OUT OF POCKET EXPENSES FOR BREAST CANCER SURVIVORS: DIFFERENCES BY TIME SINCE DIAGNOSIS IN A RURAL POPULATION
Paul M. Atienza A, McNespy F, Burkhart J, Menesses K
University of Alabama at Birmingham, Birmingham, AL, USA

OBJECTIVES: The out-of-pocket (OOP) expenses for care related to breast cancer can be burdensome for survivors. We know little about the kind and amount of OOP for survivors’ care, health maintenance and management of side effects. The objective is to report on expenses in 150 participants in the Rural Breast Cancer Survivor Intervention (RBCS), a clinical trial evaluating a psychoeducational quality of life intervention.

METHODS: Breast cancer survivors recruited for the trial were 1–3 years post diagnosis, at least 21 years old and residing in rural Florida. OOP data collected included: incurred expenditures for home care, hospital care, doctors’ bills, medical supplies, drugs, travel, treatment, physical therapy, Counseling and Health Maintenance (family or individual support, alternative treatments, nutritional counseling, exercise or gym/health club memberships, genetic testing/counseling, accounting for over 80% of the total health care costs attributable to mCRC). CONCLUSIONS: The economic burden of mCRC is substantial. Inpatient and outpatient care remain key cost drivers in the medical management of mCRC.

COST OF ILLNESS FOR PATIENTS WITH METASTATIC COLORECTAL CANCER
Song X, Zhao Z, Barber B, Gregory C, Cao Z, Gao S
Thomson Reuters Cambridge, MA, USA, Ainger, Inc Thousand Oaks, CA, USA, Thompson Reuters, Washington, DC, USA

OBJECTIVES: To estimate the cost of illness and assess the primary cost drivers of treating patients with newly diagnosed metastatic colorectal cancer (mCRC) after the introduction of biologic therapies.

METHODS: Patients newly diagnosed with mCRC between 2004-2008 were identified using three large national claims databases. A total of 1,049,003 cases were identified using national claims data. Cost was estimated by the cost difference between mCRC patients and their matched non-cancer controls. mCRC patients and controls were 1:1 matched on age, gender, geographic region, calendar year of diagnosis, and Deyo-Charlson Comorbidity Index. Total and component costs (inpatient, emergency room, outpatient, or pharmacy/ biologics) were analyzed. The multivariate, survival-based M1 model was used to estimate costs in order to handle a variable length of follow-up and data censoring issues.

RESULTS: A total of 6,746 mCRC patients met all eligibility criteria for the study. They were matched to patients without cancer, resulting in a 98.9% match rate and a final sample of 6,675 mCRC patients were included in this study. Mean (standard deviation) age was 64.1 (13.1) and 62.6 (14.1) for cases and controls, respectively, and 55.5% were males in both cohorts. Compared with matched patients without cancer, total monthly costs were $14,585 higher for mCRC patients, which was mainly driven by higher cost of inpatient ($7,346) and outpatient ($4,197) care, accounting for over 80% of the total health care costs attributable to mCRC. CONCLUSIONS: The economic burden of mCRC is substantial. Inpatient and outpatient care remain key cost drivers in the medical management of mCRC.

MORTALITY COSTS GENITAL CANCERS IN MEN—UNITED STATES, 2004
Uli C. Bowene DU, Rim SH, Tangka FK
Center for Disease Control and Prevention, Atlanta, GA, USA

OBJECTIVES: To estimate mortality costs measured as years of potential life lost (YPLL) and productivity loss in 2004 due to deaths from all cancers and genital cancers specifically among men in the US. METHODS: To estimate YPLL, we used 2004 national mortality data and life tables by multiplying the number of deaths and average remaining life years for specific age groups. To estimate lifetime productivity loss, we applied the human capital approach by multiplying the expected value of decedents’ future earnings estimated using the American Time Use Survey, accounting for both the market value and the imputed value of housekeeping services. We calculated results for age and racial/ethnic groups and for four categories of genital cancers. RESULTS: In 2004, the estimated lifetime productivity loss due to deaths from all cancers and non-Hispanic blacks had the highest YPLL rate (297,010,000 men). Overall, genital cancers had the highest relative contribution to YPLL among men aged ≥50 years compared to other age groups. In 2004, the estimated lifetime productivity loss due to deaths from male genital cancers was $5.4 billion, 5.7% of the estimated $97.9 billion loss due to deaths from all cancers among US men. Prostate cancer accounted for 94.2% of the YPLL, and testicular cancer accounted for the highest average number of YPLL per death (37.9). Non-Hispanic whites accounted for 75.9% of the YPLL from male genital cancer deaths, and non-Hispanic blacks had the highest YPLL rate (297,010,000 men). CONCLUSIONS: Male genital cancers impose a considerable health and economic burden in terms of premature deaths and productivity loss in the United States.

RETROSPECTIVE COST AND OUTCOME ANALYSIS OF BREAST CANCER PATIENTS TREATED IN A BRAZILIAN OUTPATIENT CANCER CENTER (OCC)
Teich N1, Souza CPR1, Teich V1, Centra M1, Musacchio JG2, Vieira FM1
MedMixtango, Rio de Janeiro, Rio de Janeiro, Brazil, 1Câncer—Câncer Oncológicos Integrados, Rio de Janeiro, Rio de Janeiro, Brazil

OBJECTIVES: To determine the cost and outcome related to breast cancer patients treated in a Brazilian OCC in Rio de Janeiro, Brazil. METHODS: This is a retrospective study of women with breast cancer treated at a private practice OCC in Rio de Janeiro, Brazil. All the patients were covered by Amil, a Brazilian HMO. Direct costs (DC) of 199 patients diagnosed since 2002 and followed to the end of 2009 were analyzed and correlated to clinical stage. We used Kaplan-Meier method to analyze patients’ outcome. RESULTS: Forty-eight percent of women were diagnosed in stage I, 34% patients in stage II, and only 2.5% were diagnosed in stage IV, similar numbers to those seen in developed countries. The average DC of their medical care per patient was 21,658.94 USD for stage I compared to 48,295.29 USD for stage II, and were 63,662.06 USD for stage III and 63,697.33 USD for stage IV. We also observed that DC per patient-rear increased according to clinical stage. In the first year, average cost was 15,183.85 USD for stage I, while it was 44,160.74 USD for stage IV. Those DC decreased along the years in all stages. For example, in the seventh year of follow-up, the average DC was only US$ 467.27 for stage I (2005 purchasing power index 1 USD = 1.8 BRL). The 5-year overall survival and progression free survival were 100% and 100% for stage I, 92.2% and 91.9% for stage II, 87.5% and 82.1% for stage III, and 60% and 60% for stage IV, respectively. CONCLUSIONS: Breast cancer accounts for a significant part of the health insurance budget. Later stage at diagnosis is associated with higher DC per patient-year of treatment, and lower probability of 5-year survival.

HEALTH CARE COST OF BREAST CANCER: A CLAIMS DATA ANALYSIS
Fu AZ, Chen L2, Christiansen NP, Sullivan SD4
Cleveland Clinic, Cleveland, OH, USA, 2Sanofi-Aventis, Bridgewater, NJ, USA, 3Medical University of South Carolina, Charleston, SC, USA, 4University of Washington, Pharmaceutical Outcomes Research and Policy Program, Seattle, WA, USA

OBJECTIVES: There is a paucity of updated literature on the total direct costs of breast cancer (BC) from a US managed care perspective. This study was conducted to analyze the economic burden of BC with a focus on direct health care cost in the US. METHODS: This was a retrospective matched cohort study using a large claims

PCN35

PCN36

PCN37

PCN38

PCN39

PCN40

PCN41
database from a US nationally commercialized-insured population (January 1, 2003-Sep-
tember 30, 2008). Women aged ≥18 were selected with ≥2 BC diagnoses on different
dates within 90 days. The date of the first BC diagnosis was the index date for case
cohort. The control cohort (without BC diagnosis) was selected with 1:1 matching to
cases based on index date (same year and month), age (±5 years range), region, employer, and health insurance type. Both cohorts were required to have continuous enrollment for at least 6 months prior to and 12-months after the index
date. Generalized linear model (GLM) was applied to evaluate the 1-year post-index
cost difference between cases and controls with the adjustment of demographics, pre-
indication criteria, and pre-index total health care cost. RESULTS: Based on the selection
criteria, 140,228 patients were included with mean (SD) age of 52.1 (7.5) years. The
total 1-year health care costs for cases and controls were $61,167 and $6,296, respec-
tively (p < 0.001). GLM predicted that the adjusted incremental health care cost was
$42,401 (p < 0.001) per BC patient per year, which included 12%, 96%, and 2% for
inpatient, outpatient, and prescription use. CONCLUSIONS: This study demonstrated
that breast cancer is an expensive disease condition, which consumes on average
$40,000 more per patient than the first year of diagnosis for the US health care
system. Most of the direct health care cost is spent in outpatient care settings.

PCN42

DIRECT COST ASSOCIATED WITH BREAST CANCER TO
US EMPLOYERS
Fu AZ1, Chan LI, Christiansen NP2, Sullivan SD1
1Cleveland Clinic, Cleveland, OH, USA, 2Sanofi-Aventis, Bridgewater, NJ, USA, 3Medical
University of South Carolina, Charleston, SC, USA, 4University of Washington, Seattle, WA, USA
OBJECTIVES: Few data exist on the impact of breast cancer (BC) on absenteeism and
short-term disability (STD) to employers. This study was undertaken to estimate BC
related indirect cost impacts within the US population. METHODS: This was a ret-
rospective matched cohort study using a large health care claims database from a US
national commercially-insured population (2003–2007). Women aged ≥18 were
selected with ≥2 BC diagnoses on different dates within 90 days. The date of the first
BC diagnosis was the index date for case cohort. The control cohort (without BC
diagnosis) was selected with 1:1 matching to cases based on index date (same year
and month), age (±5 years range), region, employer, and health insurance type. Continu-
ous enrollment for at least 6-months prior to and 12-months after the index date was
required for both cohorts. Indirect cost was measured by days of absenteeism and
STD, multiplied by age-matched average wage rates from Bureau of Labor Statistics.
Two-part model was used to assess the 1-year post-index indirect cost difference between
cases and controls with the adjustment of demographics, comorbidity condi-
tions, and pre-index total health care cost. RESULTS: Based on the inclusion criteria, 856
and 2668 patients were selected for absenteeism and STD outcomes, respectively.
Costs of absenteeism were $4972 and $2937, and costs of STD were $7199 and $635 for
cases and controls, respectively, within the post-index (both p < 0.001). Two-
part model predicted that the adjusted incremental costs for absenteeism and STD
were $1911 and $6157 (p < 0.001) per BC patient per year. CONCLUSIONS: This study demonstrated
that breast cancer is associated with approximately $8000 more in indirect cost per patient to the employer within the first year of diagnosis.

PCN43

INITIAL COSTS OF TREATMENT AMONG STAGE IV PROSTATE
CANCER (PCA) CHEMOTHERAPY PATIENTS IN SEER-MEDICARE
Olokwu IG1, Mullins CD2, Seal B1, Hussain A1
1University of School of Pharmacy, Baltimore, MD, USA, 2Sanofi-Aventis Pharmaceuticals, Bridgewater, NJ, USA, 3University of Maryland School of Medicine, Baltimore, MD, USA
OBJECTIVES: Little is known about how resource utilization in the initial treatment
period among advanced stage PCA patients differs between those receiving versus those
not receiving chemotherapy, even for docetaxel, the earliest approved agent for meta-
static disease. METHODS: We analyzed patients aged 66 or older from the linked
Surveillance, Epidemiology, and End Results & Medicare (SEER-Medicare) database.
Patients were diagnosed with PCA between 2000 and 2005 and were followed until
censoring. We restricted the cohort to patients with incident Stage IV disease (AJCC-
TNM classification) and at least 24 months of post-diagnosis follow-up data. Initial
costs (Medicare payments) were defined as costs incurred from 2 months before
diagnosis to 12 months post-diagnosis and patients were stratified according to whether
they received chemotherapy, and subsequently whether they received docetaxel.
RESULTS: Application of the inclusion criteria resulted in 4,088 Stage IV PCA patients,
of which 21% (N = 933) reported chemotherapy. Among chemotherapy users, 63%
(N = 592) received docetaxel-containing regimens. Initial costs totaled $78.3M while
PCA-specific initial costs totaled $49.5M. For the full sample (F), chemotherapy
subsample (C), and no chemotherapy subsample (NC), the proportions of total costs
attributed to PCA-specific inpatient costs (IC), non-PCA-specific IC, PCA-specific out-
patient costs (OC), non-PCA-specific OC, and other costs were distributed as follows:
1) PCA-specific IC: F = 26.5% [$20.7M], C = 21.4% [$16.0M], NC = 27.5% [$19.0M];
2) non-PCA-specific IC: F = 12.3% [$9.7M], C = 10.3% [$2.1M], NC = 13.1% [$7.6M];
3) PCA-specific OC: F = 35.9% [$28.1M], C = 42.1% [$5.1M], NC = 33.8% [$19.6M];
4) non-PCA-specific OC: F = 20.8% [$16.3M], C = 22.5% [$4.5M], NC = 20.1% [$3.4M].
F: overall costs: F = 4.5% [$3.5M], F: chemotherapy costs: F = 1.7% [$1.0M]. The propor-
tion of PCA-specific outpatient costs was higher in the docetaxel
subsample compared to the chemotherapy subsample. CONCLUSIONS: Among patients
diagnosed with advanced disease, PCA-specific inpatient and outpatient costs
accounted for two-thirds of Medicare payments, with PCA-specific outpatient costs
gaining larger shares in the chemotherapy and docetaxel subsamples.

PCN44

ASSESSMENT OF HEALTH CARE UTILIZATION AND COST AMONG
METASTATIC MELANOMA PATIENTS IN A US MANAGED CARE
POPULATION
Ray S1, Gangui A2, Luo Y1, Xu Y1
1Cleveland Clinic, Cleveland, OH, USA, 2Parkland Health and Hospital System, Dallas, TX, USA
OBJECTIVES: Metastatic Melanoma (MM) is associated with serious clinical and
humanistic burden. This study calculated the cost and medical resource utilization attributable to MM in a large geographically diverse commercially insured US popula-
tion. METHODS: The MEDSTAT MarketScan® database included identified patients aged ≥18 years with ≥2 melanoma claims (ICD-9-CM 170.xx, 190.xx, or 216.xx) from July 1, 2005 to June 30, 2007, no cancer claims in the year prior to the first HCC claim (index), and a full year of pre-index data. Per patient per month (PPP) costs estimates were compared pre- and post- diagnosis with a sign rank test. RESULTS: The analyti-
cal dataset included ≥440 patients: mean age 53 years, 61% male, mean follow-up 256

PCN45

HEALTH CARE RESOURCE UTILIZATION (HRU) IN ADVANCED
OVARIAN CANCER-FINDINGS FROM LINKED SEER-MEDICARE DATA
Parthan A1, Geo SK2, Song R1, Borker R3, Langberg WJ, Teitelbaum A1, Oglesby A3
1Inova, San Francisco, CA, USA, 2Amgen, Inc, Thousand Oaks, CA, USA, 3Inova, Care Ventures, Reston, VA, USA
OBJECTIVES: To estimate the health care costs, treatment patterns, and health care
resource use in advanced ovarian cancer (aOC) patients receiving first line chemo-
therapy. METHODS: Incident aOC patients between 2000–2003 were identified from the
linked Surveillance, Epidemiology and End Results (SEER/Medicare data file using
an ICD-9 code 56.9 with a “distant” tumor in the SEER staging variable. Women
≥18 years, had ≥1 melanoma claim and ≥1 chemotherapies. After excluding patients with
≥1 HCC claim (ICD9 155.0) from July 1, 2005 to June 30, 2007, no cancer claims in the year prior to index
(date of the first BC diagnosis), and a full year of pre-index data were stratified according
to whether they received chemotherapy, and subsequently whether they received docetaxel.
RESULTS: The analyti-cal dataset included ≥440 patients: mean age 53 years, 61% male, mean follow-up 256

PCN46

FIRST YEAR INSURER AND PATIENT COSTS ASSOCIATED WITH
HEPATOCELLULAR CARCINOMA DIAGNOSIS IN THE U.S. MANAGED
CARE POPULATION
Tong W, Ray S1
1Abbott Laboratories; Abbott Park, IL, USA
OBJECTIVES: To evaluate insurer and patient cost increases during the first year
following hepatocellular carcinoma (HCC) diagnosis. METHODS: Subjects in the Medstat MarketScan® claims database (July 1, 2005–June 30, 2008) were included for analysis if they were age ≥18 years, had ≥1 HCC claim (ICD-15.5) from July 1, 2006 to June 30, 2007, no cancer claims in the year prior to the first HCC claim (index), and a full year of pre-index data. Per patient per month (PPP) costs estimates were compared pre- and post- diagnosis with a sign rank test. RESULTS: The analyti-cal dataset included ≥440 patients: mean age 53 years, 61% male, mean follow-up 256