejected or unpaid claims should be eliminated.

Standardizing the specialty of all providers eliminates the possibility that providers are classified as one specialty for one enrollee and another specialty for others.

S6.4. Missing Data
Detail steps associated with missing data and rationale(e.g., any statistical techniques used)

Guidelines : Users are encouraged to eliminate claim lines missing enrollee identification variables or primary procedure and diagnosis codes. We do not recommend using any imputation methods to replace missing data.

Rationale: Claim lines missing enrollee identifiers cannot be attributed to an individual, and without procedure and diagnosis codes, services cannot be properly identified and categorized. Imputation of missing information could introduce bias into the measure, so we do not recommend the use of imputed data.

S7. Data Type: Administrative claims
Other

S7.1. Data Source or Collection Instrument
Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc.)

Sources for administrative claims: commercial databases
Standardized price tables: Users can download tables from the NCQA website (see url below) or use the guidelines in the technical appendix of the written measure specification to create their own standardized prices.

S7.2. Data Source or Collection Instrument Reference
(Please provide a web page URL or attachment). NQF strongly prefers URLs. Attach documents only if they are not available on a web page and keep attached file to 5MB or less)

URL: http://www.ncqa.org/tabid/1092/Default.aspx
Please supply the username and password:
Attachment:

S8.Measure Clinical Logic (Resource Use Measure Module 2)
The measure's clinical logic includes the steps that identify the condition or event of interest and any clustering of diagnoses or procedures. For example, the diagnoses and procedures that qualifies for a cardiac heart failure episode, including any disease interaction, comorbid conditions, or hierarchical structure to the clinical logic of the model. (Some of the steps listed separately below may be embedded in the risk adjustment description, if so, please indicate NA and in the rationale space list 'see risk adjustment details.')

Clinical Logic Supplemental Attachment or URL:
If needed, provide a URL or document that supplements information provided for the clinical framework, co-morbid interactions, clinical hierarchies, clinical severity levels, and concurrency of clinical events

URL: http://www.healthqualityalliance.org/hvhc-project/cost-care-measurement-development
Please supply the username and password:
Attachment:

S8.1. Brief Description of Clinical Framework

Briefly describe your clinical logic approach including clinical topic area, whether or not you account for comorbid and interactions, clinical hierarchies, clinical severity levels and concurrency of clinical events.

Resource use and costs associated with management of newly diagnosed cases of breast cancer over an 18-month period, three months preceding the diagnosis date and 15 months following the initial diagnosis. Patients are included in the cohort based on identification of new diagnoses of breast cancer using a validated algorithm. Women with a diagnosis code for breast cancer are identified during the measurement year and stratified into high likelihood cases if they have surgical or procedure claims related to breast cancer (mastectomy, lumpectomy, radiation treatment) or have more than two visits with a primary diagnosis of breast cancer. Women are identified as non-high likelihood cases if they do not meet these criteria. These women are included as potential cases if they meet certain criteria related to surgery, multiple claims, other cancers and secondary breast cancer. Patients with a previous diagnosis of breast cancer, metastatic disease and non-melanoma non-skin cancer are excluded. Eligible patients are followed for 15 months following the initial date of their diagnosis during the measurement period and data from the three months preceding the entry date are also captured for identification of breast cancer-related care. Patients are stratified into four mutually exclusive groups: 1) Chemotherapy, with trastuzumab; 2) chemotherapy, no trastuzumab; 3) no chemotherapy; and 4) neoadjuvant chemotherapy. Overall breast cancer-related costs and resource use are calculated for each stratum. Costs of care are calculated at a system level due to the inability to measure important case-mix factors such as stage of disease and estrogen and progesterone receptor status in current administrative datasets.

S8.2. Clinical framework

Detail any clustering and the assignment of codes, including the grouping methodology, the assignment algorithm, and relevant codes and rationale for these methodologies.

The following steps are used to create the clinical framework for the measure.

Identify the measure population

Step 1: Identify patients that meet episode inclusion criteria
Patients will be included in the measure if they meet the Nattinger et al. criteria for an incident case of breast cancer (see Nattinger reference below). The criteria are summarized as follows:
1) Screening step - identify patients with at least one diagnosis code for breast cancer (See also Table BCTx-A in written measure specification): Malignant neoplasm of female breast: ICD9: 174.x.

AND

One breast cancer-related procedure code (Table BCTx-B, Step 1 in written measure specification): Biopsy: ICD9: 85.1x: CPT: 19000, 19001, 19101, 19110, 19112; Lumpectomy: ICD9: 85.20, 85.21: CPT: 19120, 19125, 19126; Partial mastectomy: ICD9: 85.22, 85.23: CPT: 19160, 19162; Lymph node dissection; ICD9: 40.3: CPT: 38740, 38745, 38525; Mastectomy: 85.33 - 85.48: CPT: 19180-19255 (Include these additional codes for pre-2007 data 19140, 19160, 19162, 19180, 19182, 19200, 19220, 19240

2) High likelihood cases - Patients identified in the screening step are evaluated for identification of high likelihood cases. Patients identified as high likelihood cases must meet both A and B in the following criteria during the measurement period:

A) Mastectomy claim (see also Table BCTx-B, Step 2 in written measure specification): Mastectomy: 85.33 - 85.48: CPT: 19180-19255 (Include these additional codes for pre-2007 data 19140, 19160, 19162, 19180, 19182, 19200, 19220, 19240

OR

Lumpectomy or partial mastectomy claim (Table BCTx-B, Step 2): Lumpectomy: ICD9: 85.20, 85.21: CPT: 19120, 19125, 19126; Partial mastectomy: ICD9: 85.22, 85.23: CPT: 19160, 19162; Lymph node dissection; ICD9: 40.3: CPT: 38740, 38745, 38525

AND = 1 claim for radiation therapy (Table BCTx-B, Step 2) ICD9: 92.2x: CPT: 77400-77499, 77520-77525, 77750-77799 ---WITH breast cancer diagnosis ICD9: 174.x

AND

Eval Rating

B) =2 outpatient claims during measurement period with breast cancer as the primary diagnosis ICD9: 174.x.

3) Non-high likelihood cases - All patients identified in the screening step that do not meet the high likelihood case are evaluated as possible breast cancer cases. Four criteria are identified for each patient (Surgery, Single Claim, Other Cancer, Secondary Cancer to Breast). Patients are then defined as a breast cancer case if the combination of these four factors meet one of the following three definitions:

	Surgery	Single Claim	Other Cancer	Secondary Cancer to Breast
1	+	-	-	-
2	+	-	+	-
3	+	-	-	+

The following definitions are used to indicate positive values for the four criteria:

A) Surgery -- =1 lumpectomy, partial mastectomy or mastectomy codes during measurement period (See also Table BCTx-B in written measure specification): Lumpectomy: ICD9: 85.20, 85.21: CPT: 19120, 19125, 19126; Partial mastectomy: ICD9: 85.22, 85.23: CPT: 19160, 19162; Lymph node dissection; ICD9: 40.3: CPT: 38740, 38745, 38525; Mastectomy: 85.33 - 85.48: CPT: 19180-19255 (Include these additional codes for pre-2007 data 19140, 19160, 19162, 19180, 19182, 19200, 19220, 19240

B) Single claim -- Patient with lumpectomy or partial mastectomy claim had only 1 month in which a claim contained primary breast cancer diagnosis ICD9: 174.x or primary breast carcinoma in-situ diagnosis: ICD9: 233.0

C) Other cancer -- = 1 claim with a primary diagnosis for cancer other than breast cancer : ICD9: 140-173.9, 175-195.8, 197-199.1 (not 198.2, 198.81), 200-208.91, 230- 234.9 (not 233.0, 232.5), 235-239.9 (not 238.3, 239.3)

D) Secondary cancer to breast -- = 1 claim of with secondary cancer to breast diagnosis: ICD9: 198.2, 198.81

4) Incident case -- patients identified as either a high likelihood case or that screen positive for breast cancer in step 3 are assessed for prior breast cancer to determine if they are incident cases. Patients are identified as prevalent cases and excluded from the measure if they meet the following criteria during the 12 months (can use as much prior data as available for evaluation of prevalent cases) preceding the measurement period:

A) At least one diagnosis code for breast cancer: ICD9 174.x and one breast cancer-related procedure code (see also Table BCTx-B, Step 1 in written measure specification): Biopsy: CPT: 19000, 19001, 19101, 19110, 19112; Lumpectomy: CPT: 19120, 19125, 19126; Partial mastectomy: CPT: 19160, 19162; Lymph node dissection: CPT: 38740, 38745, 38525; Mastectomy: CPT: 19180-19255 (Include these additional codes for pre-2007 data 19140, 19160, 19162, 19180, 19182, 19200, 19220, 19240

OR

B) Diagnosis of prior history of breast cancer: ICD 9: V10.3

Step 2: Identify patients that meet eligibility and continuous enrollment criteria

1. Eligibility
   a. Identify benefits during both the measurement period (18 months) and the identification year
   b. To be included persons must have both of the following benefits in both years (do not include persons whose pharmacy benefits are dropped partway through the identification or measurement period)
      i. Medical benefit
      ii. Pharmacy benefit

2. Continuous enrollment
   a. Determine enrollment during both the identification and measurement years

Identify (or estimate) total days of coverage in each year. If precise information regarding persons' total days of coverage is not available, it is recommended that measure implementers estimate this information to the best of their ability using available data elements (e.g., monthly enrollment indicators).

2a1

H☐ M☐ L☐ I☐

Eval Rating 2b1

H☐ M☐ L☐ I☐

b. To be eligible, persons must have at least 320 total days of coverage during the year preceding the measurement year and 480 days of total coverage during the 18 month measurement period.

Step 3: Identify patients with exclusion criteria
1. Identify patients that meet one or more exclusion criteria:
a. Males
b. Metastatic disease, defined as a single E&M claim with one of the following diagnosis codes for metastatic disease anywhere on claim (see also Table BCTx-C): secondary and unspecified malignant neoplasm of lymph nodes: ICD9: 196.x; secondary malignant neoplasm of respiratory and digestive systems: ICD9: 197.x; secondary and malignant neoplasm of other specified sites: ICD9: 198.x

c. Other non-melanoma non-skin cancer diagnosis anywhere in claim (see also Table BCTx-D): malignant neoplasms of lip, oral cavity, and pharynx: ICD9: 140.x – 149.x; malignant neoplasm of digestive organs and peritoneum: ICD9: 150.x – 159.x; malignant neoplasm of respiratory and intrathoracic organs: ICD9: 160.x – 165.x; malignant neoplasm of bone and articular cartilage: ICD9: 170.x; malignant neoplasm of connective and other soft tissue: ICD9: 171.x; Kaposi's sarcoma: ICD9: 176.x; malignant neoplasm of genitourinary organs: ICD9: 179.x – 184.x; 188.x – 189.x; malignant neoplasm of other and unspecified site: ICD9: 190.x – 199.x; malignant neoplasm of lymphatic and hematopoietic tissue: ICD9: 200.x – 208.x

Step 4: Combine prior steps to identify measure population
1. Identify breast cancer treatment eligible population
2. Exclude those patients not meeting general inclusion criteria (e.g., continuous eligibility)
3. Exclude those patients meeting one or more measure exclusion criteria
4. The resulting collection of patients is the measure population

Identify Eligible Events

For each individual in the measure population, identify the following paid claims for services rendered during the measurement period. Claims / encounters will be identified based on the presence of breast cancer-related diagnosis or procedure codes. These events will be used to determine the breast cancer-related resource use.

Inpatient hospitalization events

These ICD-9 codes will be used to identify breast cancer-related services in the inpatient setting during the measurement period, regardless of corresponding CPT or UB revenue codes. DRG codes will be used to identify breast cancer-related inpatient care.

Identify all inpatient hospitalization events with one of the following DRG codes or diagnosis codes appearing in the primary diagnosis field (see also Table BCTx-K of written measure specification): total mastectomy for malignancy with CC: DRG:257; total mastectomy for malignancy w/o CC: DRG: 258; subtotal mastectomy for malignancy with CC: DRG:259; subtotal mastectomy for malignancy w/o CC: DRG: 260; breast proc for non-malignancy except biopsy and local excision:DRG:261; breast biopsy & local excision for non-malignancy: DRG: 262: malignant breast disorders with CC: DRG: 274; malignant breast disorders w/o CC: DRG: 275; malignant neoplasm of female breast: IDC9: 174.x; nonspecific abnormal findings on radiologic and other examination of body structure, breast: ICD9: 793.8; mastodynia (breast pain): ICD9: 611.71; lump or mass in breast: ICD9: 611.72; signs and symptoms in breast, other: ICD9: 611.79; dermatitis; ICD9: 692.9, 691.8.

Outpatient events

Identify all outpatient claims / encounters with a breast cancer-related diagnostic code appearing in any position (see also Table BCTx-E in written measure specification) including the following ICD9 codes: Malignant neoplasm of female breast: ICD9: 174.x; Nonspecific abnormal findings on radiologic and other examination of body structure, breast: ICD9: 793.8; Mastodynia (breast pain): ICD9: 611.71; Lump or mass in breast: ICD9: 611.72; Signs and symptoms in breast, Other: ICD9: 611.79; Dermatitis: ICD9: 692.9, 691.8

AND

the following CPT codes: Office or Other Outpatient Services: CPT: 99201–99215; Hospital Observation Services: CPT: 99217–99220; Hospital Inpatient Services: CPT: 99221–99239; Consultations: CPT: 99241–99255, 99261–99263, 99271–99275; Critical Care and Intensive Care Services: CPT: 99289–99298; Nursing Facility, Domiciliary and Home Services: CPT: 99301–99350; Case Management Services and Care Plan Oversight Services: CPT: 99361–99380; Preventive Medicine Services: CPT: 99385–99390, 99395–99405, 99410–99429; Other E&M Services: CPT: 99450–99456, 99354–99357

Procedures and laboratory

Identify all claims / encounters with the following breast cancer-related CPT, HCPCs, or ICD-9 procedure codes. These codes are considered breast cancer-related regardless of the associated ICD-9 codes (see also Tables BCTx-F- through BCTx-K and BCTxM through BCTx N2 in written measure specification): Surgical pathology – Level IV – Surgical pathology, gross and microscopic examination (Breast, biopsy, not requiring microscopic evaluation of surgical margins; Breast, reduction mammoplasty): CPT: 88305; Surgical pathology – Level V – Surgical pathology, gross and microscopic examination (Breast, excision of lesion, requiring microscopic evaluation of surgical margins; Breast, mastectomy – partial/simple): CPT: 88307; Surgical pathology – Level VI – Surgical pathology, gross and microscopic examination (Breast, mastectomy – with regional lymph nodes): CPT: 88309; Cytopathology, evaluation of fine needle aspirate; interpretation and report: CPT: 88173; Pathology consultation during surgery; first tissue block, with frozen section(s), single specimen: CPT: 88331; Immunohistochemistry (including tissue immunoperoxidase), each antibody: CPT: 88342; Morphometric analysis, tumor immunohistochemistry (eg, Her-2/neu, estrogen receptor/progesterone receptor), quantitative or semiquantitative, each antibody; manual: CPT: 88360; Morphometric analysis, tumor immunohistochemistry (eg, Her-2/neu, estrogen receptor/progesterone receptor), quantitative or semiquantitative, each antibody; using computer-assisted technology: CPT: 8836; Radiologic examination, chest, two views, frontal and lateral: CPT: 71020; Stereotactic localization guidance for breast biopsy or needle placement (eg, for wire localization or for injection), each lesion, radiological supervision and interpretation: CPT: 77031; Mammographic guidance for needle placement, breast (eg, for wire localization or for injection), each lesion, radiological supervision and interpretation: CPT: 77032; Computer-aided detection (computer algorithm analysis of digital image data for lesion detection) with further physician review for interpretation, with or without digitization of film radiographic images; diagnostic mammography (List separately in addition to code for primary procedure): CPT: 77051; Computer-aided detection (computer algorithm analysis of digital image data for lesion detection) with further physician review for interpretation, with or without digitization of film radiographic images; screening mammography (List separately in addition to code for primary procedure): CPT: 77052; Mammary ductogram or galactogram, single duct, radiological supervision and interpretation: CPT: 77053; Mammary ductogram or galactogram, multiple ducts, radiological supervision and interpretation: CPT: 77054; Mammography; unilateral: CPT: 77055; Mammography; bilateral:CPT: 77056; Screening mammography, bilateral (2-view film study of each breast): CPT: 77057; Magnetic resonance imaging, breast, without and/or with contrast material(s); unilateral: CPT: 77058; Magnetic resonance imaging, breast, without and/or with contrast material(s); bilateral: CPT: 77059; Manual application of stress performed by physician for joint radiography, including contralateral joint if indicated: CPT: 77071; Therapeutic radiology treatment planning; simple:CPT: 77261; Therapeutic radiology treatment planning; intermediate:CPT: 77262; Therapeutic radiology treatment planning; complex: CPT: 77263; Therapeutic radiology simulation-aided field setting; simple: CPT: 77280; Therapeutic radiology simulation-aided field setting; intermediate: CPT: 77285; Therapeutic radiology simulation-aided field setting; complex: CPT: 77290; Therapeutic radiology simulation-aided field setting; 3-dimensional: CPT: 77295; Unlisted procedure, therapeutic radiology clinical treatment planning: CPT: 77299; Basic radiation dosimetry calculation, central axis depth dose calculation, TDF, NSD, gap calculation, off axis factor, tissue inhomogeneity factors, calculation of non-ionizing radiation surface and depth dose, as required during course of treatment, only when prescribed by the treating physician: CPT: 77300; Intensity modulated radiotherapy plan, including dose-volume histograms for target and critical structure partial tolerance specifications: CPT: 77301; Teletherapy, isodose plan (whether hand or computer calculated); simple (one or two parallel opposed unmodified ports directed to a single area of interest): CPT: 77305; Teletherapy, isodose plan (whether hand or computer calculated); intermediate (three or more treatment ports directed to a single area of interest):CPT: 77310; Teletherapy, isodose plan (whether hand or computer calculated); complex (mantle or inverted Y, tangential ports, the use of wedges, compensators, complex blocking, rotational beam, or special beam considerations): CPT: 77315; Special teletherapy port plan, particles, hemibody, total body: CPT: 77321; Brachytherapy isodose plan; simple (calculation made from single plane, one to four sources/ribbon application, remote afterloading brachytherapy, 1 to 8 sources): CPT: 77326; Brachytherapy isodose plan; intermediate (multiplane dosage calculations, application involving 5 to 10 sources/ribbons, remote afterloading brachytherapy, 9 to 12 sources): CPT: 77327; Brachytherapy isodose plan; complex (multiplane isodose plan, volume implant calculations, over 10 sources/ribbons used, special spatial reconstruction, remote afterloading brachytherapy, over 12 sources): CPT: 77328; Special dosimetry (eg, TLD, microdosimetry) (specify), only when prescribed by the treating physician: CPT: 77331; Treatment devices, design and

construction; simple (simple block, simple bolus): CPT: 77332; Treatment devices, design and construction; intermediate (multiple blocks, stents, bite blocks, special bolus): CPT: 77333; Treatment devices, design and construction; complex (irregular blocks, special shields, compensators, wedges, molds or casts): CPT: 77334; Continuing medical physics consultation, including assessment of treatment parameters, quality assurance of dose delivery, and review of patient treatment documentation in support of the radiation oncologist, reported per week of therapy: CPT: 77336; Special medical radiation physics consultation: CPT: 77370; Radiation treatment delivery, stereotactic radiosurgery (SRS), complete course of treatment of cranial lesion(s) consisting of 1 session; multi-source Cobalt 60 based: CPT: 77371; Radiation treatment delivery, stereotactic radiosurgery (SRS), complete course of treatment of cranial lesion(s) consisting of 1 session; linear accelerator based: CPT: 77372; Stereotactic body radiation therapy, treatment delivery, per fraction to 1 or more lesions, including image guidance, entire course not to exceed 5 fractions: CPT: 77373; Unlisted procedure, medical radiation physics, dosimetry and treatment devices, and special services: CPT: 77399; Radiation treatment delivery, superficial and/or ortho voltage: CPT: 77401; Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks; up to 5 MeV: CPT: 77402; Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks; 6-10 MeV: CPT: 77403; Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks; 11-19 MeV: CPT: 77404; Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks; 20 MeV or greater: CPT: 77406; Radiation treatment delivery, two separate treatment areas, three or more ports on a single treatment area, use of multiple blocks; up to 5 MeV: CPT: 77407; Radiation treatment delivery, two separate treatment areas, three or more ports on a single treatment area, use of multiple blocks; 6-10 MeV: CPT: 77408; Radiation treatment delivery, two separate treatment areas, three or more ports on a single treatment area, use of multiple blocks; 11-19 MeV: CPT: 77409; Radiation treatment delivery, two separate treatment areas, three or more ports on a single treatment area, use of multiple blocks; 20 MeV or greater: CPT: 77411; Radiation treatment delivery, three or more separate treatment areas, custom blocking, tangential ports, wedges, rotational beam, compensators, electron beam; up to 5 MeV: CPT: 77412; Radiation treatment delivery, three or more separate treatment areas, custom blocking, tangential ports, wedges, rotational beam, compensators, electron beam; 6-10 MeV: CPT: 77413; Radiation treatment delivery, three or more separate treatment areas, custom blocking, tangential ports, wedges, rotational beam, compensators, electron beam; 11-19 MeV: CPT: 77414; Radiation treatment delivery, three or more separate treatment areas, custom blocking, tangential ports, wedges, rotational beam, compensators, electron beam; 20 MeV or greater: CPT: 77416; Therapeutic radiology port film(s): CPT: 77417; Intensity modulated treatment delivery, single or multiple fields/arcs, via narrow spatially and temporally modulated beams, binary, dynamic MLC, per treatment session: CPT: 77418; Stereoscopic X-ray guidance for localization of target volume for the delivery of radiation therapy: CPT: 77421; High energy neutron radiation treatment delivery; single treatment area using a single port or parallel-opposed ports with no blocks or simple blocking: CPT: 77422; High energy neutron radiation treatment delivery; 1 or more isocenter(s) with coplanar or non-coplanar geometry with blocking and/or wedge, and/or compensator(s): CPT: 77423; Radiation treatment management, five treatments: CPT: 77427; Radiation therapy management with complete course of therapy consisting of one or two fractions only: CPT: 77431; Stereotactic radiation treatment management of cranial lesion(s) (complete course of treatment consisting of one session): CPT: 77432; Stereotactic body radiation therapy, treatment management, per treatment course, to one or more lesions, including image guidance, entire course not to exceed 5 fractions: CPT: 77435; Special treatment procedure (eg, total body irradiation, hemibody radiation, per oral, endocavitary or intraoperative cone irradiation: CPT: 77470; Unlisted procedure, therapeutic radiology treatment management: CPT: 77499; Proton treatment delivery; simple, without compensation: CPT: 77520; Proton treatment delivery; simple, with compensation: CPT: 77522; Proton treatment delivery; intermediate: CPT: 77523; Proton treatment delivery; complex: CPT: 77525; Replacement of tissue expander with permanent prosthesis: CPT: 11970; Biopsy of breast; percutaneous, needle core, not using imaging guidance (separate procedure): CPT: 19100; Biopsy of breast; open, incisional: CPT: 19101; Biopsy of breast; percutaneous, needle core, using imaging guidance: CPT: 19102; Biopsy of breast; percutaneous, automated vacuum assisted or rotating biopsy device, using imaging guidance: CPT: 19103; Ablation, cryosurgical, of fibroadenoma, including ultrasound guidance, each fibroadenoma: CPT: 19105; Nipple exploration, with or without excision of a solitary lactiferous duct or a papilloma lactiferous duct: CPT: 19110; Excision of lactiferous duct fistula: CPT: 19112; Excision of cyst, fibroadenoma, or other benign or malignant tumor, aberrant breast tissue, duct lesion, nipple or areolar lesion (except 19300), open, male or female, one or more lesions: CPT: 19120; Excision of breast lesion identified by preoperative placement of radiological marker, open; single lesion: CPT: 19125; Excision of breast lesion identified by preoperative placement of radiological marker, open; each additional lesion separately identified by a preoperative radiological marker (List separately in addition to code for primary procedure): CPT: 19126; Excision of chest wall tumor including ribs: CPT: 19260; Excision of chest wall tumor involving ribs, with plastic reconstruction; without mediastinal lymphadenectomy: CPT: 19271; Excision of chest wall tumor involving ribs, with plastic reconstruction; with mediastinal lymphadenectomy: CPT: 19272; Preoperative placement of needle localization wire, breast: CPT: 19290; Preoperative placement of needle localization wire, breast; each additional lesion (List separately in addition to

code for primary procedure): CPT: 19291; Image guided placement, metallic localization clip, percutaneous, during breast biopsy (List separately in addition to code for primary procedure): CPT: 19295; Placement of radiotherapy afterloading balloon catheter into the breast for interstitial radioelement application following partial mastectomy, includes imaging guidance; on date separate from partial mastectomy: CPT: 19296; Placement of radiotherapy afterloading balloon catheter into the breast for interstitial radioelement application following partial mastectomy, includes imaging guidance; concurrent with partial mastectomy (List separately in addition to code for primary procedure): CPT: 19297; Placement of radiotherapy afterloading brachytherapy catheters (multiple tube and button type) into the breast for interstitial radioelement application following (at the time of or subsequent to) partial mastectomy, includes imaging guidance: CPT: 19298; Mastectomy for gynecomastia: CPT: 19300 (pre-2007;19140); Mastectomy, partial (eg, lumpectomy, tylectomy, quadrantectomy, segmentectomy): CPT: 19301(pre-2007;19160); Mastectomy, partial (eg, lumpectomy, tylectomy, quadrantectomy, segmentectomy); with axillary lymphadenectomy:CPT: 19302 (pre-2007;19162); Mastectomy, simple, complete: CPT: 19303 (pre-2007;19180); Mastectomy, subcutaneous: CPT: 19304 (pre-2007;19182); Mastectomy, radical, including pectoral muscles, axillary lymph nodes: 19305 (pre-2007;19200); Mastectomy, radical, including pectoral muscles, axillary and internal mammary lymph nodes (Urban type operation): CPT:19306 (pre-2007;19220); Mastectomy, modified radical, including axillary lymph nodes, with or without pectoralis minor muscle, but excluding pectoralis major muscle: CPT: 19307 (pre-2007;19240); Mastopexy: CPT: 19316; Reduction mammaplasty: CPT: 19318; Immediate insertion of breast prosthesis following mastopexy, mastectomy or in reconstruction: CPT: 19340; Delayed insertion of breast prosthesis following mastopexy, mastectomy or in reconstruction: CPT: 19342; Nipple/areola reconstruction: CPT: 19350; Correction of inverted nipples: CPT: 19355; Breast reconstruction, immediate or delayed, with tissue expander, including subsequent expansion: CPT: 19357; Breast reconstruction with latissimus dorsi flap, without prosthetic implant: CPT: 19361; Breast reconstruction with free flap: CPT: 19364; Breast reconstruction with other technique: CPT: 19366; Breast reconstruction with transverse rectus abdominis myocutaneous flap (TRAM), single pedicle, including closure of donor site: CPT: 19367; Breast reconstruction with transverse rectus abdominis myocutaneous flap (TRAM), single pedicle, including closure of donor site; with microvascular anastomosis (supercharging): CPT: 19368; Breast reconstruction with transverse rectus abdominis myocutaneous flap (TRAM), double pedicle, including closure of donor site: CPT: 19369; Open periprosthetic capsulotomy, breast: CPT: 19370; Periprosthetic capsulectomy, breast: CPT: 19371; Revision of reconstructed breast: CPT: 19380; Preparation of moulage for custom breast implant: CPT: 19396; Unlisted procedure, breast: CPT: 19499, 36533; Insertion of peripherally inserted central venous access device, with subcutaneous port; age 5 years or older: CPT: 36571; Removal of tunneled central venous access device, with subcutaneous port or pump, central or peripheral insertion: CPT: 36590; Biopsy or excision of lymph node(s); open, deep axillary node(s): CPT: 38525; Axillary lymphadenectomy; superficial: CPT: 38740; Axillary lymphadenectomy; complete: CPT: 38745; Injection procedure; for identification of sentinel node: CPT: 38792; Fluoroscopic guidance for central venous access device placement (deleted 2007): CPT: 75998; Mammography; unilateral (deleted 2007): CPT: 76090; Stereotactic localization guidance for breast biopsy or needle placement (deleted 2007: CPT: 76095; Mammographic guidance for needle placement, breast, each lesion, radiological supervision and interpretation (deleted 2007): CPT: 76096; Radiological examination, surgical specimen: CPT: 76098; Ultrasound, breast(s) (unilateral or bilateral), real time with image documentation: CPT: 76645; Ultrasonic guidance for needle placement (eg, biopsy, aspiration, injection, localization device), imaging supervision and interpretation: CPT: 76942; Ultrasonic guidance, intraoperative (deleted 2007): CPT: 76986; Fluoroscopic guidance for central venous access device placement, replacement (catheter only or complete), or removal (includes fluoroscopic guidance for vascular access and catheter manipulation, any necessary contrast injections through access site or catheter with related venography radiologic supervision and interpretation, and radiographic documentation of final catheter position) (List separately in addition to code for primary procedure): CPT: 77001; Radiopharmaceutical localization of tumor or distribution of radiopharmaceutical agent(s); multiple areas: CPT: 78801; Lymphatics and lymph nodes imaging: CPT: 78195; Anesthesia for procedures on integumentary system on the extremities, anterior trunk and perineum, NOS: CPT: 00400; Anesthesia for procedures on the integumentary system on the extremities, anterior trunk and perineum; reconstructive procedures on breast (eg, reduction or augmentation mammoplasty, muscle flaps): CPT: 00402; Anesthesia for procedures on the integumentary system on the extremities, anterior trunk and perineum; radical or modified radical procedures on breast: CPT: 00404; Anesthesia for procedures on the integumentary system on the extremities, anterior trunk and perineum; radical or modified radical procedures on breast with internal mammary node dissection: CPT: 00406; Code deleted for 2006. To report, see 99143...99145 Sedation with or without analgesia (conscious sedation); intravenous, intramuscular or inhalation: CPT: 99141; Code deleted for 2006. To report, see 99143...99145 Sedation with or without analgesia (conscious sedation); oral, rectal and/or intranasal; CPT: 99142; Moderate sedation services (other than those services described by codes 00100-01999) provided by the same physician performing the diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient´s level of consciousness and physiological status; younger than 5 years of age, first 30 minutes intra-service time: CPT: 99143; Moderate sedation services (other than those services described by codes 00100-01999) provided by the same physician performing the

diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient´s level of consciousness and physiological status; age 5 years or older, first 30 minutes intra-service time; CPT: 99144; Moderate sedation services (other than those services described by codes 00100-01999) provided by the same physician performing the diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient´s level of consciousness and physiological status; each additional 15 minutes intra-service time (List separately in addition to code for primary service): CPT: 99145; Moderate sedation services (other than those services described by codes 00100-01999), provided by a physician other than the health care professional performing the diagnostic or therapeutic service that the sedation supports; younger than 5 years of age, first 30 minutes intra-service time: CPT: 99148; Moderate sedation services (other than those services described by codes 00100-01999), provided by a physician other than the health care professional performing the diagnostic or therapeutic service that the sedation supports; age 5 years or older, first 30 minutes intra-service time: CPT: 99149; Moderate sedation services (other than those services described by codes 00100-01999), provided by a physician other than the health care professional performing the diagnostic or therapeutic service that the sedation supports; each additional 15 minutes intra-service time (List separately in addition to code for primary service): CPT: 99150; total mastectomy for malignancy with CC: DRG:257; total mastectomy for malignancy w/o CC: DRG: 258; subtotal mastectomy for malignancy with CC: DRG:259; subtotal mastectomy for malignancy w/o CC: DRG: 260; breast proc for non-malignancy except biopsy and local excision:DRG:261; breast biopsy & local excision for non-malignancy: DRG: 262: malignant breast disorders with CC: DRG: 274; malignant breast disorders w/o CC: DRG: 275; malignant neoplasm of female breast: IDC9: 174.x; nonspecific abnormal findings on radiologic and other examination of body structure, breast: ICD9: 793.8; mastodynia (breast pain): ICD9: 611.71; lump or mass in breast: ICD9: 611.72; signs and symptoms in breast, other: ICD9: 611.79; dermatitis; ICD9: 692.9, 691.8;

Include the following ICD9 codes PLUS HCPCs: Malignant neoplasm of female breast: ICD9: 174.x; Carcinoma in situ of breast: ICD9: 233.0; Personal history of malignant neoplasm, breast: ICD9: V10.3; AMBULANCE SERVICE, OUTSIDE STATE PER MILE, TRANSPORT (MEDICAID ONLY): HCPC: A0021; NON-EMERGENCY TRANSPORTATION, PER MILE - VEHICLE PROVIDED BY VOLUNTEER (INDIVIDUAL OR ORGANIZATION), WITH NO VESTED INTEREST: HCPC: A0080; NON-EMERGENCY TRANSPORTATION, PER MILE - VEHICLE PROVIDED BY INDIVIDUAL (FAMILY MEMBER, SELF, NEIGHBOR) WITH VESTED INTEREST: HCPC: A0090; NON-EMERGENCY TRANSPORTATION; TAXI: HCPC: A0100; NON-EMERGENCY TRANSPORTATION AND BUS, INTRA OR INTER STATE CARRIER: HCPC: A0110; NON-EMERGENCY TRANSPORTATION: MINI-BUS, MOUNTAIN AREA TRANSPORTS, OR OTHER TRANSPORTATION SYSTEMS: HCPC: A0120; NON-EMERGENCY TRANSPORTATION: WHEEL-CHAIR VAN: HCPC: A0130; NON-EMERGENCY TRANSPORTATION AND AIR TRAVEL (PRIVATE OR COMMERCIAL) INTRA OR INTER STATE: HCPC: A0140; NON-EMERGENCY TRANSPORTATION: PER MILE - CASE WORKER OR SOCIAL WORKER: HCPC: A0160; TRANSPORTATION ANCILLARY: PARKING FEES, TOLLS, OTHER: HCPC: A0170; NON-EMERGENCY TRANSPORTATION: ANCILLARY: LODGING-RECIPIENT: HCPC: A0180; NON-EMERGENCY TRANSPORTATION: ANCILLARY: MEALS-RECIPIENT: HCPC: A0190; NON-EMERGENCY TRANSPORTATION: ANCILLARY: LODGING ESCORT: HCPC: A0200; NON-EMERGENCY TRANSPORTATION: ANCILLARY: MEALS-ESCORT:HCPC: A0210; AMBULANCE SERVICE, NEONATAL TRANSPORT, BASE RATE, EMERGENCY TRANSPORT, ONE WAY: HCPC: A0225; BLS MILEAGE (PER MILE): HCPC: A0380: BLS ROUTINE DISPOSABLE SUPPLIES: HCPC: A0382: BLS SPECIALIZED SERVICE DISPOSABLE SUPPLIES; DEFIBRILLATION (USED BY ALS AMBULANCES AND BLS AMBULANCES IN JURISDICTIONS WHERE DEFIBRILLATION IS PERMITTED IN BLS AMBULANCES): HCPC: A0384; ALS MILEAGE (PER MILE): HCPC: A0390; ALS SPECIALIZED SERVICE DISPOSABLE SUPPLIES; DEFIBRILLATION (TO BE USED ONLY IN JURISDICTIONS WHERE DEFIBRILLATION CANNOT BE PERFORMED IN BLS AMBULANCES): HCPC: A0392; ALS SPECIALIZED SERVICE DISPOSABLE SUPPLIES; IV DRUG THERAPY: HCPC: A0394; ALS SPECIALIZED SERVICE DISPOSABLE SUPPLIES; ESOPHAGEAL INTUBATION: HCPC: A0396; ALS ROUTINE DISPOSABLE SUPPLIES: HCPC: A0398; AMBULANCE WAITING TIME (ALS OR BLS), ONE HALF (1/2) HOUR INCREMENTS: HCPC: A0420; AMBULANCE (ALS OR BLS) OXYGEN AND OXYGEN SUPPLIES, LIFE SUSTAINING SITUATION: HCPC: A0422; EXTRA AMBULANCE ATTENDANT, GROUND (ALS OR BLS) OR AIR (FIXED OR ROTARY WINGED); (REQUIRES MEDICAL REVIEW): HCPC: A0424; GROUND MILEAGE, PER STATUTE MILE: HCPC: A0425; AMBULANCE SERVICE, ADVANCED LIFE SUPPORT, NON-EMERGENCY TRANSPORT, LEVEL 1 (ALS 1): HCPC: A0426; AMBULANCE SERVICE, ADVANCED LIFE SUPPORT, EMERGENCY TRANSPORT, LEVEL 1 (ALS1-EMERGENCY): HCPC: A0427; AMBULANCE SERVICE, BASIC LIFE SUPPORT, NON-EMERGENCY TRANSPORT, (BLS): HCPC: A0428; AMBULANCE SERVICE, BASIC LIFE SUPPORT, EMERGENCY TRANSPORT (BLS-EMERGENCY): HCPC: A0429; AMBULANCE SERVICE, CONVENTIONAL AIR SERVICES,

TRANSPORT, ONE WAY (FIXED WING): HCPC: A0430; AMBULANCE SERVICE, CONVENTIONAL AIR SERVICES, TRANSPORT, ONE WAY (ROTARY WING): HCPC: A0431; PARAMEDIC INTERCEPT (PI), RURAL AREA, TRANSPORT FURNISHED BY A VOLUNTEER AMBULANCE COMPANY WHICH IS PROHIBITED BY STATE LAW FROM BILLING THIRD PARTY PAYERS: HCPC: A0432; ADVANCED LIFE SUPPORT, LEVEL 2 (ALS 2): HCPC: A0433; SPECIALTY CARE TRANSPORT (SCT): HCPC: A0434; FIXED WING AIR MILEAGE, PER STATUTE MILE: HCPC: A0435; ROTARY WING AIR MILEAGE, PER STATUTE MILE: HCPC: A0436; AMBULANCE TRANSPORT PROVIDED BETWEEN THE HOURS OF 7PM AND 7AM: HCPC: A0800; NONCOVERED AMBULANCE MILEAGE, PER MILE (E.G., FOR MILES TRAVELED BEYOND CLOSEST APPROPRIATE FACILITY): HCPC: A0888; AMBULANCE RESPONSE AND TREATMENT, NO TRANSPORT: HCPC: A0998; UNLISTED AMBULANCE SERVICE: HCPC: A0999

These combinations of diagnostic codes, present in any field, and procedure codes will be used to identify related services during the measurement period: Intestinal infections due to other organisms: ICD9: 008.x; Ill-defined intestinal infections: ICD9: 009.x; Streptococcal sore throat and scarlet fever: ICD9: 0.34x; Septicemia: ICD9: 038.x; Bacterial infection in conditions classified elsewhere and of unspecified site: ICD9: 041.x; Iron deficiency anemia: ICD9: 280.x; Anemia of chronic illness: ICD9: 285.2: Anemia, unspecified: ICD9: 285.9; Agranulocytosis: ICD9: 288.0; Major depressive disorder: ICD9: 296.2, 296.3; Pulmonary embolism: ICD9: 415.1x; DVT: ICD9: 453.4x; WIG, ANY TYPE, EACH: HCPC: A9282; Infusion supplies for external drug infusion pump: HCPC: A4222; CHEMOTHERAPY ADMINISTRATION, INTRAVENOUS; PUSH TECHNIQUE: HCPC: C8953; CHEMOTHERAPY ADMINISTRATION, INTRAVENOUS; INFUSION TECHNIQUE, UP TO ONE HOUR: HCPC: C8954l; CHEMOTHERAPY ADMINISTRATION, INTRAVENOUS; INFUSION TECHNIQUE, EACH ADDITIONAL HOUR (LIST SEPARATELY IN ADDITION TO C8954): HCPC: C8955; COMPLETE CBC, AUTOMATED (HGB, HCT, RBC, WBC, WITHOUT PLATELET COUNT) AND AUTOMATED WBC DIFFERENTIAL COUNT: HCPC: G0306; COMPLETE (CBC), AUTOMATED (HGB, HCT, RBC, WBC; WITHOUT PLATELET COUNT): HCPC: G0307; CHEMOTHERAPY ASSESSMENT FOR NAUSEA AND/OR VOMITING, PATIENT REPORTED, PERFORMEDAT THE TIME OF CHEMOTHERAPY ADMINISTRATION; ASSESSMENT LEVEL ONE: NOT AT ALL(FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9021; CHEMOTHERAPY ASSESSMENT FOR NAUSEA AND/OR VOMITING, PATIENT REPORTED, PERFORMEDAT THE TIME OF CHEMOTHERAPY ADMINISTRATION; ASSESSMENT LEVEL TWO: A LITTLE (FORUSE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9022; CHEMOTHERAPY ASSESSMENT FOR NAUSEA AND/OR VOMITING, PATIENT REPORTED, PERFORMEDAT THE TIME OF CHEMOTHERAPY ADMINISTRATION; ASSESSMENT LEVEL THREE: QUITE A BIT(FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9023; CHEMOTHERAPY ASSESSMENT FOR NAUSEA AND/OR VOMITING, PATIENT REPORTED, PERFORMEDAT THE TIME OF CHEMOTHERAPY ADMINISTRATION; ASSESSMENT LEVEL FOUR: VERY MUCH(FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9024; CHEMOTHERAPY ASSESSMENT FOR PAIN, PATIENT REPORTED, PERFORMED AT THE TIME OFCHEMOTHERAPY ADMINISTRATION, ASSESSMENT LEVEL ONE: NOT AT ALL (FOR USE IN AMEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9025; CHEMOTHERAPY ASSESSMENT FOR PAIN, PATIENT REPORTED, PERFORMED AT THE TIME OFCHEMOTHERAPY ADMINISTRATION, ASSESSMENT LEVEL TWO: A LITTLE (FOR USE IN AMEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9026; CHEMOTHERAPY ASSESSMENT FOR PAIN, PATIENT REPORTED, PERFORMED AT THE TIME OFCHEMOTHERAPY ADMINISTRATION, ASSESSMENT LEVEL THREE: QUITE A BIT (FOR USE IN AMEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9027; CHEMOTHERAPY ASSESSMENT FOR PAIN, PATIENT REPORTED, PERFORMED AT THE TIME OFCHEMOTHERAPY ADMINISTRATION, ASSESSMENT LEVEL FOUR: VERY MUCH (FOR USE IN AMEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9028; CHEMOTHERAPY ASSESSMENT FOR LACK OF ENERGY (FATIGUE), PATIENT REPORTED,PERFORMED AT THE TIME OF CHEMOTHERAPY ADMINISTRATION, ASSESSMENT LEVEL ONE: NOTAT ALL (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9029; CHEMOTHERAPY ASSESSMENT FOR LACK OF ENERGY (FATIGUE), PATIENT REPORTED,PERFORMED AT THE TIME OF CHEMOTHERAPY ADMINISTRATION, ASSESSMENT LEVEL TWO: ALITTLE (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9030; CHEMOTHERAPY ASSESSMENT FOR LACK OF ENERGY (FATIGUE), PATIENT REPORTED,PERFORMED AT THE TIME OF CHEMOTHERAPY ADMINISTRATION, ASSESSMENT LEVEL THREE:QUITE A BIT (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9031; CHEMOTHERAPY ASSESSMENT FOR LACK OF ENERGY (FATIGUE), PATIENT REPORTED,PERFORMED AT THE TIME OF CHEMOTHERAPY ADMINISTRATION, ASSESSMENT LEVEL FOUR:VERY MUCH (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT) PERFORMED AT THE TIME OF CHEMOTHERAPY ADMINISTRATION, ASSESSMENT LEVEL FOUR: VERY MUCH (FOR USE IN A MEDICARE-APPROVED

DEMONSTRATION PROJECT): HCPC: G9032; ONCOLOGY; PRIMARY FOCUS OF VISIT; WORK-UP, EVALUATION, OR STAGING AT THE TIMEOF CANCER DIAGNOSIS OR RECURRENCE (FOR USE IN A MEDICARE-APPROVED DEMONSTRATIONPROJECT): HCPC: G9050; ONCOLOGY; PRIMARY FOCUS OF VISIT; TREATMENT DECISION-MAKING AFTER DISEASE ISSTAGED OR RESTAGED, DISCUSSION OF TREATMENT OPTIONS, SUPERVISING/COORDINATINGACTIVE CANCER DIRECTED THERAPY OR MANAGING CONSEQUENCES OF CANCER DIRECTEDTHERAPY (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9051; ONCOLOGY; PRIMARY FOCUS OF VISIT; SURVEILLANCE FOR DISEASE RECURRENCE FORPATIENT WHO HAS COMPLETED DEFINITIVE CANCER-DIRECTED THERAPY AND CURRENTLYLACKS EVIDENCE OF RECURRENT DISEASE; CANCER DIRECTED THERAPY MIGHT BECONSIDERED IN THE FUTURE (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9052; ONCOLOGY; PRIMARY FOCUS OF VISIT; EXPECTANT MANAGEMENT OF PATIENT WITH EVIDENCEOF CANCER FOR WHOM NO CANCER DIRECTED THERAPY IS BEING ADMINISTERED OR ARRANGEDAT PRESENT; CANCER DIRECTED THERAPY MIGHT BE CONSIDERED IN THE FUTURE (FOR USEIN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9053; ONCOLOGY; PRIMARY FOCUS OF VISIT; SUPERVISING, COORDINATING OR MANAGING CARE OFPATIENT WITH TERMINAL CANCER OR FOR WHOM OTHER MEDICAL ILLNESS PREVENTS FURTHERCANCER TREATMENT; INCLUDES SYMPTOM MANAGEMENT, END-OF-LIFE CARE PLANNING,MANAGEMENT OF PALLIATIVE THERAPIES (FOR USE IN A MEDICARE-APPROVEDDEMONSTRATION PROJECT): HCPC: G9054; ONCOLOGY; PRIMARY FOCUS OF VISIT; OTHER, UNSPECIFIED SERVICE NOT OTHERWISELISTED (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9055; ONCOLOGY; PRACTICE GUIDELINES; MANAGEMENT ADHERES TO GUIDELINES (FOR USE IN AMEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9056; ONCOLOGY; PRACTICE GUIDELINES; MANAGEMENT DIFFERS FROM GUIDELINES AS A RESULTOF PATIENT ENROLLMENT IN AN INSTITUTIONAL REVIEW BOARD APPROVED CLINICAL TRIAL(FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9057; ONCOLOGY; PRACTICE GUIDELINES; MANAGEMENT DIFFERS FROM GUIDELINES BECAUSE THETREATING PHYSICIAN DISAGREES WITH GUIDELINE RECOMMENDATIONS (FOR USE IN AMEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9058; ONCOLOGY; PRACTICE GUIDELINES; MANAGEMENT DIFFERS FROM GUIDELINES BECAUSE THEPATIENT, AFTER BEING OFFERED TREATMENT CONSISTENT WITH GUIDELINES, HAS OPTEDFOR ALTERNATIVE TREATMENT OR MANAGEMENT, INCLUDING NO TREATMENT (FOR USE IN AMEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9059; ONCOLOGY; PRACTICE GUIDELINES; MANAGEMENT DIFFERS FROM GUIDELINES FOR REASON(S)ASSOCIATED WITH PATIENT COMORBID ILLNESS OR PERFORMANCE STATUS NOT FACTOREDINTO GUIDELINES (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9060; ONCOLOGY; PRACTICE GUIDELINES; PATIENT´S CONDITION NOT ADDRESSED BY AVAILABLEGUIDELINES (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9061; ONCOLOGY; PRACTICE GUIDELINES; MANAGEMENT DIFFERS FROM GUIDELINES FOR OTHERREASON(S) NOT LISTED (FOR USE IN A MEDICARE-APPROVED DEMONSTRATION PROJECT); HCPC: G9062; ONCOLOGY; DISEASE STATUS; INVASIVE FEMALE BREAST CANCER (DOES NOT INCLUDEDUCTAL CARCINOMA IN SITU); ADENOCARCINOMA AS PREDOMINANT CELL TYPE; STAGE I ORSTAGE IIA-IIB; OR T3, N1, M0; AND ER AND/OR PR POSITIVE; WITH NO EVIDENCE OFDISEASE PROGRESSION, RECURRENCE, OR METASTASES (FOR USE IN A MEDICARE-APPROVEDDEMONSTRATION PROJECT); HCPC: G9071; ONCOLOGY; DISEASE STATUS; INVASIVE FEMALE BREAST CANCER (DOES NOT INCLUDEDUCTAL CARCINOMA IN SITU); ADENOCARCINOMA AS PREDOMINANT CELL TYPE; STAGE I, ORSTAGE IIA-IIB; OR T3, N1, M0; AND ER AND PR NEGATIVE; WITH NO EVIDENCE OFDISEASE PROGRESSION, RECURRENCE, OR METASTASES (FOR USE IN A MEDICARE-APPROVEDDEMONSTRATION PROJECT); HCPC: G9072; ONCOLOGY; DISEASE STATUS; INVASIVE FEMALE BREAST CANCER (DOES NOT INCLUDEDUCTAL CARCINOMA IN SITU); ADENOCARCINOMA AS PREDOMINANT CELL TYPE; STAGEIIIA-IIIB; AND NOT T3, N1, M0; AND ER AND/OR PR POSITIVE; WITH NO EVIDENCE OFDISEASE PROGRESSION, RECURRENCE, OR METASTASES (FOR USE IN A MEDICARE-APPROVEDDEMONSTRATION PROJECT): HCPC: G9073; ONCOLOGY; DISEASE STATUS; INVASIVE FEMALE BREAST CANCER (DOES NOT INCLUDEDUCTAL CARCINOMA IN SITU); ADENOCARCINOMA AS PREDOMINANT CELL TYPE; STAGEIIIA-IIIB; AND NOT T3, N1, M0; AND ER AND PR NEGATIVE; WITH NO EVIDENCE OFDISEASE PROGRESSION, RECURRENCE, OR METASTASES (FOR USE IN A MEDICARE-APPROVEDDEMONSTRATION PROJECT): HCPC: G9074; ONCOLOGY; DISEASE STATUS; INVASIVE FEMALE BREAST CANCER (DOES NOT INCLUDEDUCTAL CARCINOMA IN SITU); ADENOCARCINOMA AS PREDOMINANT CELL TYPE; M1 ATDIAGNOSIS, METASTATIC, LOCALLY RECURRENT, OR PROGRESSIVE (FOR USE IN AMEDICARE-APPROVED

DEMONSTRATION PROJECT): HCPC: G9075; ONCOLOGY; DISEASE STATUS; INVASIVE FEMALE BREAST CANCER (DOES NOT INCLUDEDUCTAL CARCINOMA IN SITU); ADENOCARCINOMA AS PREDOMINANT CELL TYPE; EXTENT OFDISEASE UNKNOWN, UNDER EVALUATION, PRE-SURGICAL OR NOT LISTED (FOR USE IN AMEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9076; COMPLETE CBC, AUTOMATED (HGB, HCT, RBC, WBC, WITHOUT PLATELET COUNT) AND AUTOMATED WBC DIFFERENTIAL COUNT: HCPC: G0306; COMPLETE (CBC), AUTOMATED (HGB, HCT, RBC, WBC; WITHOUT PLATELET COUNT): HCPC: G0307; ONCOLOGY; DISEASE STATUS; INVASIVE FEMALE BREAST CANCER (DOES NOT INCLUDEDUCTAL CARCINOMA IN SITU); ADENOCARCINOMA AS PREDOMINANT CELL TYPE; EXTENT OFDISEASE UNKNOWN, STAGING IN PROGRESS, OR NOT LISTED (FOR USE IN AMEDICARE-APPROVED DEMONSTRATION PROJECT): HCPC: G9131; PRESCRIPTION ANTIEMETIC DRUG, ORAL, PER 1 MG, FOR USE IN CONJUNCTION WITH ORALANTI-CANCER DRUG, NOT OTHERWISE SPECIFIED: HCPC: K0415; PRESCRIPTION ANTIEMETIC DRUG, RECTAL, PER 1 MG, FOR USE IN CONJUNCTION WITHORAL ANTI-CANCER DRUG, NOT OTHERWISE SPECIFIED: HCPC: K0416; HALO PROCEDURE, CERVICAL HALO INCORPORATED INTO JACKET VEST: HCPC: L0810; HALO PROCEDURE, CERVICAL HALO INCORPORATED INTO PLASTER BODY JACKET: HCPC: L0820; HALO PROCEDURE, CERVICAL HALO INCORPORATED INTO MILWAUKEE TYPE ORTHOSIS: HCPC: ADDITION TO HALO PROCEDURE, MAGNETIC RESONANCE IMAGE COMPATIBLE SYSTEMS, RINGSAND PINS, ANY MATERIAL: HCPC: L0859; ADDITION TO HALO PROCEDURES, MAGNETIC REASONANCE IMAGE COMPATIBLE SYSTEM: HCPC: L0860; ADDITION TO HALO PROCEDURE, REPLACEMENT LINER/INTERFACE MATERIAL: HCPC: L0861; BREAST PROSTHESIS, MASTECTOMY BRA: HCPC: L8000; BREAST PROSTHESIS, MASTECTOMY BRA, WITH INTEGRATED BREAST PROSTHESIS FORM, UNILATERAL: HCPC: L8001; BREAST PROSTHESIS, MASTECTOMY BRA, WITH INTEGRATED BREAST PROSTHESIS FORM, BILATERAL: HCPC: L8002; BREAST PROSTHESIS, MASTECTOMY SLEEVE: HCPC: L8010; EXTERNAL BREAST PROSTHESIS GARMENT, WITH MASTECTOMY FORM, POST MASTECTOMY: HCPC: L8015; BREAST PROSTHESIS, MASTECTOMY FORM: HCPC: L8020; BREAST PROSTHESIS, SILICONE OR EQUAL: HCPC: L8030; CUSTOM BREAST PROSTHESIS, POST MASTECTOMY, MOLDED TO PATIENT MODEL: HCPC: L8035; BREAST PROSTHESIS, NOT OTHERWISE SPECIFIED: HCPC: L8039; HOSPICE REFERRAL VISIT (ADVISING PATIENT AND FAMILY OF CARE OPTIONS) PERFORMEDBY NURSE, SOCIAL WORKER, OR OTHER DESIGNATED STAFF: HCPC: S0255; COUNSELING AND DISCUSSION REGARDING ADVANCE DIRECTIVES OR END OF LIFE CAREPLANNING AND DECISIONS, WITH PATIENT AND/OR SURROGATE (LIST SEPARATELY INADDITION TO CODE FOR APPROPRIATE EVALUATION AND MANAGEMENT SERVICE): HCPC: S0257; HISTORY AND PHYSICAL (OUTPATIENT OR OFFICE) RELATED TO SURGICAL PROCEDURE (LISTSEPARATELY IN ADDITION TO CODE FOR APPROPRIATE EVALUATION AND MANAGEMENTSERVICE): HCPC: S0260; GENETIC COUNSELING, UNDER PHYSICIAN SUPERVISION, EACH 15 MINUTES: HCPC: S0265; PHYSICIAN MANAGEMENT OF PATIENT HOME CARE, STANDARD MONTHLY CASE RATE (PER 30DAYS): HCPC: S0270; PHYSICIAN MANAGEMENT OF PATIENT HOME CARE, HOSPICE MONTHLY CASE RATE (PER 30DAYS): HCPC: S0271; BREAST RECONSTRUCTION WITH GLUTEAL ARTERY PERFORATOR (GAP) FLAP, INCLUDINGHARVESTING OF THE FLAP, MICROVASCULAR TRANSFER, CLOSURE OF DONOR SITE ANDSHAPING THE FLAP INTO A BREAST, UNILATERAL: HCPC: S2066: BREAST RECONSTRUCTION OF A SINGLE BREAST WITH "STACKED" DEEP INFERIOREPIGASTRIC PERFORATOR (DIEP) FLAP(S) AND/OR GLUTEAL ARTERY PERFORATOR (GAP)FLAP(S), INCLUDING HARVESTING OF THE FLAP(S), MICROVASCULAR TRANSFER, CLOSUREOF DONOR SITE(S) AND SHAPING THE FLAP INTO A BREAST, UNILATERAL: HCPC: S2067; BREAST RECONSTRUCTION WITH DEEP INFERIOR EPIGASTRIC PERFORATOR (DIEP) FLAP ORSUPERFICIAL INFERIOR EPIGASTRIC ARTERY (SIEA) FLAP, INCLUDING HARVESTING OF THEFLAP, MICROVASCULAR TRANSFER, CLOSURE OF DONOR SITE AND SHAPING THE FLAP INTO ABREAST, UNILATERAL: HCPC: S2068; COMPLETE GENE SEQUENCE ANALYSIS; BRCA1 GENE: HCPC: S3818; COMPLETE GENE SEQUENCE ANALYSIS; BRCA2 GENE:HCPC: S3819; COMPLETE BRCA1 AND BRCA2 GENE SEQUENCE ANALYSIS FOR SUSCEPTIBILITY TO BREAST AND OVARIAN CANCER: HCPC: S3820; SINGLE MUTATION ANALYSIS (IN INDIVIDUAL WITH A KNOWN BRCA1 OR BRCA2 MUTATION IN THE FAMILY) FOR SUSCEPTIBILITY TO BREAST AND OVARIAN CANCER: HCPC: S3822; THREE-MUTATION BRCA1 AND BRCA2 ANALYSIS FOR SUSCEPTIBILITY TO BREAST AND OVARIAN CANCER IN ASHKENAZI INDIVIDUALS: HCPC: S3823; COMPUTER ANALYSIS OF FULL-FIELD DIGITAL MAMMOGRAM AND FURTHER PHYSICIAN REVIEW FOR INTERPRETATION, MAMMOGRAPHY (LIST SEPARATELY IN ADDITION TO CODE FOR PRIMARY PROCEDURE): HCPC: S8075; SCINTIMAMMOGRAPHY (RADIOIMMUNOSCINTIGRAPHY OF THE BREAST), UNILATERAL, INCLUDING SUPPLY OF RADIOPHARMACEUTICAL: HCPC: S8080; HOME HEALTH AIDE OR CERTIFIED NURSE ASSISTANT, PROVIDING CARE IN THE HOME; PER HOUR: HCPC: S9122; NURSING CARE, IN THE HOME;

BY REGISTERED NURSE, PER HOUR (USE FOR GENERAL NURSING CARE ONLY, NOT TO BE USED WHEN CPT CODES 99500-99602 CAN BE USED): HCPC: S9123; NURSING CARE, IN THE HOME; BY LICENSED PRACTICAL NURSE, PER HOUR: HCPC: S9124; RESPITE CARE, IN THE HOME, PER DIEM: HCPC: S9125; HOSPICE CARE, IN THE HOME, PER DIEM: HCPC: S9126; SOCIAL WORK VISIT, IN THE HOME, PER DIEM: HCPC: S9127

Chemotherapy and Prescription drugs

Identify breast cancer-related chemotherapy codes and medications during the measurement period (See also Table BCTx-L in written measure specification). These codes will be used to identify Breast Cancer-related services during the measurement period, regardless of corresponding ICD-9 codes: Chemotherapy administration, subcutaneous or intramuscular; non-hormonal anti-neoplastic: CPT: 96401; Chemotherapy administration, subcutaneous or intramuscular; hormonal anti-neoplastic: CPT: 96402; Chemotherapy administration; intralesional, up to and including 7 lesions: CPT: 96405; Chemotherapy administration; intralesional, more than 7 lesions; CPT: 96406; Chemotherapy administration; intravenous, push technique, single or initial substance/drug: CPT: 96409; Chemotherapy administration; intravenous, push technique, each additional substance/drug (List separately in addition to code for primary procedure): CPT: 96411; Chemotherapy administration, intravenous infusion technique; up to 1 hour, single or initial substance/drug: CPT: 96413; Chemotherapy administration, intravenous infusion technique; each additional hour (List separately in addition to code for primary procedure): CPT: 96415; Chemotherapy administration, intravenous infusion technique; initiation of prolonged chemotherapy infusion (more than 8 hours), requiring use of a portable or implantable pump: CPT: 96416; Chemotherapy administration, intravenous infusion technique; each additional sequential infusion (different substance/drug), up to 1 hour (List separately in addition to code for primary procedure): CPT: 96417; Chemotherapy administration, intra-arterial; push technique: CPT: 96420; Chemotherapy administration, intra-arterial; infusion technique, up to one hour: CPT: 96422; Chemotherapy administration, intra-arterial; infusion technique, each additional hour (List separately in addition to code for primary procedure): CPT: 96423; Chemotherapy administration, intra-arterial; infusion technique, initiation of prolonged infusion (more than 8 hours), requiring the use of a portable or implantable pump: CPT: 96425; Chemotherapy administration into pleural cavity, requiring and including thoracentesis: CPT: 96440; Chemotherapy administration into peritoneal cavity, requiring and including peritoneocentesis: CPT: 96445; Chemotherapy administration, into CNS (eg, intrathecal), requiring and including spinal puncture: CPT: 96450; Refilling and maintenance of portable pump: CPT: 96521; Refilling and maintenance of implantable pump or reservoir for drug delivery, systemic (eg, intravenous, intra-arterial): CPT: 96522; Irrigation of implanted venous access device for drug delivery systems: CPT: 96523; Chemotherapy injection, subarachnoid or intraventricular via subcutaneous reservoir, single or multiple agents: CPT: 96542; Unlisted chemotherapy procedure: CPT: 96549

OR
INJECTION, AMIFOSTINE, 500 MG: HCPC: J0207; INJECTION, AMOBARBITAL, UP TO 125 MG: HCPC: J0300; INJECTION, BUSULFAN, 1 MG: J0594; INJECTION, LEUCOVORIN CALCIUM, PER 50 MG: HCPC: J0640; INJECTION, LEVOLEUCOVORIN CALCIUM, 0.5 MG: HCPC: J0641; INJECTION, PROCHLORPERAZINE, UP TO 10 MG: HCPC: J0780; INJECTION, DECITABINE, 1 MG: HCPC: J0894; INJECTION, BROMPHENIRAMINE MALEATE, PER 10 MG: HCPC: J0945; INJECTION, DIMENHYDRINATE, UP TO 50 MG: HCPC: J1240; INJECTION, DOLASETRON MESYLATE, 10 MG: HCPC: J1260; INJECTION, FILGRASTIM (G-CSF), 300 MCG: HCPC: J1440; INJECTION, FILGRASTIM (G-CSF), 480 MCG: HCPC: J1441; INJECTION, FOSAPREPITANT, 1 MG: HCPC: J1453; INJECTION, GRANISETRON HYDROCHLORIDE, 100 MCG: HCPC: J1626; INJECTION, OPRELVEKIN, 5 MG:HCPC: J2355; INJECTION, ONDANSETRON HYDROCHLORIDE, PER 1 MG: HCPC: J2405; INJECTION, PALIFERMIN, 50 MICROGRAMS: HCPC: J2425; INJECTION, PALONOSETRON HCL, 25 MCG: HCPC: J2469; INJECTION, PEGFILGRASTIM, 6 MG: HCPC: J2505; INJECTION, PROMETHAZINE HCL, UP TO 50 MG: HCPC: J2550; INJECTION, METOCLOPRAMIDE HCL, UP TO 10 MG: HCPC: J2765; INJECTION, RANIBIZUMAB, 0.1 MG: HCPC: J2778; INJECTION, RASBURICASE, 0.5 MG: HCPC: J2783; INJECTION, SARGRAMOSTIM (GM-CSF), 50 MCG: HCPC: J2820; INJECTION, CHLORPROMAZINE HCL, UP TO 50 MG: HCPC: J3230; INJECTION, TRIMETHOBENZAMIDE HCL, UP TO 200 MG: HCPC: J3250; INJECTION, THIETHYLPERAZINE MALEATE, UP TO 10 MG: HCPC: J3280; INJECTION, PERPHENAZINE, UP TO 5 MG: HCPC: J3310; INJECTION, TRIPTORELIN PAMOATE, 3.75 MG: HCPC: J3315; ANTIEMETIC DRUG, RECTAL/SUPPOSITORY, NOT OTHERWISE SPECIFIED: HCPC: J8498; INFUSION, NORMAL SALINE SOLUTION , 1000 CC: HCPC: J7030; INFUSION, NORMAL SALINE SOLUTION, STERILE (500 ML=1 UNIT): HCPC: J7040; 5% DEXTROSE/NORMAL SALINE (500 ML = 1 UNIT): HCPC: J7042; INFUSION, NORMAL SALINE SOLUTION , 250 CC: HCPC: J7050; STERILE SALINE OR WATER, UP TO 5 CC: HCPC: J7051; 5% DEXTROSE/WATER (500 ML = 1 UNIT): HCPC: J7060; INFUSION, D5W, 1000 CC: HCPC: J7070; INFUSION,

DEXTRAN 40, 500 ML: HCPC: J7100; INFUSION, DEXTRAN 75, 500 ML: HCPC: J7110; RINGERS LACTATE INFUSION, UP TO 1000 CC: HCPC: J7120; HYPERTONIC SALINE SOLUTION, 50 OR 100 MEQ, 20 CC VIAL: HCPC: J7130; Chemotherapeutic Agents: APREPITANT, ORAL, 5 MG: HCPC: J8501; BUSULFAN; ORAL, 2 MG: HCPC: J8510; CABERGOLINE, ORAL, 0.25 MG: HCPC: J8515; CAPECITABINE, ORAL, 150 MG: HCPC: J8520; CAPECITABINE, ORAL, 500 MG: HCPC: J8521; CYCLOPHOSPHAMIDE; ORAL, 25 MG: HCPC: J8530; DEXAMETHASONE, ORAL, 0.25 MG: HCPC: J8540; ETOPOSIDE; ORAL, 50 MG: HCPC: J8560; GEFITINIB, ORAL, 250 MG: HCPC: J8565; ANTIEMETIC DRUG, ORAL, NOT OTHERWISE SPECIFIED:HCPC: J8597; MELPHALAN; ORAL, 2 MG: HCPC: J8600; METHOTREXATE; ORAL, 2.5 MG: J8610; NABILONE, ORAL, 1 MG: HCPC: J8650; TEMOZOLOMIDE, ORAL, 5 MG: HCPC: J8700; TOPOTECAN, ORAL, 0.25 MG: HCPC: J8705; PRESCRIPTION DRUG, ORAL, CHEMOTHERAPEUTIC, NOS: HCPC: J8999; INJECTION, DOXORUBICIN HYDROCHLORIDE, 10 MG: HCPC: J9000; INJECTION, DOXORUBICIN HYDROCHLORIDE, ALL LIPID FORMULATIONS, 10 MG HCPC: J9001; INJECTION, ALEMTUZUMAB, 10 MG: HCPC: J9010; INJECTION, ALDESLEUKIN, PER SINGLE USE VIAL: HCPC: J9015; INJECTION, ARSENIC TRIOXIDE, 1 MG: HCPC: J9017; INJECTION, ASPARAGINASE, 10,000 UNITS: HCPC: J9020; INJECTION, AZACITIDINE, 1 MG: HCPC: J9025; INJECTION, CLOFARABINE, 1 MG: HCPC: J9027; BCG (INTRAVESICAL) PER INSTILLATION: HCPC: J9031; INJECTION, BENDAMUSTINE HCL, 1 MG: HCPC: J9033; INJECTION, BEVACIZUMAB, 10 MG: HCPC: J9035; INJECTION, BLEOMYCIN SULFATE, 15 UNITS: HCPC: J9040; INJECTION, BORTEZOMIB, 0.1 MG: HCPC: J9041; INJECTION, CARBOPLATIN, 50 MG: HCPC: J9045; INJECTION, CARMUSTINE, 100 MG: HCPC: J9050; INJECTION, CETUXIMAB, 10 MG: HCPC: J9055; CISPLATIN, POWDER OR S0LUTION, PER 10 MG: HCPC: J9060; CISPLATIN, 50 MG: HCPC: J9062; INJECTION, CLADRIBINE, PER 1 MG: HCPC: J9065; CYCLOPHOSPHAMIDE, 100 MG: HCPC: J9070; CYCLOPHOSPHAMIDE, 200 MG: HCPC: J9080; CYCLOPHOSPHAMIDE, 500 MG: HCPC: J9090; CYCLOPHOSPHAMIDE, 1.0 GRAM: HCPC: J9091; CYCLOPHOSPHAMIDE, 2.0 GRAM: HCPC: J9092; CYCLOPHOSPHAMIDE, LYOPHILIZED, 100 MG: HCPC: J9093; CYCLOPHOSPHAMIDE, LYOPHILIZED, 200 MG: HCPC: J9094; CYCLOPHOSPHAMIDE, LYOPHILIZED, 500 MG:HCPC: J9095; CYCLOPHOSPHAMIDE, LYOPHILIZED, 1.0 GRAM: HCPC: J9096; CYCLOPHOSPHAMIDE, LYOPHILIZED, 2.0 GRAM: HCPC: J9097; INJECTION, CYTARABINE LIPOSOME, 10 MG: HCPC: J9098; INJECTION, CYTARABINE, 100 MG: HCPC: J9100; INJECTION, CYTARABINE, 500 MG: HCPC: J9110; INJECTION, DACTINOMYCIN, 0.5 MG: HCPC: J9120; DACARBAZINE, 100 MG: HCPC: J9130; DACARBAZINE, 200 MG: HCPC: J9140; INJECTION, DAUNORUBICIN, 10 MG: HCPC: J9150; INJECTION, DAUNORUBICIN CITRATE, LIPOSOMAL FORMULATION, 10 MG: HCPC: J9151; INJECTION, DENILEUKIN DIFTITOX, 300 MICROGRAMS: HCPC: J9160; INJECTION, DIETHYLSTILBESTROL DIPHOSPHATE, 250 MG: HCPC: J9165; INJECTION, DOCETAXEL, 20 MG: HCPC: J9170; INJECTION, EPIRUBICIN HCL, 2 MG: HCPC: J9178; INJECTION, ETOPOSIDE, 10 MG: HCPC: J918; ETOPOSIDE, 100 MG: HCPC: J9182; INJECTION, FLUDARABINE PHOSPHATE, 50 MG: HCPC: J9185; INJECTION, FLUOROURACIL, 500 MG: HCPC: J9190; INJECTION, FLOXURIDINE, 500 MG: HCPC: J9200; INJECTION, GEMCITABINE HYDROCHLORIDE, 200 MG: HCPC: J9201; GOSERELIN ACETATE IMPLANT, PER 3.6 MG: HCPC: J9202; INJECTION, IRINOTECAN, 20 MG: HCPC: J9206; INJECTION, IXABEPILONE, 1 MG: HCPC: J9207; INJECTION, IFOSFAMIDE, 1 GRAM: HCPC: J9208; INJECTION, MESNA, 200 MG: HCPC: J9209; INJECTION, IDARUBICIN HYDROCHLORIDE, 5 MG: HCPC: J9211; INJECTION, INTERFERON ALFACON-1, RECOMBINANT, 1 MICROGRAM: HCPC: J9212; INJECTION, INTERFERON, ALFA-2A, RECOMBINANT, 3 MILLION UNITS: HCPC: J9213; INJECTION, INTERFERON, ALFA-2B, RECOMBINANT, 1 MILLION UNITS: HCPC: J9214; INJECTION, INTERFERON, ALFA-N3, (HUMAN LEUKOCYTE DERIVED), 250,000 IU: HCPC: J9215; INJECTION, INTERFERON, GAMMA 1-B, 3 MILLION UNITS: HCPC: J9216; LEUPROLIDE ACETATE (FOR DEPOT SUSPENSION), 7.5 MG: HCPC: J9217; LEUPROLIDE ACETATE, PER 1 MG: HCPC: J9218; LEUPROLIDE ACETATE IMPLANT, 65 MG: HCPC: J9219; HISTRELIN IMPLANT (VANTAS), 50 MG: HCPC: J9225; HISTRELIN IMPLANT (SUPPRELIN LA), 50 MG: HCPC: J9226; INJECTION, MECHLORETHAMINE HYDROCHLORIDE, (NITROGEN MUSTARD), 10 MG: HCPC: J9230; INJECTION, MELPHALAN HYDROCHLORIDE, 50 MG: HCPC: J9245; METHOTREXATE SODIUM, 5 MG: HCPC: J9250; METHOTREXATE SODIUM, 50 MG:HCPC: J9260; INJECTION, NELARABINE, 50 MG: HCPC: J9261; INJECTION, OXALIPLATIN, 0.5 MG: HCPC: J9263; INJECTION, PACLITAXEL PROTEIN-BOUND PARTICLES, 1 MG: HCPC: J9264; INJECTION, PACLITAXEL, 30 MG: HCPC: J9265; INJECTION, PEGASPARGASE, PER SINGLE DOSE VIAL: HCPC: J9266; INJECTION, PENTOSTATIN, 10 MG: HCPC: J9268; INJECTION, PLICAMYCIN, 2.5 MG: HCPC: J9270; MITOMYCIN, 5 MG:HCPC: J9280; MITOMYCIN, 20 MG: HCPC: J9290; MITOMYCIN, 40 MG: J9291; INJECTION, MITOXANTRONE HYDROCHLORIDE, PER 5 MG: HCPC: J9293; INJECTION, GEMTUZUMAB OZOGAMICIN, 5 MG: HCPC: J9300; INJECTION, PANITUMUMAB, 10 MG: HCPC: J9303; INJECTION, PEMETREXED, 10 MG: HCPC: J9305; INJECTION, RITUXIMAB, 100 MG: HCPC: J9310; INJECTION, STREPTOZOCIN, 1 GRAM: HCPC: J9320; INJECTION, TEMSIROLIMUS, 1 MG: HCPC: J9330; INJECTION, THIOTEPA, 15 MG:HCPC: J9340; INJECTION, TOPOTECAN, 4 MG: J9350; INJECTION, TRASTUZUMAB, 10 MG:HCPC: J9355; INJECTION, VALRUBICIN,

INTRAVESICAL, 200 MG:HCPC: J9357; INJECTION, VINBLASTINE SULFATE, 1 MG: HCPC: J9360; VINCRISTINE SULFATE, 1 MG:HCPC: J9370; VINCRISTINE SULFATE, 2 MG: HCPC: J9375; VINCRISTINE SULFATE, 5 MG:HCPC: J9380; INJECTION, VINORELBINE TARTRATE, 10 MG; HCPC: J9390; INJECTION, FULVESTRANT, 25 MG:HCPC: J9395; INJECTION, PORFIMER SODIUM, 75 MG: HCPC: J9600; NOT OTHERWISE CLASSIFIED, ANTINEOPLASTIC DRUGS:HCPC: J9999; CHEMOTHERAPY ADMINISTRATION BY OTHER THAN INFUSION TECHNIQUE ONLY (EG SUBCUTANEOUS, INTRAMUSCULAR, PUSH), PER VISIT: HCPC: Q0083; CHEMOTHERAPY ADMINISTRATION BY INFUSION TECHNIQUE ONLY, PER VISIT: HCPC: Q0084; CHEMOTHERAPY ADMINISTRATION BY BOTH INFUSION TECHNIQUE AND OTHER TECHIQUE(S) (EG SUBCUTANEOUS, INTRAMUSCULAR, PUSH), PER VISIT: HCPC: Q0085; Antifungals/Antibiotics: INJECTION, DAPTOMYCIN, 1 MG: HCPC: J0878; INJECTION, DORIPENEM, 10 MG: HCPC: J1267; INJECTION, ERTAPENEM SODIUM, 500 MG: HCPC: J1335; INJECTION, GARAMYCIN, GENTAMICIN, UP TO 80 MG: HCPC: J1580; INJECTION, GATIFLOXACIN, 10MG: HCPC: J1590; INJECTION, KANAMYCIN SULFATE, UP TO 500 MG: HCPC: J1840; INJECTION, KANAMYCIN SULFATE, UP TO 75 MG: HCPC: J1850; INJECTION, CEPHALOTHIN SODIUM, UP TO 1 GRAM: HCPC: J1890; INJECTION, LEVOFLOXACIN, 250 MG: HCPC: J1956; INJECTION, LINCOMYCIN HCL, UP TO 300 MG: HCPC: J2010; INJECTION, LINEZOLID, 200MG: HCPC: J2020; INJECTION, MEROPENEM, 100 MG: HCPC: J2185; INJECTION, MOXIFLOXACIN, 100 MG: HCPC: J2280; INJECTION, OXYTETRACYCLINE HCL, UP TO 50 MG: HCPC: J2460; INJECTION, PENICILLIN G PROCAINE, AQUEOUS, UP TO 600,000 UNITS: HCPC: J2510; INJECTION, PENICILLIN G POTASSIUM, UP TO 600,000 UNITS: HCPC: J2540; INJECTION, PIPERACILLIN SODIUM/TAZOBACTAM SODIUM, 1 GRAM/0.125 GRAMS (1.125): HCPC: J2543; INJECTION, OXACILLIN SODIUM, UP TO 250 MG: HCPC: J2700; INJECTION, QUINUPRISTIN/DALFOPRISTIN, 500 MG (150/350): HCPC: J2770; INJECTION, STREPTOMYCIN, UP TO 1 GM: HCPC: J3000; INJECTION, TIGECYCLINE, 1 MG:HCPC: J3243; INJECTION, TOBRAMYCIN SULFATE, UP TO 80 MG:HCPC: J3260; INJECTION, SPECTINOMYCIN DIHYDROCHLORIDE, UP TO 2 GM: HCPC: J3320; INJECTION, VANCOMYCIN HCL, 500 MG: HPC: J3370; INJECTION FLUCONAZOLE, 200 MG: HCPC: J1450; INJECTION, ITRACONAZOLE, 50 MG: HCPC: J1835; INJECTION, MICAFUNGIN SODIUM, 1 MG: HCPC: J2248; INJECTION, VORICONAZOLE, 10 MG: HCPC: J3465; INJECTION, EPOETIN ALPHA, (FOR NON ESRD USE), PER 1000 UNITS: HCPC: Q0136; INJECTION, DARBEPOETIN ALFA, 1 MCG (NON-ESRD USE): HCPC: Q0137; AZITHROMYCIN DIHYDRATE, ORAL, CAPSULES/POWDER, 1 GRAM: HCPC: Q0144; DIPHENHYDRAMINE HYDROCHLORIDE, 50 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT TIME OF CHEMOTHERAPY TREATMENT NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0163; PROCHLORPERAZINE MALEATE, 5 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0164; PROCHLORPERAZINE MALEATE, 10 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME, OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0165; GRANISETRON HYDROCHLORIDE, 1 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 24 HOUR DOSAGE REGIMEN: HCPC: Q0166; DRONABINOL, 2.5 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0167; DRONABINOL, 5 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0168; PROMETHAZINE HYDROCHLORIDE, 12.5 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0169; PROMETHAZINE HYDROCHLORIDE, 25 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0170; CHLORPROMAZINE HYDROCHLORIDE, 10 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0171; CHLORPROMAZINE HYDROCHLORIDE, 25 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC ANTI-EMETIC,: HCPC: Q0172; TRIMETHOBENZAMIDE HYDROCHLORIDE, 250 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A

COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETICAT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0173; THIETHYLPERAZINE MALEATE, 10 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0174; PERPHENAZINE, 4 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0175: PERPHENAZINE, 8MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0176; HYDROXYZINE PAMOATE, 25 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0177; HYDROXYZINE PAMOATE, 50 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0178; ONDANSETRON HYDROCHLORIDE 8 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0179; DOLASETRON MESYLATE, 100 MG, ORAL, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR AN IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 24 HOUR DOSAGE REGIMEN: HCPC: Q0180; UNSPECIFIED ORAL DOSAGE FORM, FDA APPROVED PRESCRIPTION ANTI-EMETIC, FOR USE AS A COMPLETE THERAPEUTIC SUBSTITUTE FOR A IV ANTI-EMETIC AT THE TIME OF CHEMOTHERAPY TREATMENT, NOT TO EXCEED A 48 HOUR DOSAGE REGIMEN: HCPC: Q0181

Or

Benzodiazepines: alprazolam, bromazepam, chlordiazepoxide, clonazepam, clorazepate, diazepam, lorazepam, medazepam, nordazepam, oxazepam, prazepam (THERCLS = 64); Antineoplastic Agents, NEC: THERCLS = 21; Antiemetics, NEC; THERCLS = 160; Hematopoietic, Agents, NEC: THERCLS = 42; Antidepressants: THERCLS = 69

Rationale:

The intent is to identify patients with a new diagnosis of breast cancer. A previously validated algorithm for the identification of incident breast cancer cases is used to identify women eligible for inclusion in the measure. The identification algorithm uses a combination of diagnostic and procedure codes to identify new cases of breast cancer.

The exclusion criteria for this episode are males, patients with metastatic disease and other non-melanoma, non-skin cancer diagnoses. Males are excluded because breast cancer is predominantly a disease of women. Persons with metastatic disease are excluded because these patients may have systematically different treatment patterns and resource use than women with localized disease. Therefore, the measure focuses on the patients that only have localized disease. Finally, those with other cancer diagnoses are excluded because it would be difficult to distinguish breast cancer care from care for the other cancer. Also this group is likely to have systematically different resource use than a population that does not have another active cancer. These exclusion measures are intended to define a relatively homogeneous population of women with an incident diagnosis of breast cancer.

The diagnostic codes used to identify related resources are either signs or symptoms of potential breast cancer that may have led to the biopsy, diagnostic codes that could have resulted from other screening activities or diagnostic codes that might be indicative of complications associated with cancer or cancer treatment.

Several types of procedure codes are used to identify resource use associated with the episode regardless of the corresponding diagnostic codes. These include pathology codes that are directly related to making the diagnosis of breast cancer, including determining the stage of disease, following a biopsy or other procedure. Similarly, imaging related codes related to mammography or imagining of the chest are included in the measure as these are very specific to the breast cancer episode. Radiation therapy codes are included as patients with these codes that meet our inclusion criteria and do not have other cancers are having these procedures to treat their breast cancer. Similarly, many of the surgical procedures are directly related to the breast cancer diagnosis and include lumpectomy, mastectomy, biopsy and other procedures that would certainly be associated with the condition in patients meeting the inclusion criteria.

The codes for chemotherapy, antiemetics, and other medications commonly used in the treatment of patients with breast cancer are included regardless of the diagnosis code associated with these claims.

Finally, a set of DRGs are also included to identify relevant hospitalizations that may not contain one of the included ICD-9 codes but still are for patients with breast cancer. The DRGs are directly for the treatment of patients with breast cancer.

Reference:

Nattinger AB, Laud PW, Bajorunaite R, Sparapani RA, Freeman JL. An algorithm for the use of Medicare claims data to identify women with incident breast cancer. HSR 2004; 39:1733-1749.

S8.3. Comorbid and interactions
Detail the treatment of co-morbidities & disease interactions and provide rationale for this methodology.

We do not provide specifications for co-morbidies and disease interactions.
This is a population level measure associated with treatment for patients with a new diagnosis of breast cancer. The workgroup felt it was unnecessary to risk adjustment the measure as co-existing conditions would not impact the work-up. Since the findings were going to be applied at the regional level, there would not be important differences in case mix.

S8.4. Clinical hierarchies
Detail the hierarchy for codes or condition groups used and provide rationale for this methodology.

We do not provide specifications for clinical hierarchies.
No clinical hierarchies are used in this measure.

Rationale:

Currently through administrative data we are unable to identify cancer stage at diagnosis, one of the key determinants of what are considered appropriate treatment patterns. We are also unable to measure other important clinical factors such as estrogen and progesterone receptor status in current administrative datasets. We utilize stratification to limit the noise and ensure measurement across more homogeneous patient groups. Additionally, the measure is summarized at the regional level because of the inability to measure important clinical factors.

S8.5. Clinical severity levels
Detail the method used for assigning severity level and provide rationale for this methodology.

We do not provide specifications for clinical severity levels.
Currently through administrative data we are unable to identify cancer stage at diagnosis, one of the key determinants of what are considered appropriate treatment patterns. We are also unable to measure other important clinical factors such as estrogen and progesterone receptor status in current administrative datasets. We utilize stratification to limit the noise and ensure measurement across more homogeneous patient groups. Additionally, the measure is summarized at the regional level because of the inability to measure important clinical factors.

S8.6. Concurrency of clinical events (that may lead to a distinct measure)
Detail the method used for identifying concurrent clinical events, how to manage them, and provide the rationale for this methodology.

We do not provide specifications for concurrency of clinical events.
Each of the measures developed as part of the ABMS measure set was intended as a standalone measure. The measures were not designed to be combined into a single composite measure of resource use for providers. Because the focus during the development of these measures was there eventual pairing with quality measures, each of the measures is considered as a unique measure. Therefore, the concurrency of events and the fact that events may be counted in more than one measure is not an issue. We were not trying to account for the overall resource use of a population but rather focused on resource use within specific cohorts of patients. The relative resource information produced is intended to

result in actionable information which is not possible when all of the episodes are combined into a single composite measure.

S9. Measure Construction Logic (Resource Use Measure Module 3)
The measure's construction logic includes steps used to cluster, group or assign claims beyond those associated with the measure's clinical logic. For example, any temporal or spatial (i.e., setting of care) parameters used to determine if a particular diagnosis or event qualifies for the measure of interest.

Construction Logic Supplemental Attachment or URL:
If needed, attach supplemental documentation (Save file as: S9_Construction Logic). All fields of the submission form that are supplemented within the attachment must include a summary of important information included in the attachment and its intended purpose, including any references to page numbers, tables, text, etc.)

URL: http://www.healthqualityalliance.org/hvhc-project/cost-care-measurement-development
Please supply the username and password:
Attachment:

S9.1. Brief Description of Construction Logic
Briefly describe the measure's construction logic.

The following sequence is used to construct the measures:
1. Eligible population identification
2. Identification of related resources
3. Assignment of standardized prices
4. Creation of episode specific strata (if applicable)

S9.2. Construction Logic
Detail logic steps used to cluster, group or assign claims beyond those associated with the measure's clinical logic.

A 18 month time period is used to define the measurement period. The period of determining resource use should extend for the full 18 month period. The 12 months preceding the measurement period is used as the identification period. Therefore, a full contiguous 30 month period is required for implementation of the measure.

Patients are included in the cohort based meeting the Natinger et al. criteria for identification of incident breast cancer. Eligible patients are followed for 15 months following the date of the diagnosis that makes the eligible for inclusion and data from the three months preceding the entry date are also captured for identification of breast cancer-related care. The entry date is the date of the first qualifying diagnosis in the identification algorithm. The three month period before that date is used to capture the resources consumed leading up to the initial diagnosis of breast cancer. The 15 month time window following the diagnosis is used to capture all of the resources used throughout the typical treatment course for women with breast cancer.

The following steps are used to complete the construction sequence (for specific codes, see Section S8.2 clinical framework of this submission form as well as the written measure specification/technical appendix accessed via URL).

ELIGIBLE POPULATION IDENTIFICATION

The process of identifying patients to be included in the measure is divided into three separate steps, each with multiple sub-steps. The following steps are used for identifying the included population:

Step 1: Identify patients that meet episode inclusion criteria

There are no age restrictions associated with this measure.

Patients will be included in the measure if they meet the Nattinger et al. criteria for an incident case of breast cancer. (1) The criteria are summarized as follows:

1) Screening step - identify patients with at least one diagnosis code for breast cancer (Table BCTx-A) and one breast cancer-related procedure code (Table BCTx-B, Step 1).

2) High likelihood cases - Patients identified in the screening step are evaluated for identification of high likelihood cases. Patients identified as high likelihood cases must meet both A and B in the following criteria during the measurement period:

A) Mastectomy claim (Table BCTx-B, Step 2)

OR

Lumpectomy or partial mastectomy claim (Table BCTx-B, Step 2) AND = 1 claim for radiotherapy (Table BCTx-B, Step 2) with breast cancer diagnosis (Table BCTx-A)

AND

B) =2 outpatient claims during measurement period with breast cancer as the primary diagnosis (Table BCTx-A)

3) Non-high likelihood cases - All patients identified in the screening step that do not meet the high likelihood case are evaluated as possible breast cancer cases. Four criteria are identified for each patient (Surgery, Single Claim, Other Cancer, Secondary Cancer to Breast). Patients are then defined as a breast cancer case if the combination of these four factors meet one of the following three definitions:

	Surgery	Single Claim	Other Cancer	Secondary Cancer to Breast
1	+	-	-	-
2	+	-	+	-
3	+	-	-	+

The following definitions are used to indicate positive values for the four criteria:

A) Surgery -- =1 lumpectomy, partial mastectomy or mastectomy codes during measurement period (Table BCTx-B)

B) Single claim -- Patient with lumpectomy or partial mastectomy claim had only 1 month in which a claim contained primary breast cancer diagnosis (Table BCTx-A) or primary breast carcinoma in-situ diagnosis (Table BCTx-B)

C) Other cancer -- = 1 claim with a primary diagnosis for cancer other than breast cancer (Table BCTx-B)

D) Secondary cancer to breast -- = 1 claim of with secondary cancer to breast diagnosis (Table BCTx-B)

4) Incident case -- patients identified as either a high likelihood case or that screen positive for breast cancer in step 3 are assessed for prior breast cancer to determine if they are incident cases. Patients are identified as prevalent cases and excluded from the measure if they meet the following criteria during the 12 months (can use as much prior data as available for evaluation of prevalent cases) preceding the measurement period:

A) At least one diagnosis code for breast cancer (Table BCTx-A) and one breast cancer-related procedure code (Table BCTx-B, Step 1)

OR

B) Diagnosis of prior history of breast cancer (Table BCTx-B)

Step 2: Identify patients that meet age, eligibility and continuous enrollment criteria

1. Eligibility

a. Identify benefits during both the identification year and the measurement year. To be included persons must have both of the following benefits in both years

i. Medical benefit

ii. Pharmacy benefit

2. Continuous enrollment
a. Determine enrollment during both the identification and measurement years. (To be eligible, persons must have both medical and pharmacy coverage for the measurement period and prior period (do not include persons whose pharmacy benefits are dropped partway through the identification or measurement period).

b. Identify (or estimate) total days of coverage in each year. (If precise information regarding persons' total days of coverage is not available, it is recommended that measure implementers estimate this information to the best of their ability using available data elements (e.g., monthly enrollment indicators).

c. To be eligible, persons must have at least 320 total days of coverage during the year preceding the measurement year and 480 days of total coverage during the 18 month measurement period.

Step 3: Identify patients with exclusion criteria
1. Identify patients that meet one or more exclusion criteria:
a. Males
b. Metastatic disease, defined as a single E&M claim with a diagnosis code for metastatic disease (see Section S8.2 above or Table BCTx-C); and
c. Other non-melanoma non-skin cancer diagnosis (see Section S8.2 above or Table BCTx-D)

Step 4: Combine prior steps to identify measure population
1. Identify breast cancer treatment eligible population
2. Exclude those patients not meeting general inclusion criteria (e.g., continuous eligibility)
3. Exclude those patients meeting one or more measure exclusion criteria
4. The resulting collection of patients is the measure population

ELIGIBLE EVENT IDENTIFICATION

For each individual in the measure population, identify the following paid claims for services rendered during the measurement period. Claims / encounters will be identified based on the presence of breast cancer-related diagnosis or procedure codes. These events will be used to determine the breast cancer-related resource use.

Inpatient hospitalization events

Referring to the codes in Section S8.2 above, identify all inpatient hospitalization events with one of the following diagnosis codes appearing in the primary diagnosis field (see also Table BCTx-K) or DRG codes (see Table BCTx-K).

Outpatient events

Referring to the codes in Section S8.2 above, identify all outpatient claims / encounters with a breast cancer-related diagnostic code appearing in any position (see also Table BCTx-E).

Procedures and laboratory

Referring to the codes in Section S8.2 above, identify all claims / encounters with breast cancer-related CPT, HCPCs, or ICD-9 procedure codes. These codes are considered breast cancer-related regardless of the associated ICD-9 codes (see also Tables BCTx-F- through BCTx-K and BCTxM through BCTx N2).

Chemotherapy and Prescription drugs

Referring to the codes in Section S8.2 above, identify breast cancer-related chemotherapy codes and medications during the measurement period (see also Table BCTx-L).

ASSIGNMENT OF STANDARDIZED PRICES

Standardized prices are calculated for all of the components of care used to treat or manage the patient's condition to

ensure that comparisons can be made solely on the basis of differential practice patterns and resource use. Three separate methodologies are used to derive these standardized prices: for inpatient facility charges, for ambulatory pharmacy charges (i.e., prescriptions dispensed outside the inpatient hospital setting), and for all other charges. These standardized prices are then applied to the claims identified as breast cancer-related. For further details, see section S10.3 below.

CREATION OF EPISODE-SPECIFIC STRATA

Group patients according to the following four strata:
1) Chemotherapy, with trastuzumab;
(J code for chemotherapy or THERCLS = 21 or CPT code for chemotherapy) AND (J9355 or GENNME = "trastuzumab") during measurement period

2) Chemotherapy, no trastuzumab;
(J code for chemotherapy or THERCLS = 21 or CPT code for chemotherapy) AND NO (J9355 or GENNME = "trastuzumab") during measurement period

3) No chemotherapy; and
No J code for chemotherapy or no THERCLS = 21 or no CPT code for chemotherapy

4) Neoadjuvant chemotherapy
Patients receiving chemotherapy (J code for chemotherapy or THERCLS = 21 or CPT code for chemotherapy) prior to surgery (CPTs 19120, 19125, 19126, 19160, 19162, [pre-2007 19140, 19160, 19162, 19180, 19182, 19200, 19220, 19240 OR 2007 forward 19300, 19301, 19302, 19303, 19304, 19305, 19306, 19307] or ICD-9 procedure codes 85.20, 85.21, 85.22, 85.23, 85.33, 85.34, 85.35, 85.36, 85.41, 85.42, 85.43, 85.44, 85.45, 85.46, 85.47, 85.48)

S9.3. Measure Trigger and End mechanisms
Detail the measure's trigger and end mechanisms and provide rationale for this methodology.

Patients are included in the cohort based meeting the Natinger et al. criteria for identification of incident breast cancer. Eligible patients are followed for 15 months following the date of the diagnosis that makes the eligible for inclusion and data from the three months preceding the entry date are also captured for identification of breast cancer-related care. The entry date is the date of the first qualifying diagnosis in the identification algorithm. The three month period before that date is used to capture the resources consumed leading up to the initial diagnosis of breast cancer. The 15 month time window following the diagnosis is used to capture all of the resources used throughout the typical treatment course for women with breast cancer.

Rationale:
This measure observes variation in resource use related to the treatment of breast cancer during the 15 months following diagnosis and the 3 months prior to diagnosis. The 15-month window post-diagnosis is intended to measure the resource use associated with a complete regimen of chemotherapy which often doesn't begin until 3 months after diagnosis, and the preceding 3-month window is intended to capture as much of the variation as possible in resource use associated with the diagnostic process.

S9.4.Measure redundancy or overlap
Detail how redundancy and overlap of measures can be addressed and provide rationale for this methodology.

We do not provide specifications for measure redundancy or overlap.
The measures developed by ABMS REF were developed as standalone measures to address all relevant services associated with a particular health care condition. Collectively, the measures do not sum-up to a single total and there is the potential for overlap and redundancy to occur when multiple measures are applied simultaneously.

S9.5.Complementary services
Detail how complementary services have been linked to the measure and provide rationale for this methodology.

We do not provide specifications for linking complementary services.

All services included in the measure are included based on the presence of diagnosis codes, procedure codes, or medications.
Services are identified based on presence of qualifying codes. There is no effort to link complementary services to the episode. The strategy for all of our measures was to rely on the presence of codes to qualify for inclusion in the episode rather than to make assumptions about temporal or other associations between events.

S9.6.Resource Use Service Categories

Inpatient services: Inpatient facility services
Inpatient services: Evaluation and management
Inpatient services: Procedures and surgeries
Inpatient services: Imaging and diagnostic
Inpatient services: Lab services
Inpatient services: Admissions/discharges
Ambulatory services: Outpatient facility services
Ambulatory services: Emergency Department
Ambulatory services: Pharmacy
Ambulatory services: Evaluation and management
Ambulatory services: Procedures and surgeries
Ambulatory services: Imaging and diagnostic
Ambulatory services: Lab services
Durable Medical Equipment (DME)

S9.7.Identification of Resource Use Service Categories
For each of the resource use service categories selected above, provide the rationale for their selection and detail the method or algorithms to identify resource units, including codes, logic and definitions.

At the claim line level, the user should identify all relevant codes specified in the clinical framework Section 8.2 above (see also written measure specification). For inpatient services, these include all relevant ICD9, DRG v24, DRGv25, CPT codes; for ambulatory services, these in clued all relevant ICD9, and CPT codes; for procedures and laboratory these include all relevant ICD9 procedure codes, HCPCs, and CPT codes, and for prescription drugs, these include relevant HCPCs and NDCs.

The above categories were selected because they represent the vast majority of resource use for the episode and the measure developers examined the distribution of costs between categories to evaluate the face validity of the measure. Developers also reasoned that resource use variation between providers by category would be informative. Please refer to Section S8.2 Clinical Framework for the algorithms used to identify/assign some services.

Measure developers also applied the Berenson-Eggers Types of Service (BETOS) system which categorizes all HCPCS codes into resource use areas (e.g. Evaluation and Management, Procedures, Imaging, etc). In addition to the BETOS category there is an additional category included for medications related resource use that is determined using pharmacy data and HCPCs.

Rationale: The BETOS classification system is a widely used, publically available system for classifying healthcare services. These categories can be used to examine cost patterns across providers to identify differences across the different categories of service. This system provides a sufficient number of categories to make meaningful comparisons across patterns of resource use and yet is not too broad so as not to be able to draw conclusions based on differences. Furthermore, identification of important differences allows users to drill down within those categories to identify cost drivers within BETOS categories that may ultimately provide actionable information for providers.

If needed, provide specifications URL (preferred) or as an attachment:

URL:
Please supply the username and password:

Attachment:

S9.8. Care Setting; *provides information on which care settings the measure encompasses.*

Ambulatory Care : Ambulatory Surgery Center (ASC)
Ambulatory Care : Clinic/Urgent Care
Ambulatory Care : Clinician Office
Hospital/Acute Care Facility
Imaging Facility
Laboratory
Pharmacy

S10.Adjustments for Comparability (Resource Use Measure Module 4)
External factors can mingle and affect or confound a measure's result. Confounding occurs if an extraneous factor causes or influences the outcome (e.g., higher resource use) and is associated with the exposure of interest (e.g., episode of diabetes with multiple co-morbidities). Measure developers often include steps to adjust the measure to increase comparability of results among providers, employers, and health plans.

S10.1. Risk adjustment method
Define risk adjustment variables and describe the conceptual, statistical, or other relevant aspects of the model and provide rationale for this methodology.

This measure is not risk adjusted.
This is a population level measure associated with treatment for patients with a new diagnosis of breast cancer. The workgroup felt it was unnecessary to risk adjustment the measure as co-existing conditions would not impact the work-up. Since the findings were going to be applied at the regional level, there would not be important differences in case mix.

If needed, provide supplemental information via a web URL (preferred) or attachment with the risk adjustment specifications.

URL:
Please supply the username and password:
Attachment:

S10.2. Stratification Method
Detail the stratification method including all variables, codes, logic or definitions required to stratify the measure and rationale for this methodology

Resource use and costs are estimated separately for the following four strata:
1) Chemotherapy, with trastuzumab;
(J code for chemotherapy or THERCLS = 21 or CPT code for chemotherapy) AND (J9355 or GENNME = "trastuzumab") during measurement period

2) Chemotherapy, no trastuzumab;
(J code for chemotherapy or THERCLS = 21 or CPT code for chemotherapy) AND NO (J9355 or GENNME = "trastuzumab") during measurement period

3) No chemotherapy; and
No J code for chemotherapy or no THERCLS = 21 or no CPT code for chemotherapy

4) Neoadjuvant chemotherapy
Patients receiving chemotherapy (J code for chemotherapy or THERCLS = 21 or CPT code for chemotherapy) prior to surgery (CPTs 19120, 19125, 19126, 19160, 19162, [pre-2007 19140, 19160, 19162, 19180, 19182, 19200, 19220, 19240 OR 2007 forward 19300, 19301, 19302, 19303, 19304, 19305, 19306, 19307] or ICD-9 procedure codes 85.20, 85.21, 85.22, 85.23, 85.33, 85.34, 85.35, 85.36, 85.41, 85.42, 85.43, 85.44, 85.45, 85.46, 85.47, 85.48)

Rationale:

Treatment decisions related to breast cancer care can vary widely, at least in part due to variance in patient preference and clinical factors that cannot be measured in administrative data, and the potential range of resource use associated with this decision can be very wide. To limit the noise and ensure measurement across more homogeneous patient groups, this measure is stratified through the identification of patients: A) receiving neo-adjuvant chemotherapy, B) receiving other chemotherapy with trastuzumab, C) receiving other chemotherapy without trastuzumab, or D) not receiving chemotherapy. Because of this stratification, this measure requires no further risk adjustment. The patients in these strata likely have very different cost profiles because of the differences in the procedures being performed or the costs associated with the use of trastuzumab. Persons treated with trastuzumab will have significantly higher costs than chemotherapy patients not treated with trastuzumab. Overall, it was felt each of the strata would represent a different group of patients with different healthcare costs.

S10.3. Costing Method
Detail the costing method including the source of cost information, steps to capture, apply or estimate cost information, and provide rationale for this methodology.

Standardized prices are calculated for all of the components of care used to treat or manage the patient's condition to ensure that comparisons can be made solely on the basis of differential practice patterns and resource use. Three separate methodologies are used to derive these standardized prices: for inpatient facility charges, for ambulatory pharmacy charges (i.e., prescriptions dispensed outside the inpatient hospital setting), and for all other charges. These standardized prices are then applied to the claims identified as related.

Standard Cost Calculation

Step 1 Identify all claims paid for services rendered during the measurement period and with positive non-zero paid amounts for all patients, regardless as to whether they have been included in the measure population (rejected or unadjudicated claims should be dropped). Categorize these claims as follows (in accordance with the BETOS classification process):

- Inpatient Facility (services provided by a facility during an acute inpatient hospital stay, standard price includes room and board and ancillary services)
- Ambulatory Pharmacy (ambulatory prescriptions included in a member's pharmacy benefit)
- All other (E&M, procedures, imaging, tests, DME, other, and exceptions/unclassified)

Step 2 For each category identified, compute standardized prices. Refer to each service category's instructions (i.e., Calculating Standard Units of Service and Total Standard Cost) below.

Step 3 Combine standardized prices with eligible events (e.g., through a file merge as specified in each service category's instructions).

Step 4 For each individual claim, multiply the standardized price by the number of service units identified on the claim to determine the full cost of the service, hospitalization, or prescription.

Calculating Standard Units of Service and Total Standard Cost: Inpatient Facility

For inpatient facility costs, standardized prices are developed at the diagnosis-related group (DRG) level and – for those hospitalizations where DRG-level information is unavailable – at the ADSC level. Each is adjusted for length-of-stay (LOS) so as to more closely mirror the payment systems typically applied among commercial health plans. Both approaches use RRU HEDIS standardized daily price tables developed by NCQA. All inpatient facility costs are considered "acute" for this analysis.

Step 1 Identify all inpatient stays that occurred during the measurement period. Include stays that may have started before the measurement period or ended after the close of the measurement period. Define a single, unique record

describing the member's inpatient stay.

Step 2. Identify the primary discharge DRG. Also identify the DRG version (e.g., CMS-DRG vs. MS-DRG). Care must be taken in using the standardized price tables (specified below) to insure the data and the tables use the same DRG version.

Step 3 Compute the stay's total LOS in days, using paid or expected-to-be-paid days only. Include all paid days in the LOS calculation, whether or not they fall outside the measurement period. Also identify the stay's LOS group based on the stay's LOS and the information below.

LOS (Days)	LOS GRP
1	A
2	B
3-4	C
5-6	D
7-8	E
9-15	F
16 or more	G

Step 4 Compute the LOS per diem multiplier. If the inpatient stay falls completely within the measurement period, use the total number of paid days as the per diem multiplier. If the inpatient stay does not fall completely inside the measurement period, count only the days within the measurement period (including the last day of the period) to compute the per diem multiplier.

Step 5 Download the HEDIS RRU standardized daily price tables from the NCQA website (http://www.ncqa.org/tabid/1092/Default.aspx) for the corresponding measurement periods. Note that there is a one period lag in the file and data periods (i.e. files designated 2007 are based on 2006 data). Some periods may have two sets of tables if there is a significant change in DRG versions. Note: The project staff worked in collaboration with NCQA in development of this methodology for purposes of testing the initial set of measures. Users of the measures may wish to implement their own methodology that does not rely on a price list from NCQA.

Step 6 Calculate the DRG-specific per-diem payment rate by adjusting the standard daily prices for inflation to a reference period using the medical care component of the Consumer Price Index (CPI).

Step 7 Combine DRG-specific per-diem payment rates with the dataset containing eligible inpatient hospital events for the measure. For each event, multiply the per-diem payment rate by the event's LOS per diem multiplier to determine the event's total standard cost.
Total standard costs will not be computed using this approach for stays that have not been assigned a DRG, and for DRGs that are not assigned a standard price by HEDIS. These stays will be assigned a standard price using the ADSC method described below. (Note: Figures presented in this example are arbitrary and do not reflect any particular dataset or patient. Additionally, the DRG XXX is intended to be used as an illustrative example for calculating inpatient costs. Only DRGs related to the episode should be included in this calculation).

Example:

Assume the calculated DRG-specific per-diem payment rate for DRG XXX for FY 2007 is $900.17. An eligible member had an inpatient stay with the following characteristics:
- A principal diagnosis with an eligible ICD-9 code
- A DRG of XXX (DRG associated with an eligible inpatient stay for the episode)
- Date of admission of February 2, 2007 and date of discharge of February 9, 2007 (fiscal period 2007)
- A LOS of 8 days, and therefore a LOS per diem multiplier of 8 days

This event has a calculated total standard cost of $900.17 x 8 = $7,201.36.

Example:

Again assume the calculated DRG-specific per-diem payment rate for DRG XXX for FY 2007 is $900.17. An eligible member had an inpatient stay with the following characteristics:
- A principal diagnosis with an eligible ICD-9 code

- A DRG of XXX (DRG associated with an eligible inpatient stay for the episode)
- Date of admission of December 28, 2006 and date of discharge of January 2, 2007 (fiscal period 2007)
- A LOS of 6 days, and a LOS per diem multiplier of 2 days (January 1-2).

This event has a calculated total standard cost of $900.17 x 2 = $1,800.34.

Step 8 If DRG information is not available for a given inpatient hospitalization a method must be used that assigns prices to those hospitalizations. The methodology used in testing the initial development of the measures was to assign an Aggregate Diagnostic Service Category (ADSC) for the stay using the principal discharge diagnosis. To assign ADSC, download the ADSC Table (Table SPT-INP-ADSC) from the NCQA Web site (http://www.ncqa.org/tabid/1092/Default.aspx) and match the principal ICD-9-CM Diagnosis code from the discharge claim to an ADSC. If the claim does not contain a DRG and the primary ICD-9-CM Diagnosis code is invalid or missing, map the inpatient stay to the ADSC Table's MISA category. An alternative would be to create average prices from the dataset the measures are being implemented for each of the ADSC categories and discharge ICD-9-CM codes and assign those prices to missing hospitalizations.

Step 9 Determine if the member underwent major surgery during the inpatient stay. If this information is not available within the dataset, this may be determined using the list of codes included in a table from the NCQA Web site (Maj-Surg Table). Flag eligible members if one procedure code in the Maj-Surg-Table is present from any provider during the time period defined by the admission and discharge dates.

Step 10 Match each ADSC, LOS per diem multiplier, and major surgery flag assignment for the stay to a value in the Table SPT-INP-ADSC to obtain the assigned standard price. For each event, multiply the per-diem payment rate by the event's LOS per diem multiplier to determine the event's total standard cost. As with the DRG method, the ADSC standard prices must be adjusted for inflation to a reference period using the CPI. Between this ADSC methodology and the previously described DRG-based methodology, each inpatient hospital stay should now have an associated standardized price.

Example:

An eligible member had an inpatient stay with the following characteristics:

- A principal diagnosis for an eligible event assigned to ADSC category Respiratory-C (RESC)
- No available valid DRG information
- Date of admission of February 2, 2007 and date of discharge of February 9, 2007
- A LOS of 8 days, and therefore LOS group E
- A major surgery event during the stay

Using Sample Table SPT-INP-ADSC, we determine this event has a standard per-diem payment rate of $1,474.00. Therefore this event has a calculated total standard cost of $1,474 x 8 = $11,792.

Calculating Standard Units of Service and Total Standard Cost: Ambulatory Pharmacy

For ambulatory pharmacy-related costs, standardized prices are developed at the NDC level, adjusted for days supply.

Step 1 Identify all pharmacy services that occurred during the measurement period. The following pharmacy services should also be included:

- Prescriptions that may have been dispensed before the measurement period and had days supply that extended into the measurement period (e.g., a prescription with a dispensed date of December 15, 2007 and 30 days supply would extend 13 days into the measurement period beginning January 1, 2008)
- Prescriptions that may have been dispensed during the measurement period and had days supply that extended into the following period (e.g., a prescription with a dispensed date of December 20, 2008).

Define a single, unique record describing the pharmacy service.

Step 2 Identify the NDC code and the days supply for each prescription, whether or not some days fall outside the measurement period.
If the days supply is not available for a given pharmacy claim, set the claim's standard cost to be equal to its listed payment amount.

Step 3 Compute the days supply per diem multiplier. If the prescription's days supply fall completely within the measurement period, use the claim's listed days supply as the per diem multiplier. If the prescription's days supply do not fall completely inside the measurement period, count only the days within the measurement period (including the last day of the period) to compute the per diem multiplier.

Step 4 For each NDC, calculate the total NDC-specific payments and the total days supply across all pharmacy claims within that NDC during the measurement period. Using these totals, calculate NDC-specific per-day-supply payment rates by dividing total NDC-specific payments by total days supply for each NDC.

Step 5 Combine NDC-specific per-day-supply payment rates with the dataset containing eligible pharmacy events for the measure. For each event, multiply the per-day-supply payment rate by the event's days supply per diem multiplier to determine the event's total standard cost.

Calculating Standard Units of Service and Total Standard Cost: All Other

For all non-inpatient hospital, non-pharmacy costs, standardized prices are developed at the procedure code and modifier level.

Step 1 Identify all non-inpatient hospital, non-pharmacy services that occurred during the measurement period.

Step 2 Identify the primary procedure code (CPT, HCPCs, ICD-9, etc.) and the first modifier code for each service.

Step 3 For each procedure-modifier combination, calculate the total procedure/modifier-specific payments across all non-inpatient-hospital, non-pharmacy claims with that procedure-modifier combination as well as the frequency of the procedure-modifier combination during the measurement period. Calculate procedure/modifier-specific payment rates by dividing total procedure/modifier-specific payments by the frequency for each procedure-modifier combination.

Example:
Assume that there are 3 non-inpatient-hospital, non-pharmacy claims during the measurement period with the following characteristics:
Patient: 1111, Procedure (CPT-4): 71010, Modifier: Date: 2/1/2007, Payment: $21
Patient: 1111, Procedure (CPT-4): 72240, Modifier: TC, Date: 2/18/2007, Payment: $90
Patient: 2222, Procedure (CPT-4): 71010, Modifier: Date: 1/5/2007, Payment: $25

For the procedure/modifier combination: 71010
The total payment is $21 + $25 = $46
The total frequency is 2
Therefore the procedure/modifier-specific payment rate is $46/2 = $23
For the procedure/modifier combination: 72240/TC
The total payment is $90
The total frequency is 1
Therefore the procedure/modifier-specific payment rate is $90/1 = $90

Step 4 Combine procedure/modifier-specific payment rates with the dataset containing eligible non-inpatient-hospital, non-pharmacy events for the measure so that each procedure-modifier combination is paired with its corresponding payment rate. This payment rate is the event's total standard cost.

Calculation of total individual episode costs

The resource use identified as diabetes-related– and to which standardized prices have been applied (i.e., the collection of eligible events) – is used to calculate individual level episode costs. The following steps are used in the calculation of total individual level costs.

Step 1: For each individual included in the episode, sum all of the total standard costs linked to diabetes-related events occurring during the measurement period at the BETOS service category level. This will provide an estimate of the costs of each category of service over the measurement period.

Step 2: For each individual in the episode, sum ALL total standard costs linked to diabetes-related events to calculate

TOTAL episode costs.

Step 3: Exclude individuals that do not have positive, non-zero costs (e.g. outpatient visit, hospitalization, medication use) during the measurement period.

Rationale for costing method

We used standardized prices to estimate the costs for all components of care in the claims data that a patient received data during the measurement period. Because costs in claims data reflect both the quantity and mix of services delivered as well as the prices paid for those services, some of the cost variation is due to price differences across providers (Thomas et al., 2005). Variations in cost data among organizations and over time can obscure real cost differences (Ritzwoller, et al., 2004) and impede comparisons across providers. To ensure that comparisons are made on the basis of differences in practice patterns and resource use, we developed standardized prices, such that a given service would have the same price across all providers (Thomas et al., 2005). We used separate methods to estimate standardized price that were used to calculate for inpatient facility costs, pharmacy costs, and cost for all other care.
For the inpatient facility use, we developed standardized prices using diagnosis-related group (DRG) information. For hospitalizations without DRG-level information, we used aggregate diagnostic service category (ADSC) level information. In each case, we adjusted for length-of-stay (LOS) during the measurement period so as to more closely mirror the payment systems typically applied among commercial health plans. Both approaches use relative resource use (RRU) HEDIS standardized daily price tables developed by NCQA. We worked in collaboration with NCQA in development of this methodology; however, users of the measure may need to implement their own methodology that does not rely on a price list from NCQA.
For pharmacy use, we determined the days supply for each medication that was dispensed during the measurement period identified by a unique national drug code (NDC). We calculated a standardized price per diem for each NDC in our data by dividing the total payments in the claims data by the total days supply in the claims data for that NDC. We then estimated patient's pharmacy costs by multiplying the standardized price per diem for each NDC by the patient's days supply during the measurement period for that NDC. Standardized prices for pharmacy was estimated using this approach rather than an average whole price (AWP) because the AWP is not defined by law or regulation and does not reflect discounts obtained by most purchasers. As a result, the ultimate price paid by purchasers is often significantly lower than the AWP (Pereira, 2005).
For all other use, we identify the primary procedure code (CPT, HCPCs, ICD-9, etc.) and the first modifier code for each service. We calculated a standardized price for each procedure/modifier by dividing the total procedure/modifier-specific payments by the frequency for each procedure/modifier combination in the claims data. We then applied this standardized price to each patient's procedure/modifier combination that occurred during the measurement period. This approach allowed for a consistent methodology to be applied to each procedure/modifier combination in the claims data to achieve the same price for a service across all providers.

References:
Pereira BJG. Medicare Prescription Drug, Improvement and Modernization Act: Average Wholesale Price (AWP) Medscape Nephrology.2005;2(1)

Ritzwoller DP, Goodman MJ, Maciosek MV, Lafata JE, Meenan R, Hornbrook MC, Fishman PA. Creating Standard Cost Measures Across Integrated Health Care Delivery Systems. J Natl Cancer Inst Monogr 2005;35:80 – 87

Thomas JW, Grazier KL, Ward K. Economic Profiling of Primary Care Physicians: Consistency among Risk-Adjusted Measures. Health Services Research. 2004;39(4):985- 1004

S11. Measure Reporting (Resource Use Measure Module 5)
The measure developer must determine which of the following Measure Reporting functions: attribution approach, peer group, outliers and thresholds, sample size, and benchmarking and comparative estimates, are submitted as measure specifications or as guidelines. Specifications limit user options and flexibility and must be strictly adhered to; whereas guidelines are well thought out guidance to users while allowing for user flexibility. If the measure developer determines that the requested specification approach is better suited as guidelines, please select and submit guidelines, otherwise specifications must be provided.

S11.1. Detail attribution approach
Detail the attribution rule(s) used for attributing costs to providers and rationale for this

methodology (e.g., a proportion of total measure cost or frequency of visits during the measure's measurement period) and provide rationale for this methodology.

Measurement and attribution will take place at the regional level.

Rationale: Through administrative data we are unable to identify cancer stage at diagnosis and other important clinical factors that are key determinants of what are considered appropriate treatment patterns. Also, it cannot be assumed that two individually attributed physicians would have comparable distributions of cancer stage within a given measurement period (such that two physicians could be justifiably compared on the basis of the measure). For this reason, and until additional clinical information is more readily available, this measure's attribution is at the region level (or other geographic division) rather than the individual physician level.

S11.2.Identify and define peer group
Identify the peer group and detail how peer group is identified and provide rationale for this methodology

We do not provide specifications or guidelines for identifying and defining the peer group : Peer groups for this measure are other geographic regions in the United States.

This measure is summarized at the regional level and as such resource use can be compared across regions. Additionally, longitudinal comparisons can be made within regions.

S11.3. Level of Analysis:

Population : National
Population : Regional

S11.4.Detail measure outliers or thresholds
Detail any threshold or outlier rules and decisions based on measure resource use and provide rationale for this methodology

Guidelines : Total observed episode costs are winsorized at the 2nd and 98th percentile, but claim line outliers are not removed and the use of risk adjusted results are intended to correct for any extreme outliers. The only exception is inpatient admissions. Extremely high admissions costs are winsorized at the 99th percentile (i.e. any value higher than the 99th percentile are set to the 99th percentile cost).

Rationale: Winsorizing and risk adjustment limits the influence of outliers. Episodes with extremely high admission costs skews mean costs for the entire episode. Winsorizing admissions at the 99th percentile reduces this effect without eliminating information on the distribution of total episode costs.

S11.5.Detail sample size requirements
Detail the sample size requirement including rules associated with the type of measure

We do not provide specifications or guidelines for sample size requirements : The ABMS REF episode-based resource use measures do not randomly sample enrollees nor do we recommend that implementers construct measures from a random sample. Regarding the issue of sample size determination. It is well known that the nature of resource use measurement at the level of individual providers will often lead to unstable estimations. There have been a number of efforts to derive a single number for which such measures might be stable enough for comparison of providers or individual providers over time. Yet to date there is no commonly accepted minimum. At this time we have not attempted to derive a minimal sample size for measure use.

S11.6.Define benchmarking or comparative estimates
Detail steps to produce benchmarking and comparative estimates and provide rationale for this methodology

Guidelines : The resource use identified as breast cancer-related– and to which standardized prices have been applied (i.e., the collection of eligible events) – is used to calculate individual level episode costs. The following steps are used in the calculation of total individual level costs.

Step 1: For each individual included in the episode, sum all of the total standard costs linked to breast cancer-related events occurring during the measurement period at the BETOS level. This will provide an estimate of the costs of each category of service over the measurement period.

Step 2: For each individual in the episode, sum ALL total standard costs linked to breast cancer-related events to calculate TOTAL episode costs.

Step 3: Identify all individuals included in the episode within a region.

Step 4: Calculate the summary statistics for total episode costs at the regional level (eg. average episode costs, median episode costs)

S12.Type of Score:

Continuous variable

If available, please provide a sample report:

S12.1. Interpretation of Score.
(Classifies interpretation of score (s) according to whether higher or lower resource use amounts is associated with a higher or lower score, a score falling within a defined interval, or a passing score, etc)

The ´score´ calculated for the measure is the average cost of an episode within a region. These can then be compared across regions. This is a continuous variable that can be compared with parametric tests. Higher scores are indicative of higher costs per episode.

The score is simply interpreted as the average episode cost for a breast biopsy within a region. Because the focus of this measure is on resource use and the level of measurement is at the regional level, costs are simply summarized at that level.

S12.2. Detail Score Estimation
Detail steps to estimate measure score.

The resource use identified as breast cancer-related– and to which standardized prices have been applied (i.e., the collection of eligible events) – is used to calculate individual level episode costs. The following steps are used in the calculation of total individual level costs.

Step 1: For each individual included in the episode, sum all of the total standard costs linked to breast cancer-related events occurring during the measurement period at the BETOS level. This will provide an estimate of the costs of each category of service over the measurement period.

Step 2: For each individual in the episode, sum ALL total standard costs linked to breast cancer-related events to calculate TOTAL episode costs.

Step 3: Identify all individuals included in the episode within a region.

Step 4: Calculate the summary statistics for total episode costs at the regional level (eg. average episode costs, median episode costs)

S12.3. Describe discriminating results approach
Detail methods for discriminating differences (reporting with descriptive statistics--e.g., distribution, confidence intervals)

Results are intended to be reporting regionally with appropriate statistics for a continuous variable. Reported results should include measures that describe the distribution of costs. These should include the number of episodes and summary statistics for the costs of the episode which include average, standard deviation, minimum, maximum, median, 5th percentile, 25th percentile, 75th percentile and the 95% percentile.	

TESTING/ANALYSIS	
Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. See guidance on measure testing.	**Eval Rating**
TESTING ATTACHMENT (5MB or less) or URL: *If needed, attach supplemental documentation (Save file as: SA_Reliability_Validity Testing) All fields of the submission form that are supplemented within the attachment must include a summary of important information included in the attachment and its intended purpose, including any references to page numbers, tables, text, etc.* URL: Please supply the username and password: Attachment: SA_Reliability_Validity Testing Breast Cancer.pdf	
SA1. Reliability Testing *For each module tested or for the overall measure score:* **SA1.1. Data/sample** *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)* Thomson Reuter´s Marketscan Dataset was used in the testing of the ABMS REF episode-based resource use measures. The MarketScan Commercial Database provides a rich, comprehensive source of longitudinal administrative claims data, offering the largest convenience sample available in proprietary databases with over 30 million covered lives in each of the three most current years of data. The MarketScan Commercial Claims and Encounters (Commercial) Database is constructed from data contributed from over 100 medium and large size employers and health plans, representing over 130 unique carriers. The MarketScan Databases' large sample size constitutes a nationally representative data sample of the U.S. population under the age of 65 with employer-sponsored health insurance. The stability of MarketScan data sources provides superior continuity of patients over multiple years, generally longer than other claims databases because the majority of the MarketScan data are sourced from large employers. As long as individuals remain with the same employer, they can be tracked across health plans. Features of the MarketScan Research Databases include: • Fully paid and adjudicated claims including inpatient, outpatient, and prescription drug claims • Complete payment/charge information, including amount of patient responsibility • Validated diagnosis, procedure, and other standard codes on claims where applicable (CPT, ICD-9, DRG, NDC, etc) • Demographic information on enrollees including age, gender, and geographic information (three-digit zip codes and MSA) • Plan-type identifiers in the database include major medical, comprehensive, PPO, EPO, HMO, consumer-driven health plan, capitated or part-capitated POS and non capitated POS • Standardized data elements and definitions, ensuring accurate comparisons • Clinical data enhancements, such as Therapeutic Class and Generic Product Identifiers on drug records, and Major Diagnostic Categories and Diagnosis Related Groups on inpatient and outpatient records • Case records linking all of the hospital, physician, and ancillary services provided during an inpatient stay, allowing for comparisons based on such statistics as average length of stay, cost per admission, etc.	**2a2** **H☐** **M☐** **L☐** **I☐**

These data reflect the real world of treatment patterns and costs by tracking millions of patients as they travel through the healthcare system, offering detailed information about all aspects of care. Data from individual patients are integrated from all providers of care, maintaining all healthcare utilization and cost record connections at the patient level.

SA1.2. Analytic Methods
(Describe method of reliability testing and rationale)

The iterative development process that was employed in defining the episode of care resulted in episode measures being examined and modified several different times. As the workgroup would suggest changes to the specifications, modifications would be made in the programming language to reflect these changes. This would allow us to examine the reliability of our implementation of the episode measures as we would not anticipate large changes in the observed costs with only small changes in the logic of the episode measure. For example, if we added a new diagnosis code to our episode that only had a small number of associated claims in our Level 1 analysis we would not expect large changes in the overall cost of the episode. Conversely, if large changes were made in the logic of the episode we would expect similar changes in the overall resource use and cost. In addition, our focus on defining condition specific episodes that are not intended for combining into a single composite measure could result in improved reliability relative combining condition episodes into a single profile for a provider where reliability of physician profiling was wide ranging (Adams et al. NEJM 2010)

Citation: Adams JL, Mehrota A, Thomas JW, McGlynn EA. Physician cost profiling – reliability and risk of misclassification. N Engl J Med 2010;362:1014-1021.

SA1.3.Testing Results
(reliability statistics, assessment of adequacy in the context of norms for the test conducted)

The iterative modification of measure specifications resulted in several runs of the episode programming. Comparisons between results showed expected changes in overall resource use. The addition of a new diagnosis code that was previously included as unrelated but only had a minimal number of claims associated with it did not change the overall results associated with the episode.

SA1.4.Finding statement(s)—*(i.e., is the measure deemed reliable, limitations identified)*

We were able to produce consistent results within the episode.

SA2.Validity Testing
For each module tested or for the overall measure score:

SA2.1. Data/Sample
(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)

See section SA1.1 for description of Thomson Reuters Marketscan dataset.

SA2.2.Analytic Method
(Describe method of validity testing and rationale; if face validity, describe systematic assessment)

2b2

The iterative process of developing the specification with the clinical workgroup represented as assessment of the face validity of the results. Summary findings from the specifications would be presented to the workgroup to determine if results met their expectations or if there were modifications that were necessary. Specifically, the workgroup would assess whether the type of care being included in the measure would make sense in terms of the clinical condition. Moreover, the most frequently and highest cost services that were not related to the episode but were appearing in the data would also be examined. If there were services in this grouping that belonged in the related list modifications would be made. This was facilitated by the Level 1 and Level 2 testing that was done as part of the measure evaluation process.

H☐
M☐
L☐
I☐

Validity testing focused primarily on face validity. Initial testing included:

Level 1 analyses
- Examined impact of inclusion/exclusion criteria on episode denominator
- Examined total episode spending by type of service
- Identified top 20 "condition-related" and "non-condition-related" E&M, procedures, imaging, tests, inpatient admissions (by ICD-9 and DRG) and drugs, by service counts and dollar volume
- Tested proposed attribution logic, examined variability in per-episode resource use at individual provider level (as relevant) and by provider specialty.

Level 2 analyses
- Incorporated risk adjustment
- Produced sample physician-level reports in which observed-to-expected ratios are computed and the distribution of each physician's episodes is compared to the peer group's distribution.
- Examined specific drivers of resource use variation
- Examined variability in per-episode resource use across regions, states and the specialties of attributed providers.

Throughout the process of empirically testing the measures, summary analyses were presented to the workgroups for review and discussion. The workgroups reviewed denominator attrition diagrams to assess how the measure's inclusion and exclusion criteria affected the episode's denominator. They also reviewed summaries of costs by type of service (inpatient hospital care, outpatient care, procedures, imaging, tests, and prescription drugs) and were asked to assess whether the distributions matched the clinical expectations for the condition's treatment. The clinicians were also presented with analyses of diagnosis and procedure level details in order to ensure that appropriate services were being captured and grouped to the episodes. At each step in the process, the measure specifications were revised based on workgroup feedback.
In addition to workgroup feedback results of the preliminary testing were also shared with a Technical Advisory Committee and the QASC Episodes Work Group and the measures revised according to feedback.

SA2.3.Testing Results
(statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)

In the Marketscan data there were 6,796 episodes that qualified for the breast cancer measure. From these episodes, 62.3% were in the chemotherapy with trastuzumab, 6.7% were chemotherapy with trastuzumab, 22.7% were no chemotherapy and 8.3% were neo-adjuvant chemotherapy. The average cost of all the episodes was $52,776. The largest proportion of costs were for chemotherapy with an average episode cost of $18,204. The next largest proportion of costs were for outpatient facility costs which had an average cost of $10,437. These two categories were responsible for more than half of the average episode costs.
When looking at the specific services, within the chemotherapy category trastuzumab accounts for 30% of the overall category costs even though only 6% of patients were treated. This is an indication that these patients have a very different cost profile from patients that were not treated with trastuzumab and justification for reporting these groups separately.
The variability in overall costs showed lower costs in the north central which had costs 6% lower than the average episode costs. Interestingly, chemotherapy costs in the south were 1.25 times the average episode costs for chemotherapy. This may be an indication of differential use of trastuzumab across regions of the United States and again highlight an area for action to reduce differences in treatment costs. Similar differences are seen by state and again highlight the potential value of these analyses in providing information that can begin to identify important differences across regions.

SA2.4. Finding statement(s)—(*i.e., is the measure deemed reliable, limitations identified)*

The analyses conducted indicate that our measure has strong face validity for the measurement of breast cancer-related costs.

SA3.Testing for Measure Exclusions — **2b3**

SA3.1. Describe how the impact of exclusions (if specified) is transparent as required in the criteria

In the attached data summary, we have detailed how the exclusions impacted the resulting size of the cohort (see

attached data summary Slide 4).

SA3.2. Data/sample for analysis of exclusions
(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)

See section SA1.1 for description of Thomson Reuters Marketscan dataset.

SA3.3. Analytic Method
(Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)

We examined the impact of several types of exclusions. In order to ensure that data are available for assessing the episode of care, we excluded individuals without continuous insurance coverage including medical and pharmacy benefits. There were also exclusion criteria that were specified for this condition by the clinical workgroup: males, metastatic disease, and other non-melanoma, non-skin cancer . We examined the impact of these on the resulting cohort size.

SA3.4. Results
(statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses)

The identification period used to examine the breast biopsy measure in the Marketscan data was from July 1, 2006 through September 30, 2007. During this identification period there were 28,582 individuals that met the initial inclusion criteria for the episode. Of these potentially eligible events, 55% were excluded as a result of discontinuous medical coverage over a two year period or lack of prescription medication coverage over this time period. This resulted in a potentially eligible sample of 12,944. Several of these potentially eligible events were excluded due to the following reasons: males (0.2%), metastatic disease (4%), code for history of breast cancer [v10.3] (18%), prior breast cancer diagnosis (38%), other cancer (1%) or no additional evaluation and management visits for breast cancer (7%). This results in a total of 6,796 biopsies in the final cohort that were included in measure testing.

SA3.5. Finding statement(s)-- *(i.e., is the measure deemed reliable, limitations identified)*

Based on the findings from our cohort attrition analysis described above and feedback from the clinical workgroup, the measure is identifying the appropriate group for inclusion. The exclusions due to continuous enrollment are a function of the data that is available and necessary criteria to fully implement the measure.

SA4. Testing Population
Which populations were included in the testing data? (Check all that apply)

Commercial

H☐ M☐ L☐ I☐

SA5. Risk adjustment strategy *Refer to items S10.1 and S10.2 to rate this criterion.*	**2b4** **H☐ M☐ L☐ I☐**
SA6. Data analysis and scoring methods *Refer to items S12-S12.3 to rate this criterion.*	**2b5** **H☐ M☐ L☐ I☐**
SA7. Multiple data sources *Refer to S7 & all SA1 items to evaluate this criterion.*	**2b6** **H☐ M☐**

	L☐ I☐ NA☐
SA6. Stratification of Disparities (if applicable) *Refer to item S10.2 to rate this criterion.*	**2c** H☐ M☐ L☐ I☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	
Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties***, met?** **Rationale:**	Y☐ N☐
USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making.	**Eval Rating**
Meaningful, Understandable, and Useful Information **U1. Current Use:** Public reporting (disclosure to performance results to the public at large) **U1.1. Use in Public Reporting Initiative Use in Public Reporting.** *Disclosure of performance results to the public at large (If used in a public reporting program, provide name of program(s), locations, Web page URL(s). If not publicly reported in a national or community program, state the plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement)* The ABMS REF has only recently completed the development and testing of its Episode-based Resource Use Measures. The Robert Wood Johnson Foundation (RWJF) has provided follow-up funding in the form of technical assistance to Aligning Forces for Quality communities for continued testing of the measures—a 15-month award to Brookings Institute with a subcontract to ABMS REF for continued field testing of select measures in up to four Aligning Forces for Quality (AF4Q) communities toward the goal of public reporting and quality improvement benchmarking. **U1.2. Use in QI** *(If used in improvement programs, provide name of program(s), locations, Web page URL(s)).* See Section U1.1 **U1.3. Use for other Accountability Functions (payment, certification, accreditation)** *(If used in a public accountability program, provide name of program(s), locations, Web page URL(s).* See Section U1.1	**3a** H☐ M☐ L☐ I☐
U2. Testing of Interpretability *(Provide a rationale for why the measure performance results are meaningful, understandable, and useful to the intended audience(s) for both public reporting and quality improvement).* **U2.1. If understanding or usefulness was demonstrated** *(e.g., through systematic feedback from users, focus group, cognitive testing, analysis of quality improvement initiatives) describe the data, methods, and results.*	**3b** H☐ M☐ L☐

The ABMS REF measures have not yet been tested for usefulness or interpretability. They are currently undergoing continued testing in up to four RWJF AF4Q communities.	**NA☐**
U2.2. Resource use data and result can be decomposed for transparency and understanding. *Refer to items S11 -S12.3.*	**3c** **H☐** **M☐** **L☐** **I☐**
U3. If there are similar or related measures (either same measure focus or target population) measures (both the same measure focus and same target population), list the NQF # and title of all related and/or similar measures. **U3.1. If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s): Are the measure specifications completely harmonized?** **U3.2. If the measure specifications are not completely harmonized identify the differences, rationale, and impact on interpretability and data collection burden.** *Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)*	**3d** **H☐** **M☐** **L☐** **I☐** **NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for ***Usability?***	
Steering Committee: Overall, to what extent was the criterion, ***Usability*****, met?** **Rationale:**	**H☐** **M☐** **L☐**
FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement.	Eval Rating
F1. Data Elements Generated as Byproduct of Care Processes *How are the data elements needed to compute measure scores generated? Data used in the measure are:* Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)	**4a** **H☐** **M☐** **L☐** **I☐**
F2. Electronic Sources *Are the data elements needed for the measure as specified available electronically? (Elements that are needed to compute measure scores are in defined, computer-readable fields)* ALL data elements in electronic claims	**4b** **H☐** **M☐**

F2.1. If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.	**L☐ I☐**
F3. Susceptibility to Inaccuracies, Errors, or Unintended Consequences *Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to minimize or prevent. If audited, provide results.* • The majority of measures developed for this project are of 12 months duration or less with identification of the population in one year and measurement in the following. This resulted in eligibility criteria requiring a minimum of 24 months of continuous data (full medical and pharmacy benefit enrollment). Often, clinical workgroup members expressed a desire to extend the duration of a measure to encompass more longitudinal clinical outcomes (e.g. cardiac complications for diabetes) however this was not practical due to the typical enrollment patterns in the commercial population. • Sample size may be of concern for implementers seeking to measure resource use at the level of the individual provider. Many of the measures, when tested on commercial datasets, resulted in small sample sizes that may prohibit meaningful attribution. Discontinuous medical coverage and missing pharmacy coverage were responsible for significant (often greater than 50%) decreases in eligible populations, emphasizing the trade-offs between ensuring adequate sample size and achieving specificity/homogeneity in the measure denominator. If users are unable to achieve adequate sample size at the level of the individual provider, the measures specifications may still provide valuable information at the level of group, system or region. • Administrative claims lack the detail necessary to fully understand appropriateness of resource use in relation to severity of disease (e.g. bundled hospital payments, absence of cancer staging information, absence of cardiac severity indicators, Type 1 v. Type 2 diabetes). Future efforts should consider the integration of administrative claims with other sources of clinical information such as registries and electronic health records. • Resource use is only one component of efficiency measurement. The measures created in this project are not intended to be used in isolation to evaluate physician performance; rather they are intended to complement quality measures as an important component of performance evaluation. • The measures developed in this project represent a small subset of clinical conditions, and do not address the full range of patient and provider experience. Each measure was developed independently and, as such, they are not summative. Efforts to sum multiple measures will result in double counting of services. • The standardized pricing algorithms used for testing the measures were developed for use in the Marketscan dataset. The technical appendices accompanying the measures provide a guide to assist users in developing their own set of standardized prices unique to their datasets. Until a national list of standardized prices is made available to the general public, the methods employed in the testing phase of this project do not allow for national benchmarking.	**4c** **H☐ M☐ L☐ I☐**
F4. Data Collection Strategy *Describe what you have learned/modified as a result of testing regarding barriers to operational use of the measure (e.g., availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, cost of proprietary measures).* Administrative claims lack the detail necessary to fully understand appropriateness of resource use in relation to severity of disease (e.g. bundled hospital payments, absence of cancer staging information, absence of cardiac severity indicators, Type 1 v. Type 2 diabetes). Future efforts should consider the integration of administrative claims with other sources of clinical information such as registries and electronic health records. There were several lessons learned throughout the development and testing of the ABMS REF episode-based resource use measures. First, was the importance of garnering a diverse range of clinical input in a transparent manner to foster face validity and acceptance in the clinical community. Second was the importance of adequate resources for data acquisition, preparation and analyses (time and personnel). Not all datasets are formatted the same which can lead to significant amounts of programmer time for re-formatting code or datasets. It is also important to allow 2-6 months lead time to negotiate data use agreements as use of health care data–even de-identified data--often involves complex contract negotiations.	**4d** **H☐ M☐ L☐ I☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**H☐** **M☐** **L☐**

RECOMMENDATION

Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)

Co.1 Organization

American Board of Medical Specialties Research and Education Foundation, 222 N. LaSalle St., Suite 1500, Chicago, Illinois, 60601

Co.2 Point of Contact

Kevin, Weiss, MD, kweiss@abms.org, 312-436-2600-

Measure Developer If different from Measure Steward

Co.3 Organization

American Board of Medical Specialties Research and Education Foundation, 222 N. LaSalle St., Suite 1500, Chicago, Illinois, 60601

Co.4 Point of Contact

Kevin, Weiss, MD, kweiss@abms.org, 312-436-2600-

Co.5 Submitter If different from Measure Steward POC

Robin, Wagner, rwagner@abms.org, 312-436-2605-, American Board of Medical Specialties research and Education Foundation

Co.6 Additional organizations that sponsored/participated in measure development

Development of the ABMS REF Episode-based Resource Use Measures was supported by the Robert Wood Johnson Foundation under the High Value Healthcare Project: Characterizing Episodes and Costs of Care. Grant number 63609.

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development

Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

Breast Cancer Workgroup Members
E. Dale Collins, MD, American College of Plastic Surgeons
Melissa Craft, RN, American Nurses Association
Scott Endsley, MD, System Design
Scott Kurtzman, MD, Society of surgical Oncology

Geraldine McGinty, MD, American College of Radiology
Michael Neuss, MD, American Society of Clinical Oncology
Erica Swegler, MD, American Academy of Family Physicians
Paul Wallner, DO, American Society for Therapeutic Radiology and Oncology
Carol Wilhoit, MD, Blue Cross Blue Shield of Illinois
Shawna Willey, MD, American Society of Breast Surgeons

Workgroups consisting of a panel of experts were assembled for each condition. In collaboration with the AMA PCPI, a formal call for nominations was issued to the PCPI membership. This process was supplemented with direct outreach to relevant organizations in an effort to achieve representation from a wide range of clinical expertise (medical, nursing, pharmacy, other allied health professionals). Workgroup members were selected based on their clinical knowledge and administrative experience—many also had significant experience in developing quality measures. Where possible, groups also included technical expertise from the health plan perspective.
The measure development process involved a series of deliberate steps where participating clinicians took into account the natural progression of a condition and existing best practices before carefully considering how to best use administrative claims data to construct the episode.

Each clinical workgroup initially convened for a two-day in-person meeting that began with an introduction to the concepts of episodes of care and resource use measurement-- including a review of the NQF framework for evaluating efficiency across episodes of care. The groups were then asked to conceptualize one or more episodes based on the phases of the NQF model. They aimed to identify clinically homogenous populations so that the measures would be sensitive to provider decisions and existing practice protocols for like patients. Workgroup members were then asked to conceptualize the measure specifications based on their combined knowledge of guidelines, evidence, and clinical experience. The workgroups helped to define the denominator, duration, clinically relevant services and attribution of each episode as related to the clinical progression and treatment of the condition.

Throughout the months following the in-person meeting, project staff then worked to translate the concepts into detailed written measure specifications. The workgroups subsequently re-convened via a series of conference calls to review data analyses, share expert opinions, consider additional evidence-based literature, revise and finalize the measure specifications.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released:

2010

Ad.3 Month and Year of most recent revision:

12, 2010

Ad.4 What is your frequency for review/update of this measure?

every 3 years

Ad.5 When is the next scheduled review/update for this measure?

12, 2013

Ad.6 Copyright statement/disclaimers:

purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain. Commercial uses of the Measures require a license agreement between the user and ABMS REF. Neither the ABMS REF nor its members shall be responsible for any use of these Measures.
Portions of the exclusion criteria in the ABMS REF episode-based resource use measures were adapted from HEDIS ® measure specifications.
Limited proprietary coding is contained in the Measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. The ABMS REF disclaims all liability for use or accuracy of coding contained in the specifications.

Ad. 7 Date of Submission (*MM/DD/YY*)**:**

04/18/2011

Variable Name	Variable Description	Required Data Sources*
admdate	Date of Admission	A
age	Age	E
billtyp	Facility Bill Type Code	C
days	Length of Stay	A
daysupp	Day's Supply	D
disdate	Date of Discharge	A
drg	Diagnosis related group	A,B
dstatus	Discharge status	A
egeoloc	Geographic Location	E
enrolid	Enrollee ID	All
fachdid	Facility Header Record ID	C
facprof	Professional/Facility Indicator	C
gennme	Generic Drug Name	D
mastfrm	Master Form Code	D
memdays	Member Days	E
ndcnum	National Drug Code (ndc_code in Redbook)	D
pay	Payment	A,B,C,D
pdx,dx1,dx2,…,dxn	Diagnosis Codes	A,B,C
physid	Physician ID	A,B
pproc, pproc1,…, pprocn	Procedure/Service Codes	A,B,C
procmod	Procedure Code Modifier	A,C
proctyp	Procedure Code Type	B,C
prodnme	Product Name	D
provid	Provider ID	A
qty	Quantity of Services	A,B,C,D
region	Region	E
revcode	Revenue Code	C
rx	Cohort Drug Indicator	D
sex	Gender	E
stdplac	Place of Service	C
stdprov	Provider Type	C
svcdate	Service Date	A,B,C,D
thercls	Therapeutic Class	D
tsvcdat	Date Service Ending	C

Data Sources*

A. Administrative claims data – inpatient (facility)
B. Administrative claims data – inpatient (professional)
C. Administrative claims data – outpatient/ambulatory (professional and facility)
D. Administrative claims data – pharmacy
E. Enrollment/coverage data (2 or more years)

Measure Component	**Required Variables**
Standardized Prices*	enrolid, ndcnum, pay, qty, drg, pproc,…,pprocn.
Exclusions and standard coverage definition	enrolid, pdx,dx1,…,dxn, age, svcdate, pproc, pproc1,…, pprocn, pay, qty, revcode, memdays, rx, stdplac, proctyp.
Cohort Definition	enrolid, svcdate, pdx, pdx1,…,pdxn, pproc1,…, pprocn, pay, qty, sex, age, thercls, dstatus, stdplac, billtyp, fachdid, revcode.
Related Resource Use	enrolid, facprof, pay, qty, pproc1,…, pprocn, svcdate, admdate, disdate, pdx, dx1,…, dxn, drg, ndcnum, thercls, gennme, prodnme, daysupp, procmod, mastfrm.
Output and Attribution	enrolid, svcdate, standardized price variables*, BETOS**, pproc1,…,pprocn, pdx, dx1,…,dxn, egeoloc, region, provid, stdprov, age, sex, physid.

* For internal testing and validation purposes, drug prices were calculated by taking the average of 2006 and 2007 Marketscan prices, inpatient facility prices were computed by calculating average daily price by DRG from 2007, and outpatient and service prices were constructed by calculating the mean price by procedure code within the Marketscan dataset.
** Berenson-Eggers Type of Service – Categorizes Health Care Procedure Coding System (HCPCS) procedure codes in order to analyze health care expenditures. See link for full description.
http://www.cms.hhs.gov/hcpcsreleasecodesets/20_betos.asp

Condition (Workgroup)	***Measure Name***	***Abbreviation***
Acute Myocardial Infarction (AMI)	Episode-of-Care for 30 days Following Onset	AMI1
Acute Myocardial Infarction (AMI)	Episode-of-Care for Post-Acute Period (Days 31-365 Days Post-Event)	AMI2
Asthma	Episode-of-Care for Patients with Asthma over a 1-year Period	ASTH
Breast Cancer	Episode-of-Care for 60-Day Period Preceding Breast Biopsy	BB
Breast Cancer	Episode-of-Care for Treatment in Newly Diagnosed Cases of Breast Cancer over a 15-month Period	BCT
Chronic Obstructive Pulmonary Disease (COPD)	Episode-of-Care for Patients with Stable COPD over a 1-year Period	COPD1
Chronic Obstructive Pulmonary Disease (COPD)	Episode-of-Care for Patients with Unstable COPD over a 1-year Period	COPD2
Colon Cancer	Episode-of-Care for 21-Day Period Around Colonoscopy	COL
Colon Cancer	Episode-of-Care for Treatment of Localized Colon Cancer	CCT
Congestive Heart Failure (CHF)	Episode-of-Care for Management of CHF Over 1-Year Period	CHF1
Congestive Heart Failure (CHF)	Episode-of-Care for Post Hospitalization Management of CHF over 4-Month Period	CHF2
Coronary Artery Disease (CAD)	Episode-of-Care for Management of Chronic CAD Over 1-Year Period	CAD1
Coronary Artery Disease (CAD)	Episode-of-Care for Management of CAD Post Revascularization Over 1-Year Period	CAD2
Diabetes	Episode-of-Care for Diabetes Over 1-Year Period	DIAB
Low Back Pain	Episode-of-Care for Simple Non-Specific Lower Back Pain (Acute and Sub-Acute)	LBP1
Low Back Pain	Episode-of-Care for Acute/Sub-Acute Lumbar Radiculopathy With or Without Lower Back Pain	LBP2
Pneumonia	Episode-of-Care for Community-Acquired Pneumonia Hospitalization	PN1
Pneumonia	Episode-of-Care for Ambulatory Pneumonia Episode	PN2

American Board of Medical Specialties

Higher standards. Better care.®

Research and Education Foundation

Analytic Findings: Breast Cancer Treatment Episode of Care

NQF Submission

Overview of Analyses Presented for Breast Cancer Treatment Episode*

- Denominator Attrition
- Related and Non-related Services
- Resource Use, Attribution and
- Risk Adjustment

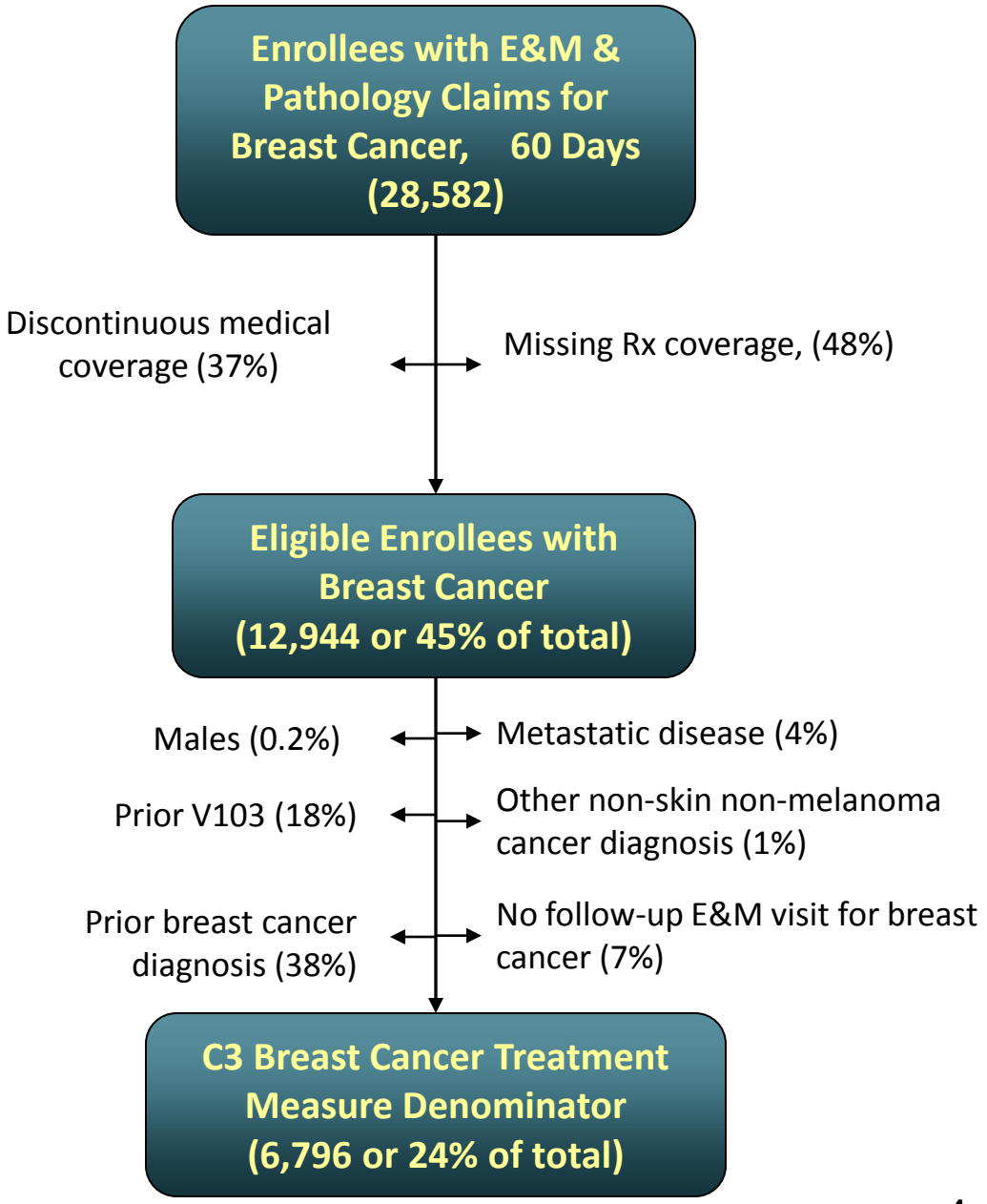
** The following results are based on the measure specification at different points in time, so the numbers are not always consistent, but they are not substantively different.*

Denominator Attrition

- Summarizes the initial denominator based on the workgroup's specifications
- Describes the percentage of enrollees removed from the analysis due to NCQA exclusions or other criteria.

C3 Breast Cancer Treatment Measure Denominator

- E&M claim with 174.x Dx within 60 days of pathology claim
- E&M claim must be within identification period: Jul. 1, 2006 – Sept. 30, 2007
- Note: exclusions are not additive (double-counting occurs often)



Related and Non-Related Services

- Examines most frequent related and non-related resource use by BETOS category
  - Evaluation and Management Visits, Procedures, Imaging, Tests, Admissions and Medications.
- Results are presented to the workgroup to examine the face validity of episodes.

Resource Use by Type of Service: Breast Cancer Treatment – HVHC

- All episode strata

Description	Mean	5 %t	25th %	50th %	75th %	95th %
OP Facility Costs	$ 10,437	$ -	$ -	$ 225	$ 10,014	$ 48,017
Evaluation and Management - IP	$ 2	$ -	$ -	$ -	$ -	$ -
Evaluation and Management - OP	$ 1,637	$ 262	$ 846	$ 1,441	$ 2,174	$ 3,645
Radiation Therapy	$ 5,496	$ -	$ -	$ 3,437	$ 7,378	$ 17,868
Surgery - Lumpec/Mastec	$ 1,085	$ -	$ -	$ 953	$ 1,479	$ 2,938
Surgery - Other	$ 2,402	$ -	$ 171	$ 831	$ 2,779	$ 9,512
Chemotherapy	$ 18,204	$ -	$ 274	$ 2,438	$ 25,397	$ 77,404
Procedures	$ 2,947	$ -	$ 820	$ 2,227	$ 3,995	$ 8,282
Imaging	$ 1,870	$ 85	$ 385	$ 910	$ 2,446	$ 6,515
Tests	$ 1,965	$ 347	$ 1,119	$ 1,811	$ 2,608	$ 4,108
Durable Medical Equipment	$ 162	$ -	$ -	$ -	$ 49	$ 758
Other Services	$ 1,069	$ -	$ -	$ -	$ 243	$ 6,917
Unclassified	$ 852	$ -	$ -	$ -	$ 361	$ 3,196
Drug Charges	$ 1,537	$ -	$ -	$ 298	$ 1,269	$ 4,618
Sum of costs	$ 52,776	$ 3,145	$ 18,735	$ 38,549	$ 72,332	$ 137,874

N = 6,796

Top 20 Related Chemotherapy Costs

CPT	Svcs	Cost	% Svcs	% Cost	Description
J9355	16,188	$ 40,510,856	8%	30%	Trastuzumab, 10 mg
J2505	11,902	$ 35,252,989	6%	26%	Injection, pegfilgrastim, 6 mg
J9170	7,554	$ 20,399,450	4%	15%	Docetaxel, 20 mg
96413	37,219	$ 8,239,188	18%	6%	Chemotherapy administration, intravenous infusion technique; up to 1 ho
J9265	7,738	$ 7,010,609	4%	5%	Paclitaxel, 30 mg
J2469	15,118	$ 5,623,376	7%	4%	Injection, palonosetron hcl, 25 mcg
J9035	564	$ 2,184,912	0%	2%	Injection, bevacizumab, 10 mg
J9000	9,313	$ 1,964,574	4%	1%	Doxorubicin hcl, 10 mg
J9178	847	$ 1,828,582	0%	1%	Injection, epirubicin hcl, 2 mg
J9045	1,629	$ 1,556,949	1%	1%	Carboplatin, 50 mg
96417	10,884	$ 1,418,578	5%	1%	Chemotherapy administration, intravenous infusion technique; each addi
J9264	612	$ 1,411,684	0%	1%	Injection, paclitaxel protein-bound particles, 1 mg
J1441	2,321	$ 997,154	1%	1%	Injection, filgrastim (g-csf), 480 mcg
96411	8,172	$ 893,319	4%	1%	Chemotherapy administration; intravenous, push technique, each additio
96415	9,722	$ 853,504	5%	1%	Chemotherapy administration, intravenous infusion technique; each addi
J1626	3,786	$ 716,234	2%	1%	Injection, granisetron hydrochloride, 100 mcg
J2405	3,844	$ 613,334	2%	0%	Injection, ondansetron hydrochloride, per 1 mg
J1440	1,443	$ 493,200	1%	0%	Injection, filgrastim (g-csf), 300 mcg
J9201	363	$ 442,535	0%	0%	Gemcitabine hcl, 200 mg
J2820	759	$ 281,372	0%	0%	Injection, sargramostim (gm-csf), 50 mcg

Top 20 Related Outpatient Facility Costs

CPT	Svcs	Cost	% Svcs	% Cost	Description
J9355	1,763	$ 6,811,645	1%	8%	Trastuzumab, 10 mg
77413	15,351	$ 6,278,126	7%	7%	Radiation treatment delivery, three or more separate treatment area
J2505	1,056	$ 5,451,078	1%	6%	Injection, pegfilgrastim, 6 mg
77414	10,635	$ 4,312,724	5%	5%	Radiation treatment delivery, three or more separate treatment area
77418	2,646	$ 3,421,727	1%	4%	Intensity modulated treatment delivery, single or multiple fields/arcs
77334	2,750	$ 2,891,226	1%	3%	Treatment devices, design and construction; complex (irregular bloc
J9170	551	$ 2,474,183	0%	3%	Docetaxel, 20 mg
77295	847	$ 2,042,267	0%	2%	Therapeutic radiology simulation-aided field setting; 3-dimensional
77336	6,294	$ 1,905,192	3%	2%	Continuing medical physics consultation, including assessment of t
77290	1,816	$ 1,803,724	1%	2%	Therapeutic radiology simulation-aided field setting; complex
J9265	1,105	$ 1,716,494	1%	2%	Paclitaxel, 30 mg
36561	1,258	$ 1,556,370	1%	2%	Insertion of tunneled centrally inserted central venous access device
96413	4,118	$ 1,544,004	2%	2%	Chemotherapy administration, intravenous infusion technique; up to
77300	2,584	$ 1,507,301	1%	2%	Basic radiation dosimetry calculation, central axis depth dose calcu
19301	740	$ 1,171,079	0%	1%	Mastectomy, partial (eg, lumpectomy, tylectomy, quadrantectomy, s
19302	467	$ 925,816	0%	1%	Mastectomy, partial (eg, lumpectomy, tylectomy, quadrantectomy, s
77416	2,310	$ 899,715	1%	1%	Radiation treatment delivery, three or more separate treatment area
77781	386	$ 881,370	0%	1%	Remote afterloading high intensity brachytherapy; 1-4 source positio
77059	555	$ 822,771	0%	1%	Magnetic resonance imaging, breast, without and/or with contrast m
77280	1,563	$ 813,031	1%	1%	Therapeutic radiology simulation-aided field setting; simple

Common Non-Related Outpatient Facility Costs

CPT	Svcs	Cost	% Svcs	% Cost	Description
19103	755	$ 559,509	1%	4%	Biopsy of breast; percutaneous, automated vacuum assisted or rotating bi
19102	823	$ 512,464	2%	3%	Biopsy of breast; percutaneous, needle core, using imaging guidance
19125	332	$ 368,466	1%	2%	Excision of breast lesion identified by preoperative placement of radiologic
19120	322	$ 366,595	1%	2%	Excision of cyst, fibroadenoma, or other benign or malignant tumor, aberra
76942	719	$ 273,802	1%	2%	Ultrasonic guidance for needle placement (eg, biopsy, aspiration, injection
45378	365	$ 269,184	1%	2%	Colonoscopy, flexible, proximal to splenic flexure; diagnostic, with or witho
76645	1,409	$ 264,800	3%	2%	Ultrasound, breast(s) (unilateral or bilateral), real time with image docume
19295	728	$ 251,021	1%	2%	Image guided placement, metallic localization clip, percutaneous, during b
19301	184	$ 246,163	0%	2%	Mastectomy, partial (eg, lumpectomy, tylectomy, quadrantectomy, segmer
97140	1,597	$ 225,922	3%	2%	Manual therapy techniques (eg, mobilization/ manipulation, manual lymph
71260	227	$ 225,135	0%	1%	Computed tomography, thorax; with contrast material(s)
38525	217	$ 206,301	0%	1%	Biopsy or excision of lymph node(s); open, deep axillary node(s)
97110	1,788	$ 197,793	3%	1%	Therapeutic procedure, one or more areas, each 15 minutes; therapeutic e
19290	364	$ 172,286	1%	1%	Preoperative placement of needle localization wire, breast;
93307	276	$ 156,015	1%	1%	Echocardiography, transthoracic, real-time with image documentation (2D
72193	175	$ 149,973	0%	1%	Computed tomography, pelvis; with contrast material(s)
45380	182	$ 148,668	0%	1%	Colonoscopy, flexible, proximal to splenic flexure; with biopsy, single or mu
99284	281	$ 136,119	1%	1%	Emergency department visit for the evaluation and management of a patie
58661	60	$ 129,470	0%	1%	Laparoscopy, surgical; with removal of adnexal structures (partial or total
70553	84	$ 129,265	0%	1%	Magnetic resonance (eg, proton) imaging, brain (including brain stem); wit

Top 20 Related Radiation

CPT	Svcs	Cost	% Svcs	% Cost	Description
77427	27,772	$ 8,159,126	17%	19%	Radiation treatment management, five treatments
77418	8,041	$ 7,229,770	5%	17%	Intensity modulated treatment delivery, single or multiple fields/arcs
77413	28,221	$ 4,623,710	17%	11%	Radiation treatment delivery, three or more separate treatment area
77334	12,248	$ 4,145,405	7%	10%	Treatment devices, design and construction; complex (irregular bloc
77295	3,177	$ 2,835,766	2%	7%	Therapeutic radiology simulation-aided field setting; 3-dimensional
77414	15,782	$ 2,573,284	9%	6%	Radiation treatment delivery, three or more separate treatment area
77300	12,007	$ 2,442,815	7%	6%	Basic radiation dosimetry calculation, central axis depth dose calcu
77290	7,964	$ 2,345,851	5%	5%	Therapeutic radiology simulation-aided field setting; complex
77336	11,693	$ 1,970,784	7%	5%	Continuing medical physics consultation, including assessment of t
77263	4,669	$ 1,325,315	3%	3%	Therapeutic radiology treatment planning; complex
77470	2,430	$ 1,014,739	1%	2%	Special treatment procedure (eg, total body irradiation, hemibody ra
77301	683	$ 901,222	0%	2%	Intensity modulated radiotherapy plan, including dose-volume histog
77280	6,524	$ 890,971	4%	2%	Therapeutic radiology simulation-aided field setting; simple
77315	2,654	$ 524,927	2%	1%	Teletherapy, isodose plan (whether hand or computer calculated); c
77331	3,775	$ 495,543	2%	1%	Special dosimetry (eg, TLD, microdosimetry) (specify), only when pi
77416	2,272	$ 401,446	1%	1%	Radiation treatment delivery, three or more separate treatment area
77417	8,614	$ 392,851	5%	1%	Therapeutic radiology port film(s)
77421	2,635	$ 385,471	2%	1%	Stereoscopic X-ray guidance for localization of target volume for the
77321	1,740	$ 278,187	1%	1%	Special teletherapy port plan, particles, hemibody, total body
77332	1,404	$ 112,589	1%	0%	Treatment devices, design and construction; simple (simple block, s

Top 20 Related Procedures

CPT	Svcs	Cost	% Svcs	% Cost	Description
00402	3,579	$ 3,757,543	4%	16%	Anesthesia for procedures on the integumentary system on the extr
00404	3,165	$ 3,202,651	3%	14%	Anesthesia for procedures on the integumentary system on the extr
00400	6,082	$ 2,585,666	6%	11%	Anesthesia for procedures on the integumentary system on the extr
36561	2,748	$ 2,463,927	3%	10%	Insertion of tunneled centrally inserted central venous access device
01610	2,224	$ 1,746,601	2%	7%	Anesthesia for all procedures on nerves, muscles, tendons, fascia,
90767	18,145	$ 1,435,610	19%	6%	Intravenous infusion, for therapy, prophylaxis, or diagnosis (specify
77781	1,846	$ 1,121,146	2%	5%	Remote afterloading high intensity brachytherapy; 1-4 source positi
00532	2,521	$ 1,114,827	3%	5%	Anesthesia for access to central venous circulation
90775	16,527	$ 1,009,813	17%	4%	Therapeutic, prophylactic or diagnostic injection (specify substance
11970	618	$ 504,852	1%	2%	Replacement of tissue expander with permanent prosthesis
90772	17,194	$ 398,212	18%	2%	Therapeutic, prophylactic or diagnostic injection (specify substance
90765	2,821	$ 289,343	3%	1%	Intravenous infusion, for therapy, prophylaxis, or diagnosis (specify
15734	142	$ 283,238	0%	1%	Muscle, myocutaneous, or fasciocutaneous flap; trunk
19318	146	$ 224,074	0%	1%	Reduction mammaplasty
19316	175	$ 163,368	0%	1%	Mastopexy
77782	216	$ 162,671	0%	1%	Remote afterloading high intensity brachytherapy; 5-8 source positi
77784	117	$ 127,376	0%	1%	Remote afterloading high intensity brachytherapy; over 12 source p
90761	2,997	$ 123,533	3%	1%	Intravenous infusion, hydration; each additional hour (List separatel
90768	3,103	$ 111,965	3%	0%	Intravenous infusion, for therapy, prophylaxis, or diagnosis (specify
00406	76	$ 109,134	0%	0%	Anesthesia for procedures on the integumentary system on the extr

Common Non-Related Procedures

CPT	Svcs	Cost	% Svcs	% Cost	Description
97110	9,703	$ 535,896	14%	4%	Therapeutic procedure, one or more areas, each 15 minutes; therapeutic e
45378	838	$ 369,601	1%	3%	Colonoscopy, flexible, proximal to splenic flexure; diagnostic, with or witho
97140	8,676	$ 348,154	12%	3%	Manual therapy techniques (eg, mobilization/ manipulation, manual lymph
19318	196	$ 324,870	0%	3%	Reduction mammaplasty
00840	365	$ 314,169	1%	3%	Anesthesia for intraperitoneal procedures in lower abdomen including lapa
00810	525	$ 214,620	1%	2%	Anesthesia for lower intestinal endoscopic procedures, endoscope introdu
45380	429	$ 207,933	1%	2%	Colonoscopy, flexible, proximal to splenic flexure; with biopsy, single or mu
19316	196	$ 199,512	0%	2%	Mastopexy
58150	167	$ 188,911	0%	2%	Total abdominal hysterectomy (corpus and cervix), with or without remova
45385	281	$ 164,366	0%	1%	Colonoscopy, flexible, proximal to splenic flexure; with removal of tumor(s)
27447	90	$ 160,875	0%	1%	Arthroplasty, knee, condyle and plateau; medial AND lateral compartment
43239	440	$ 143,479	1%	1%	Upper gastrointestinal endoscopy including esophagus, stomach, and eith
01610	188	$ 141,392	0%	1%	Anesthesia for all procedures on nerves, muscles, tendons, fascia, and bu
66984	150	$ 132,654	0%	1%	Extracapsular cataract removal with insertion of intraocular lens prosthesis
90775	1,964	$ 113,190	3%	1%	Therapeutic, prophylactic or diagnostic injection (specify substance or dru
58552	111	$ 110,073	0%	1%	Laparoscopy, surgical, with vaginal hysterectomy, for uterus 250 g or less
58661	130	$ 107,699	0%	1%	Laparoscopy, surgical; with removal of adnexal structures (partial or total
90765	1,023	$ 105,181	1%	1%	Intravenous infusion, for therapy, prophylaxis, or diagnosis (specify substa
20610	1,086	$ 100,807	2%	1%	Arthrocentesis, aspiration and/or injection; major joint or bursa (eg, should
00790	140	$ 99,555	0%	1%	Anesthesia for intraperitoneal procedures in upper abdomen including lap

Top 20 Related Surgery - Other

CPT	Svcs	Cost	% Svcs	% Cost	Description
19357	2,180	$ 4,236,675	6%	22%	Breast reconstruction, immediate or delayed, with tissue expander,
19364	334	$ 2,022,209	1%	10%	Breast reconstruction with free flap
19296	378	$ 1,754,314	1%	9%	Placement of radiotherapy afterloading balloon catheter into the bre
38525	3,036	$ 1,468,801	8%	8%	Biopsy or excision of lymph node(s); open, deep axillary node(s)
19350	901	$ 1,102,448	2%	6%	Nipple/areola reconstruction
19342	753	$ 979,401	2%	5%	Delayed insertion of breast prosthesis following mastopexy, mastec
19367	323	$ 913,759	1%	5%	Breast reconstruction with transverse rectus abdominis myocutaneo
19380	737	$ 747,643	2%	4%	Revision of reconstructed breast
19361	346	$ 692,397	1%	4%	Breast reconstruction with latissimus dorsi flap, without prosthetic in
36590	1,584	$ 555,647	4%	3%	Removal of tunneled central venous access device, with subcutaneo
19499	176	$ 491,692	0%	3%	Unlisted procedure, breast
19103	862	$ 450,175	2%	2%	Biopsy of breast; percutaneous, automated vacuum assisted or rota
38792	3,920	$ 390,862	11%	2%	Injection procedure; for identification of sentinel node
38745	368	$ 388,990	1%	2%	Axillary lymphadenectomy; complete
76645	4,854	$ 354,515	13%	2%	Ultrasound, breast(s) (unilateral or bilateral), real time with image d
19371	328	$ 333,414	1%	2%	Periprosthetic capsulectomy, breast
19290	2,254	$ 311,996	6%	2%	Preoperative placement of needle localization wire, breast;
76942	2,728	$ 298,454	7%	2%	Ultrasonic guidance for needle placement (eg, biopsy, aspiration, in
78195	2,496	$ 293,171	7%	2%	Lymphatics and lymph nodes imaging
36571	296	$ 253,605	1%	1%	Insertion of peripherally inserted central venous access device, with

Common Non-Related Surgery - Other

CPT	Svcs	Cost	% Svcs	% Cost	Description
19103	3,109	$ 1,637,034	11%	32%	Biopsy of breast; percutaneous, automated vacuum assisted or rotating bi
19102	2,713	$ 694,358	10%	14%	Biopsy of breast; percutaneous, needle core, using imaging guidance
76942	4,224	$ 508,678	15%	10%	Ultrasonic guidance for needle placement (eg, biopsy, aspiration, injection
19295	3,606	$ 505,047	13%	10%	Image guided placement, metallic localization clip, percutaneous, during b
76645	6,217	$ 450,473	23%	9%	Ultrasound, breast(s) (unilateral or bilateral), real time with image docume
76095	517	$ 243,055	2%	5%	
38525	443	$ 228,421	2%	4%	Biopsy or excision of lymph node(s); open, deep axillary node(s)
19290	1,128	$ 156,796	4%	3%	Preoperative placement of needle localization wire, breast;
76090	988	$ 86,970	4%	2%	
76098	2,634	$ 58,156	10%	1%	Radiological examination, surgical specimen
38745	56	$ 54,377	0%	1%	Axillary lymphadenectomy; complete
38792	552	$ 54,117	2%	1%	Injection procedure; for identification of sentinel node
19100	282	$ 51,973	1%	1%	Biopsy of breast; percutaneous, needle core, not using imaging guidance
78195	389	$ 47,322	1%	1%	Lymphatics and lymph nodes imaging
19357	24	$ 46,966	0%	1%	Breast reconstruction, immediate or delayed, with tissue expander, includi
19364	8	$ 41,619	0%	1%	Breast reconstruction with free flap
19296	8	$ 35,534	0%	1%	Placement of radiotherapy afterloading balloon catheter into the breast for
19101	75	$ 35,148	0%	1%	Biopsy of breast; open, incisional
76096	214	$ 22,290	1%	0%	
38740	34	$ 21,357	0%	0%	Axillary lymphadenectomy; superficial

Top 20 Related Tests

CPT	Svcs	Cost	% Svcs	% Cost	Description
88307	11,028	$ 3,481,824	4%	22%	Level V - Surgical pathology, gross and microscopic examination A
88305	17,018	$ 2,298,109	6%	15%	Level IV - Surgical pathology, gross and microscopic examination A
88342	8,301	$ 1,690,882	3%	11%	Immunohistochemistry (including tissue immunoperoxidase), each a
88361	3,087	$ 1,314,763	1%	8%	Morphometric analysis, tumor immunohistochemistry (eg, Her-2/neu
88360	4,375	$ 1,219,640	2%	8%	Morphometric analysis, tumor immunohistochemistry (eg, Her-2/neu
85025	64,226	$ 783,516	23%	5%	Blood count; complete (CBC), automated (Hgb, Hct, RBC, WBC an
88331	3,743	$ 677,017	1%	4%	Pathology consultation during surgery; first tissue block, with frozer
80053	34,841	$ 577,685	12%	4%	Comprehensive metabolic panel This panel must include the followi
88368	1,611	$ 566,946	1%	4%	Morphometric analysis, in situ hybridization (quantitative or semi-qu
88309	1,648	$ 408,851	1%	3%	Level VI - Surgical pathology, gross and microscopic examination B
86300	9,137	$ 297,274	3%	2%	Immunoassay for tumor antigen, quantitative; CA 15-3 (27.29)
36415	44,561	$ 264,860	16%	2%	Collection of venous blood by venipuncture
88367	348	$ 157,308	0%	1%	Morphometric analysis, in situ hybridization (quantitative or semi-qu
88333	832	$ 129,202	0%	1%	Pathology consultation during surgery; cytologic examination (eg, to
88321	952	$ 124,827	0%	1%	Consultation and report on referred slides prepared elsewhere
83914	68	$ 109,404	0%	1%	Mutation identification by enzymatic ligation or primer extension, sir
80050	2,604	$ 107,509	1%	1%	General health panel This panel must include the following: Compre
82378	3,555	$ 98,307	1%	1%	Carcinoembryonic antigen (CEA)
88332	641	$ 79,351	0%	1%	Pathology consultation during surgery; each additional tissue block
88173	600	$ 79,211	0%	1%	Cytopathology, evaluation of fine needle aspirate; interpretation and

Common Non-Related Tests

CPT	Svcs	Cost	% Svcs	% Cost	Description
80061	6,213	$ 124,490	6%	4%	Lipid panel This panel must include the following: Cholesterol, serum, tota
93000	2,919	$ 104,745	3%	3%	Electrocardiogram, routine ECG with at least 12 leads; with interpretation a
88175	2,894	$ 104,072	3%	3%	Cytopathology, cervical or vaginal (any reporting system), collected in pres
88185	45	$ 91,148	0%	3%	Flow cytometry, cell surface, cytoplasmic, or nuclear marker, technical cor
84443	3,281	$ 88,263	3%	3%	Thyroid stimulating hormone (TSH)
88173	653	$ 86,575	1%	3%	Cytopathology, evaluation of fine needle aspirate; interpretation and repor
88142	2,850	$ 84,193	3%	3%	Cytopathology, cervical or vaginal (any reporting system), collected in pres
95904	311	$ 80,966	0%	3%	Nerve conduction, amplitude and latency/velocity study, each nerve; senso
93015	535	$ 79,333	1%	3%	Cardiovascular stress test using maximal or submaximal treadmill or bicyc
93010	4,342	$ 75,089	4%	2%	Electrocardiogram, routine ECG with at least 12 leads; interpretation and r
95811	97	$ 61,705	0%	2%	Polysomnography; sleep staging with 4 or more additional parameters of s
95810	101	$ 60,276	0%	2%	Polysomnography; sleep staging with 4 or more additional parameters of s
88368	179	$ 59,224	0%	2%	Morphometric analysis, in situ hybridization (quantitative or semi-quantitat
87621	1,082	$ 57,991	1%	2%	Infectious agent detection by nucleic acid (DNA or RNA); papillomavirus, h
88321	426	$ 55,428	0%	2%	Consultation and report on referred slides prepared elsewhere
95903	162	$ 49,539	0%	2%	Nerve conduction, amplitude and latency/velocity study, each nerve; motor
88333	304	$ 46,020	0%	1%	Pathology consultation during surgery; cytologic examination (eg, touch pr
88304	745	$ 44,228	1%	1%	Level III - Surgical pathology, gross and microscopic examination Abortion
88367	85	$ 40,755	0%	1%	Morphometric analysis, in situ hybridization (quantitative or semi-quantitat
95900	167	$ 35,590	0%	1%	Nerve conduction, amplitude and latency/velocity study, each nerve; motor

Top 20 Related Imaging

CPT	Svcs	Cost	% Svcs	% Cost	Description
78815	2,042	$ 2,894,043	3%	19%	Positron emission tomography (PET) with concurrently acquired co
77059	3,712	$ 2,708,575	5%	18%	Magnetic resonance imaging, breast, without and/or with contrast n
71260	3,030	$ 718,428	4%	5%	Computed tomography, thorax; with contrast material(s)
74160	2,109	$ 512,945	3%	3%	Computed tomography, abdomen; with contrast material(s)
77031	1,991	$ 493,031	3%	3%	Stereotactic localization guidance for breast biopsy or needle place
72193	2,198	$ 461,495	3%	3%	Computed tomography, pelvis; with contrast material(s)
77014	2,720	$ 454,642	4%	3%	Computed tomography guidance for placement of radiation therapy
76094	410	$ 390,349	1%	3%	
78812	312	$ 385,913	0%	3%	Positron emission tomography (PET) imaging; skull base to mid-thi
A9552	919	$ 366,054	1%	2%	Fluorodeoxyglucose f-18 fdg, diagnostic, per study dose, up to 45 n
78306	2,649	$ 339,863	4%	2%	Bone and/or joint imaging; whole body
77055	4,931	$ 333,940	7%	2%	Mammography; unilateral
77056	3,694	$ 322,977	5%	2%	Mammography; bilateral
78472	1,947	$ 315,613	3%	2%	Cardiac blood pool imaging, gated equilibrium; planar, single study
74170	960	$ 258,806	1%	2%	Computed tomography, abdomen; without contrast material, follow
G0206	2,596	$ 228,415	4%	2%	Diagnostic mammography, producing direct digital image, unilatera
G0204	2,036	$ 218,290	3%	1%	Diagnostic mammography, producing direct digital image, bilateral,
0073T	245	$ 211,648	0%	1%	Compensator-based beam modulation treatment delivery of inverse
77058	355	$ 189,432	0%	1%	Magnetic resonance imaging, breast, without and/or with contrast n
Q9952	864	$ 178,912	1%	1%	Injection, gadolinium-based magnetic resonance contrast agent, pe

Common Non-Related Imaging

CPT	Svcs	Cost	% Svcs	% Cost	Description
93307	3,362	$ 603,299	6%	8%	Echocardiography, transthoracic, real-time with image documentation (2D
70553	599	$ 397,123	1%	5%	Magnetic resonance (eg, proton) imaging, brain (including brain stem); wit
71260	1,272	$ 273,118	2%	4%	Computed tomography, thorax; with contrast material(s)
77080	2,828	$ 272,416	5%	4%	Dual-energy X-ray absorptiometry (DXA), bone density study, 1 or more si
93325	3,132	$ 269,017	5%	4%	Doppler echocardiography color flow velocity mapping (List separately in a
93320	3,254	$ 263,727	5%	3%	Doppler echocardiography, pulsed wave and/or continuous wave with spe
78465	549	$ 257,580	1%	3%	Myocardial perfusion imaging; tomographic (SPECT), multiple studies (inc
74160	1,090	$ 234,092	2%	3%	Computed tomography, abdomen; with contrast material(s)
72193	1,205	$ 224,784	2%	3%	Computed tomography, pelvis; with contrast material(s)
78815	203	$ 220,766	0%	3%	Positron emission tomography (PET) with concurrently acquired computed
76830	1,713	$ 189,713	3%	2%	Ultrasound, transvaginal
71020	6,163	$ 185,671	10%	2%	Radiologic examination, chest, two views, frontal and lateral;
78472	992	$ 182,538	2%	2%	Cardiac blood pool imaging, gated equilibrium; planar, single study at rest
74170	600	$ 150,885	1%	2%	Computed tomography, abdomen; without contrast material, followed by c
73721	330	$ 142,177	1%	2%	Magnetic resonance (eg, proton) imaging, any joint of lower extremity; with
G0204	1,217	$ 133,069	2%	2%	Diagnostic mammography, producing direct digital image, bilateral, all view
72158	213	$ 132,241	0%	2%	Magnetic resonance (eg, proton) imaging, spinal canal and contents, with
76856	1,082	$ 108,870	2%	1%	Ultrasound, pelvic (nonobstetric), real time with image documentation; cor
72148	239	$ 101,734	0%	1%	Magnetic resonance (eg, proton) imaging, spinal canal and contents, lumb
74183	163	$ 94,208	0%	1%	Magnetic resonance (eg, proton) imaging, abdomen; without contrast mat

Top 20 Related E&M, Outpatient

CPT	Svcs	Cost	% Svcs	% Cost	Description
99214	37,690	$ 3,649,460	30%	28%	Office or other outpatient visit for the evaluation and management c
99245	7,908	$ 2,072,659	6%	16%	Office consultation for a new or established patient, which requires
99213	29,902	$ 1,949,985	24%	15%	Office or other outpatient visit for the evaluation and management c
99244	7,195	$ 1,466,538	6%	11%	Office consultation for a new or established patient, which requires
99215	9,008	$ 1,243,949	7%	9%	Office or other outpatient visit for the evaluation and management c
99243	3,122	$ 457,842	2%	3%	Office consultation for a new or established patient, which requires
99212	6,831	$ 307,214	5%	2%	Office or other outpatient visit for the evaluation and management c
99211	8,667	$ 219,592	7%	2%	Office or other outpatient visit for the evaluation and management c
99205	1,073	$ 205,942	1%	2%	Office or other outpatient visit for the evaluation and management c
90806	2,038	$ 176,907	2%	1%	Individual psychotherapy, insight oriented, behavior modifying and/c
99204	1,158	$ 176,792	1%	1%	Office or other outpatient visit for the evaluation and management c
99232	2,126	$ 163,714	2%	1%	Subsequent hospital care, per day, for the evaluation and managen
99233	1,032	$ 113,087	1%	1%	Subsequent hospital care, per day, for the evaluation and managen
99242	924	$ 105,243	1%	1%	Office consultation for a new or established patient, which requires
99203	902	$ 96,889	1%	1%	Office or other outpatient visit for the evaluation and management c
99222	195	$ 90,777	0%	1%	Initial hospital care, per day, for the evaluation and management of
99223	351	$ 71,521	0%	1%	Initial hospital care, per day, for the evaluation and management of
99254	286	$ 51,375	0%	0%	Inpatient consultation for a new or established patient, which requir
99255	185	$ 44,736	0%	0%	Inpatient consultation for a new or established patient, which requir
99285	130	$ 39,637	0%	0%	Emergency department visit for the evaluation and management of

Common Non-Related E&M, Outpatient

CPT	Svcs	Cost	% Svcs	% Cost	Description
99213	29,806	$ 1,934,065	28%	19%	Office or other outpatient visit for the evaluation and management of an es
99214	17,542	$ 1,691,697	16%	17%	Office or other outpatient visit for the evaluation and management of an es
99396	5,236	$ 651,779	5%	6%	Periodic comprehensive preventive medicine reevaluation and manageme
99244	2,876	$ 587,144	3%	6%	Office consultation for a new or established patient, which requires these 3
99215	2,801	$ 386,313	3%	4%	Office or other outpatient visit for the evaluation and management of an es
99245	1,471	$ 384,658	1%	4%	Office consultation for a new or established patient, which requires these 3
90806	4,186	$ 364,207	4%	4%	Individual psychotherapy, insight oriented, behavior modifying and/or supp
99243	2,400	$ 351,990	2%	3%	Office consultation for a new or established patient, which requires these 3
99212	7,271	$ 325,742	7%	3%	Office or other outpatient visit for the evaluation and management of an es
99285	1,065	$ 306,437	1%	3%	Emergency department visit for the evaluation and management of a patie
99203	2,481	$ 265,469	2%	3%	Office or other outpatient visit for the evaluation and management of a nev
99232	2,872	$ 226,496	3%	2%	Subsequent hospital care, per day, for the evaluation and management of
99204	1,411	$ 213,638	1%	2%	Office or other outpatient visit for the evaluation and management of a nev
99284	998	$ 189,230	1%	2%	Emergency department visit for the evaluation and management of a patie
99233	1,355	$ 151,639	1%	1%	Subsequent hospital care, per day, for the evaluation and management of
99386	674	$ 103,949	1%	1%	Initial comprehensive preventive medicine evaluation and management of
92014	1,018	$ 100,960	1%	1%	Ophthalmological services: medical examination and evaluation, with initia
99205	511	$ 97,956	0%	1%	Office or other outpatient visit for the evaluation and management of a nev
99222	220	$ 94,689	0%	1%	Initial hospital care, per day, for the evaluation and management of a patie
95165	418	$ 92,213	0%	1%	Professional services for the supervision of preparation and provision of a

Top 20 Related Surgery – Lumpec/Mastec

CPT	Svcs	Cost	% Svcs	% Cost	Description
19303	2,433	$ 2,353,829	25%	27%	Mastectomy, simple, complete
19307	1,445	$ 1,918,402	15%	22%	Mastectomy, modified radical, including axillary lymph nodes, with c
19301	2,324	$ 1,250,082	24%	14%	Mastectomy, partial (eg, lumpectomy, tylectomy, quadrantectomy, s
19302	1,064	$ 1,248,458	11%	14%	Mastectomy, partial (eg, lumpectomy, tylectomy, quadrantectomy, s
19240	189	$ 365,858	2%	4%	
19125	630	$ 352,881	7%	4%	Excision of breast lesion identified by preoperative placement of rad
19160	392	$ 289,631	4%	3%	
19180	276	$ 274,151	3%	3%	
19162	176	$ 224,168	2%	3%	
19120	380	$ 204,796	4%	2%	Excision of cyst, fibroadenoma, or other benign or malignant tumor
19304	118	$ 86,183	1%	1%	Mastectomy, subcutaneous
19305	68	$ 76,222	1%	1%	Mastectomy, radical, including pectoral muscles, axillary lymph nod
19306	14	$ 14,539	0%	0%	Mastectomy, radical, including pectoral muscles, axillary and interna
19126	38	$ 10,327	0%	0%	Excision of breast lesion identified by preoperative placement of rad
19182	6	$ 5,624	0%	0%	
19200	3	$ 3,270	0%	0%	
19220			0%	0%	

Common Non-Related Surgery – Lumpec/Mastec

CPT	Svcs	Cost	% Svcs	% Cost	Description
19125	849	$ 497,837	30%	24%	Excision of breast lesion identified by preoperative placement of radiologic
19120	571	$ 316,888	20%	15%	Excision of cyst, fibroadenoma, or other benign or malignant tumor, aberr
19301	484	$ 266,090	17%	13%	Mastectomy, partial (eg, lumpectomy, tylectomy, quadrantectomy, segmer
19302	201	$ 233,784	7%	11%	Mastectomy, partial (eg, lumpectomy, tylectomy, quadrantectomy, segmer
19307	110	$ 169,514	4%	8%	Mastectomy, modified radical, including axillary lymph nodes, with or witho
19160	194	$ 152,612	7%	7%	
19303	145	$ 136,127	5%	7%	Mastectomy, simple, complete
19162	91	$ 106,188	3%	5%	
19240	60	$ 104,294	2%	5%	
19180	38	$ 38,699	1%	2%	
19126	55	$ 13,813	2%	1%	Excision of breast lesion identified by preoperative placement of radiologic
19305	7	$ 8,785	0%	0%	Mastectomy, radical, including pectoral muscles, axillary lymph nodes
19304	7	$ 5,481	0%	0%	Mastectomy, subcutaneous
19220	1	$ 1,187	0%	0%	
19182	1	$ 541	0%	0%	

Top 20 Related Other

CPT	Svcs	Cost	% Svcs	% Cost	Description
J0881	4,381	$ 5,049,345	7%	59%	Injection, darbepoetin alfa, 1 microgram (non-esrd use)
J0885	2,222	$ 1,267,820	3%	15%	Injection, epoetin alfa, (for non-esrd use), 1000 units
J3487	842	$ 849,087	1%	10%	Injection, zoledronic acid, 1 mg
J3490	2,844	$ 596,927	4%	7%	Unclassified drugs
J1642	8,872	$ 219,501	14%	3%	Injection, heparin sodium, (heparin lock flush), per 10 units
J2430	253	$ 117,975	0%	1%	Injection, pamidronate disodium, per 30 mg
J1100	19,203	$ 103,524	30%	1%	Injection, dexamethasone sodium phosphate, 1mg
J2997	382	$ 38,051	1%	0%	Injection, alteplase recombinant, 1 mg
J1200	10,241	$ 31,377	16%	0%	Injection, diphenhydramine hcl, up to 50 mg
J1644	5,954	$ 30,192	9%	0%	Injection, heparin sodium, per 1000 units
J1751	120	$ 23,685	0%	0%	Injection, iron dextran 165, 50 mg
J1190	30	$ 20,731	0%	0%	Injection, dexrazoxane hydrochloride, per 250 mg
J2780	3,051	$ 16,938	5%	0%	Injection, ranitidine hydrochloride, 25 mg
J2060	2,717	$ 15,251	4%	0%	Injection, lorazepam, 2 mg
J1567	4	$ 13,249	0%	0%	Injection, immune globulin, intravenous, non-lyophilized (e.g. liquid)
J1950	15	$ 12,117	0%	0%	Injection, leuprolide acetate (for depot suspension), per 3.75 mg
79101	55	$ 11,148	0%	0%	Radiopharmaceutical therapy, by intravenous administration
A4218	590	$ 10,206	1%	0%	Sterile saline or water, metered dose dispenser, 10 ml
J2916	111	$ 8,300	0%	0%	Injection, sodium ferric gluconate complex in sucrose injection, 12.5
J2504	1	$ 7,638	0%	0%	Injection, pegademase bovine, 25 iu

Common Non-Related Other

CPT	Svcs	Cost	% Svcs	% Cost	Description
J0881	475	$ 549,578	2%	21%	Injection, darbepoetin alfa, 1 microgram (non-esrd use)
J3487	365	$ 358,649	1%	14%	Injection, zoledronic acid, 1 mg
98941	5,167	$ 201,110	17%	8%	Chiropractic manipulative treatment (CMT); spinal, three to four regions
J0885	280	$ 154,828	1%	6%	Injection, epoetin alfa, (for non-esrd use), 1000 units
J3490	632	$ 137,398	2%	5%	Unclassified drugs
A0427	227	$ 123,763	1%	5%	Ambulance service, advanced life support, emergency transport, level 1 (a
98940	2,722	$ 84,925	9%	3%	Chiropractic manipulative treatment (CMT); spinal, one to two regions
J1566	18	$ 65,926	0%	3%	Injection, immune globulin, intravenous, lyophilized (e.g. powder), 500 mg
A0425	450	$ 65,710	2%	3%	Ground mileage, per statute mile
J1745	18	$ 54,817	0%	2%	Injection infliximab, 10 mg
A0429	93	$ 38,623	0%	2%	Ambulance service, basic life support, emergency transport (bls-emergenc
J1650	113	$ 36,688	0%	1%	Injection, enoxaparin sodium, 10 mg
98942	760	$ 35,635	3%	1%	Chiropractic manipulative treatment (CMT); spinal, five regions
J2430	73	$ 33,252	0%	1%	Injection, pamidronate disodium, per 30 mg
A0428	99	$ 32,769	0%	1%	Ambulance service, basic life support, non-emergency transport, (bls)
J0129	20	$ 32,607	0%	1%	Injection, abatacept, 10 mg
90471	1,907	$ 32,281	6%	1%	Immunization administration (includes percutaneous, intradermal, subcuta
A0431	4	$ 31,935	0%	1%	Ambulance service, conventional air services, transport, one way (rotary w
90658	1,943	$ 30,375	6%	1%	Influenza virus vaccine, split virus, when administered to individuals 3 year
J2357	20	$ 30,267	0%	1%	Injection, omalizumab, 5 mg

Top 20 Related Unclassified

CPT	Svcs	Cost	% Svcs	% Cost	Description
S3820	994	$ 2,815,626	11%	41%	Complete brca1 and brca2 gene sequence analysis for susceptibilit
S3854	736	$ 2,246,167	8%	33%	Gene expression profiling panel for use in the management of brea
S2068	88	$ 809,969	1%	12%	Breast reconstruction with deep inferior epigastric perforator (diep)
A9282	605	$ 221,931	7%	3%	Wig, any type, each
S9123	530	$ 135,162	6%	2%	Nursing care, in the home; by registered nurse, per hour (use for ge
S2067	3	$ 82,897	0%	1%	
A9579	169	$ 69,956	2%	1%	
S2066	4	$ 63,918	0%	1%	
36591	919	$ 32,377	10%	0%	Collection of blood specimen from a completely implantable venous
G0154	209	$ 32,240	2%	0%	Services of skilled nurse in home health setting, each 15 minutes
99070	571	$ 29,345	6%	0%	Supplies and materials (except spectacles), provided by the physici
S1016	325	$ 21,612	4%	0%	Non-pvc (polyvinyl chloride) intravenous administration set, for use
A4550	435	$ 21,244	5%	0%	Surgical trays
S5501	165	$ 20,509	2%	0%	Home infusion therapy, catheter care / maintenance, complex (mor
S3823	43	$ 17,630	0%	0%	Three-mutation brca1 and brca2 analysis for susceptibility to breast
S9366	7	$ 16,617	0%	0%	Home infusion therapy, total parenteral nutrition (tpn); more than or
Q9967	220	$ 16,292	2%	0%	
J1561	3	$ 16,142	0%	0%	
S0023	1,241	$ 13,504	14%	0%	Injection, cimetidine hydrochloride, 300 mg
S9351	15	$ 11,173	0%	0%	Home infusion therapy, continuous anti-emetic infusion therapy; ad

Common Non-Related Unclassified

CPT	Svcs	Cost	% Svcs	% Cost	Description
G0154	486	$ 102,197	10%	12%	Services of skilled nurse in home health setting, each 15 minutes
S9500	101	$ 78,919	2%	9%	Home infusion therapy, antibiotic, antiviral, or antifungal therapy; once e...
A9579	157	$ 59,613	3%	7%	
S9501	100	$ 56,586	2%	7%	Home infusion therapy, antibiotic, antiviral, or antifungal therapy; once e...
S0032	19	$ 34,446	0%	4%	Injection, nafcillin sodium, 2 grams
S0612	364	$ 32,932	8%	4%	Annual gynecological examination, established patient
T1030	246	$ 30,272	5%	4%	Nursing care, in the home, by registered nurse, per diem
S5001	110	$ 25,391	2%	3%	Prescription drug, brand name
S9975	75	$ 20,501	2%	2%	Transplant related lodging, meals and transportation, per diem
S5501	45	$ 17,250	1%	2%	Home infusion therapy, catheter care / maintenance, complex (more than
58571	11	$ 16,218	0%	2%	Laparoscopy, surgical, with total hysterectomy, for uterus 250 g or less; w
S0346	1	$ 16,209	0%	2%	Electrocardiographic monitoring utilizing a home computerized telemetry s
S9131	150	$ 15,966	3%	2%	Physical therapy; in the home, per diem
99070	318	$ 15,128	7%	2%	Supplies and materials (except spectacles), provided by the physician ove
G0151	65	$ 15,073	1%	2%	Services of physical therapist in home health setting, each 15 minutes
Q9967	167	$ 13,968	4%	2%	
J7321	61	$ 13,756	1%	2%	
S9494	46	$ 13,322	1%	2%	Home infusion therapy, antibiotic, antiviral, or antifungal therapy; admini...
J3488	7	$ 12,517	0%	1%	
99199	68	$ 11,748	1%	1%	Unlisted special service, procedure or report

Top 20 Related DME

CPT	Svcs	Cost	% Svcs	% Cost	Description
L8030	1,194	$ 349,332	9%	27%	Breast prosthesis, silicone or equal
L8000	1,951	$ 139,700	15%	11%	Breast prosthesis, mastectomy bra
A4222	678	$ 84,983	5%	7%	Infusion supplies for external drug infusion pump, per cassette or ba
E0791	999	$ 63,489	8%	5%	Parenteral infusion pump, stationary, single or multi-channel
E2402	10	$ 62,553	0%	5%	Negative pressure wound therapy electrical pump, stationary or por
L8020	349	$ 58,169	3%	4%	Breast prosthesis, mastectomy form
L8600	36	$ 49,504	0%	4%	Implantable breast prosthesis, silicone or equal
A4305	382	$ 45,710	3%	4%	Disposable drug delivery system, flow rate of 50 ml or greater per h
A4221	709	$ 44,978	5%	3%	Supplies for maintenance of drug infusion catheter, per week (list d
E0781	111	$ 33,831	1%	3%	Ambulatory infusion pump, single or multiple channels, electric or b
E1399	122	$ 31,426	1%	2%	Durable medical equipment, miscellaneous
A4649	546	$ 29,914	4%	2%	Surgical supply; miscellaneous
L8015	446	$ 28,898	3%	2%	External breast prosthesis garment, with mastectomy form, post ma
L8035	10	$ 25,414	0%	2%	Custom breast prosthesis, post mastectomy, molded to patient mod
A6543	176	$ 21,059	1%	2%	Gradient compression stocking, lymphedema
L8010	270	$ 18,744	2%	1%	Breast prosthesis, mastectomy sleeve
A4212	1,622	$ 18,702	12%	1%	Non-coring needle or stylet with or without catheter
A4230	38	$ 16,006	0%	1%	Infusion set for external insulin pump, non needle cannula type
L8499	45	$ 15,880	0%	1%	Unlisted procedure for miscellaneous prosthetic services
A4216	450	$ 13,729	3%	1%	Sterile water, saline and/or dextrose, diluent/flush, 10 ml

Common Non-Related DME

CPT	Svcs	Cost	% Svcs	% Cost	Description
E2402	279	$ 786,074	3%	39%	Negative pressure wound therapy electrical pump, stationary or portable
E1390	634	$ 124,870	7%	6%	Oxygen concentrator, single delivery port, capable of delivering 85 percent
A6550	85	$ 85,575	1%	4%	Wound care set, for negative pressure wound therapy electrical pump, inc
E0601	487	$ 72,421	6%	4%	Continuous airway pressure (cpap) device
E0652	32	$ 63,907	0%	3%	Pneumatic compressor, segmental home model with calibrated gradient p
E1399	164	$ 40,857	2%	2%	Durable medical equipment, miscellaneous
E0784	8	$ 35,700	0%	2%	External ambulatory infusion pump, insulin
A4253	294	$ 35,665	3%	2%	Blood glucose test or reagent strips for home blood glucose monitor, per 5
E0562	266	$ 26,350	3%	1%	Humidifier, heated, used with positive airway pressure device
A6253	18	$ 24,803	0%	1%	Specialty absorptive dressing, wound cover, pad size more than 48 sq. in.
E0935	19	$ 24,671	0%	1%	Continuous passive motion exercise device for use on knee only
A6021	12	$ 23,146	0%	1%	Collagen dressing, pad size 16 sq. in. or less, each
A7034	212	$ 20,332	2%	1%	Nasal interface (mask or cannula type) used with positive airway pressure
A4230	46	$ 18,085	1%	1%	Infusion set for external insulin pump, non needle cannula type
A6542	82	$ 17,194	1%	1%	Gradient compression stocking, custom made
A7000	61	$ 17,117	1%	1%	Canister, disposable, used with suction pump, each
E0471	7	$ 17,018	0%	1%	Respiratory assist device, bi-level pressure capability, with back-up rate ...
A4305	113	$ 14,155	1%	1%	Disposable drug delivery system, flow rate of 50 ml or greater per hour
E0431	405	$ 14,032	5%	1%	Portable gaseous oxygen system, rental; includes portable container, regu
L3000	53	$ 13,589	1%	1%	Foot, insert, removable, molded to patient model, 'ucb' type, berkeley shel

Top 20 Related E&M, Inpatient

CPT	Svcs	Cost	% Svcs	% Cost	Description
99223	21	$ 4,198	36%	32%	Initial hospital care, per day, for the evaluation and management of
99291	10	$ 3,145	17%	24%	Critical care, evaluation and management of the critically ill or critica
99222	5	$ 2,390	8%	18%	Initial hospital care, per day, for the evaluation and management of
99292	8	$ 1,335	14%	10%	Critical care, evaluation and management of the critically ill or critica
90819	4	$ 560	7%	4%	Individual psychotherapy, insight oriented, behavior modifying and/c
99221	5	$ 533	8%	4%	Initial hospital care, per day, for the evaluation and management of
99236	1	$ 265	2%	2%	Observation or inpatient hospital care, for the evaluation and mana
90816	3	$ 231	5%	2%	Individual psychotherapy, insight oriented, behavior modifying and/c
90826	1	$ 163	2%	1%	Individual psychotherapy, interactive, using play equipment, physica
90818	1	$ 115	2%	1%	Individual psychotherapy, insight oriented, behavior modifying and/c
92265			0%	0%	Needle oculoelectromyography, one or more extraocular muscles, c
94002			0%	0%	Ventilation assist and management, initiation of pressure or volume
94003			0%	0%	Ventilation assist and management, initiation of pressure or volume
99231			0%	0%	Subsequent hospital care, per day, for the evaluation and managen
99232			0%	0%	Subsequent hospital care, per day, for the evaluation and managen
99233			0%	0%	Subsequent hospital care, per day, for the evaluation and managen
99238			0%	0%	Hospital discharge day management; 30 minutes or less
99252			0%	0%	Inpatient consultation for a new or established patient, which requir
99253			0%	0%	Inpatient consultation for a new or established patient, which requir
99254			0%	0%	Inpatient consultation for a new or established patient, which requir

Common Non-Related E&M, Inpatient

CPT	Svcs	Cost	% Svcs	% Cost	Description
99291	37	$ 11,638	29%	41%	Critical care, evaluation and management of the critically ill or critically inju
99223	21	$ 4,198	16%	15%	Initial hospital care, per day, for the evaluation and management of a patie
99292	20	$ 3,838	16%	14%	Critical care, evaluation and management of the critically ill or critically inju
99222	8	$ 3,824	6%	13%	Initial hospital care, per day, for the evaluation and management of a patie
99233	10	$ 1,075	8%	4%	Subsequent hospital care, per day, for the evaluation and management of
99232	6	$ 656	5%	2%	Subsequent hospital care, per day, for the evaluation and management of
99221	6	$ 640	5%	2%	Initial hospital care, per day, for the evaluation and management of a patie
94002	3	$ 553	2%	2%	Ventilation assist and management, initiation of pressure or volume prese
99306	3	$ 394	2%	1%	Initial nursing facility care, per day, for the evaluation and management of
99255	1	$ 242	1%	1%	Inpatient consultation for a new or established patient, which requires thes
99231	4	$ 238	3%	1%	Subsequent hospital care, per day, for the evaluation and management of
94003	2	$ 207	2%	1%	Ventilation assist and management, initiation of pressure or volume prese
99252	2	$ 199	2%	1%	Inpatient consultation for a new or established patient, which requires thes
99254	1	$ 180	1%	1%	Inpatient consultation for a new or established patient, which requires thes
99253	1	$ 131	1%	0%	Inpatient consultation for a new or established patient, which requires thes
99431	1	$ 93	1%	0%	History and examination of the normal newborn infant, initiation of diagnos
99238	1	$ 89	1%	0%	Hospital discharge day management; 30 minutes or less
92265	1	$ 80	1%	0%	Needle oculoelectromyography, one or more extraocular muscles, one or
90816	1	$ 77	1%	0%	Individual psychotherapy, insight oriented, behavior modifying and/or supp
90819			0%	0%	Individual psychotherapy, insight oriented, behavior modifying and/or supp

Breast Cancer Provider Attribution

- Since the measure is claims-based and does not include clinical indicators of cancer stage, the work group thought physician attribution would be difficult and unrealistic.
- Breast Cancer is instead measured at the regional level.

Identifying Variability in Breast Cancer Treatment-specific Resource Use

- Analyses intended to identify trends in the observed variability in resource use for episodes of breast cancer management
- Variability measured at the following levels:
  - Region
  - State

Breast Cancer Treatment: Resource Use by Type of Service vs. Overall Mean, by Region

Description		Mean	South	NorthCentral	West	Northeast
N		6,796	2,976	1,579	1,092	554
OP Facility Costs	$	10,437	0.94	1.18	0.83	1.71
Evaluation and Management - IP	$	2	1.03	0.74	0.36	3.43
Evaluation and Management - OP	$	1,637	1.06	1.00	1.11	1.09
Radiation Therapy	$	5,496	1.13	0.96	1.10	0.79
Surgery - Lumpec/Mastec	$	1,085	1.11	1.06	1.05	1.11
Surgery - Other	$	2,402	1.22	0.93	0.90	1.03
Chemotherapy	$	18,204	1.25	0.94	1.09	0.69
Procedures	$	2,947	1.15	0.96	1.09	0.87
Imaging	$	1,870	1.04	0.89	1.36	1.02
Tests	$	1,965	1.12	0.98	1.02	0.98
Durable Medical Equipment	$	162	1.20	0.90	1.19	0.61
Other Services	$	1,069	1.39	0.82	0.81	0.74
Unclassified	$	852	1.12	0.96	1.00	1.29
Drug Charges	$	1,537	0.91	1.15	0.93	1.75
Total	$	52,776	1.07	0.94	0.96	0.97

Breast Cancer Treatment: Resource Use by Type of Service vs. Overall Mean, by State

Description	Mean	TX	CA	GA	MI	TN	FL	OH	IL	SC	NY
N	6,796	691	578	524	459	323	266	265	211	249	135
OP Facility Costs	$10,437	1.66	0.56	0.58	0.82	0.58	0.61	1.29	1.05	1.04	0.94
Evaluation and Management - IP	$ 2	0.13	0.69	4.06	0.83	1.80	0.00	0.00	3.48	0.00	14.07
Evaluation and Management - OP	$ 1,637	1.16	1.13	1.08	0.92	0.98	1.08	1.00	1.19	1.08	1.22
Radiation Therapy	$ 5,496	1.14	1.02	1.20	1.13	0.98	1.70	0.82	0.82	1.57	0.83
Surgery - Lumpec/Mastec	$ 1,085	1.16	0.99	1.14	0.91	1.16	1.10	1.29	1.24	1.05	1.39
Surgery - Other	$ 2,402	1.44	0.94	1.45	0.71	1.07	1.14	1.08	1.05	1.27	1.35
Chemotherapy	$18,204	1.24	1.22	0.97	0.91	1.19	0.85	0.78	0.90	3.27	0.78
Procedures	$ 2,947	1.19	1.27	1.23	1.02	1.02	1.07	0.83	0.98	1.66	1.05
Imaging	$ 1,870	1.15	1.33	0.65	0.96	1.29	1.32	0.63	0.81	1.00	1.20
Tests	$ 1,965	1.29	1.08	0.95	0.75	1.12	1.27	0.93	1.14	1.21	1.10
Durable Medical Equipment	$ 162	0.97	1.36	1.50	0.46	1.14	0.80	1.37	0.83	2.69	0.49
Other Services	$ 1,069	1.73	0.68	1.38	0.91	1.08	1.13	0.60	1.07	2.00	0.45
Unclassified	$ 852	1.57	0.73	1.04	0.72	0.68	1.38	1.24	1.19	0.12	1.14
Drug Charges	$ 1,537	1.11	1.06	0.70	1.76	0.93	1.32	0.88	0.88	0.61	2.24
Sum of costs	$52,776	1.34	1.03	0.96	0.93	0.99	1.00	0.94	0.98	1.93	0.99