approval. **RESULTS:** PMW who initiated RLX following the IBCRR approval versus before approval were less likely to be in the 50–54 age group compared to all other age groups (Adjusted Odds Ratio [AOR] = 1.594 [age 55–59], 1.812 [age 60–64], 1.667 [age 65–69], 1.782 [age 70+]). RLX initiators were more likely to have a lower CDS after the IBCRR approval vs. before approval (medium AOR = 0.795 [Confidence Interval (CI): 0.711, 0.889], high AOR = 0.71 [CI: 0.626, 0.805]). After the IBCRR approval, RLX initiators had a greater likelihood of having a code for family history of BC in the claims database (AOR = 1.761 [CI: 1.213, 2.556]) compared to RLX initiators before approval. PMW who initiated RLX after IBCRR approval did not differ significantly from those who initiated before approval with regard to mammograms, fractures, BMD screening, and provider specialty. **CONCLUSIONS:** PMW who initiated RLX after the IBCRR approval were more likely to be older, have a lower CDS, and have a family history of BC compared with RLX initiators before approval. Factors such as mammograms, fractures, BMD screening, and provider specialty did not differ before and after the IBCRR approval.

PCN148

YEAR ONE EVALUATION OF PARTICIPATION AND COMPLIANCE IN REGIONAL PAY FOR QUALITY (P4Q) ONCOLOGY PROGRAM

Fortner B[1], Wong W[2], Olson T[3], Scott J[4]
[1]P4 Healthcare LLC, Ellicott City, MD, USA, [2]CareFirst BlueCross BlueShield, Baltimore, MD, USA, [3]P4 Healthcare, Minneapolis, MN, USA, [4]P4 Healthcare LLC, Ellicott City, MD, USA

OBJECTIVES: The objective of this study was to evaluate the extent to which oncologist would participate and comply with a P4Q program employing clinical pathways. **METHODS:** A P4Q program was enacted in five northeastern states, USA, beginning August 1, 2008, and consisted of physician generated treatment (i.e. breast, lung, and colon-rectal cancer) and supportive care pathways (i.e. colony-stimulating factors, erythropoietin stimulating agents, and antiemetics). Practices were informed of the program three months in advance and allowed to sign up for the program prior to and during the first year of the program. Feedback was provided to participants regarding compliance, and increased fee schedules in year 1 were adjusted in year 2 contingent on compliance in year 1. Compliance was measured through the claims submitted by participating practices on cancer patients starting a new line of therapy after August 1, 2008. Compliance was defined by provision of a drug or regimen not according to the defined pathway. **RESULTS:** A total of 362 physicians were eligible for participation (174 community based; 34 hospital based; 154 academic based). 49% of all physicians, 88% of community based, 44% of hospital based, and 6% of academic physicians signed up to participate in the program. 2,119 cancer patients were eligible for compliance analysis. Overall 85.9% of patients were judged compliant to treatment pathways (90.5% breast, 90.9% colon, 72.3% lung). Overall 95.4% of patients were compliant to supportive care pathways (100% CSF, 98.6% ESAs, 91.3% antiemetics). **CONCLUSIONS:** This study suggests high levels of compliance with clinical pathways may be achieved. Participation varied greatly by practice type. Additional analysis should consider evaluation of alternate definitions of compliance (e.g. errors of omission rather than commission) and reasons for non-participation (e.g. overlap of compliance with potential financial advantage of participation).

PCN149

ELECTRONIC MEDICAL RECORDS: QUALITY CANCER CARE AND COST-EFFECTIVENESS

Colosia AD[1], Peltz G[2], Pohl G[2], Liu E[2], Kaye JA[3], Khan S[1]
[1]RTI Health Solutions, Research Triangle Park, NC, USA, [2]Eli Lilly and Company, Indianapolis, IN, USA, [3]RTI Health Solutions, Waltham, MA, USA

OBJECTIVES: Quality of care for cancer may improve with information technology products such as ELECTRONIC MEDICAL RECORDS (EMR). The objectives of this study were 1) to identify aspects of value of EMR use to providers in assessing and improving quality cancer care and 2) to identify issues in cost-effectiveness of EMR from the provider perspective. **METHODS:** A systematic literature review regarding perceptions of the quality of cancer care in the United States was conducted in PubMed, EMBASE, and Cochrane Reviews for the last 10 years, English only articles. Oncology medical subject heading (MESH) terms were cross-matched with quality of care MESH terms to obtain 875 abstracts. Of these, 140 publications were selected for full-article review based on defined inclusion/exclusion criteria. **RESULTS:** Reports of EMR use among hospitals, hospital networks (for example, Veterans Hospital Administration), and moderately sized oncology practices indicated that providers rapidly obtained information on guideline adherence and determined whether patients received follow-up in physician offices. Cost savings were incurred across multidisciplinary teams because fewer tests were duplicated. Business management costs for billing were reduced. Other cost savings were lower labor costs due to reduced need for medical records staff, and staff to provide information among caregivers and to direct patient flow. Cost effectiveness was variable for small physician practices, with some providers recovering the cost of the EMR system and others incurring serious financial problems as a result of implementing EMR use in their practices. **CONCLUSIONS:** EMR may be financially challenging for some small physician practices. However, it can assist providers in assessing whether their patients are receiving guideline-adherent care and aid in more efficient processes of care, thereby improving overall quality of cancer care.

PCN150

TRENDS IN USAGE AND UPTAKE OF TARGETED CANCER THERAPIES VERSUS CHEMOTHERAPIES

Aggarwal S[1], Stevens CA[2]
[1]PAREXEL Consulting, Bethesda, MD, USA, [2]PAREXEL Consulting, Waltham, MA, USA

OBJECTIVES: The oncology market has become one of the major focus areas for pharmaceutical and biotech firms. As of March 2009, 15,752 of 39,747 Phase I,II, and III trials listed on clinicaltrials.gov, were related to cancer (approximately 40%). This large interest in oncology stems from market success of cancer therapies launched in the past decade and the existence of high unmet need to treat different types of cancers. As the number of FDA approved cancer therapies increases there is a need to understand treatment patterns of these cancer drugs. **METHODS:** To understand the trends in usage and sales of cancer therapies we analyzed the US market (sales and prescription) 2005–2008 data for all FDA approved cancer drugs. Drugs were categorized as targeted cancer therapies, chemotherapies, monoclonal antibodies, small molecules, branded and generics. **RESULTS:** During the past five years the usage of both targeted cancer therapies and chemotherapy drugs has increased by high double digit rates. From 2005–2008, the total prescriptions for targeted cancer therapies and chemotherapies increased by 66% and 30%, respectively. While the sales of both types of these drugs are expanding, the majority of sales growth is attributed to an increasing uptake of targeted cancer drugs. The sales share of targeted cancer therapies in the US oncology market increased from 36% in 2004 to 56% in 2008. Among targeted cancer therapies, majority (more than 75%) of uptake belongs to monoclonal antibodies. **CONCLUSIONS:** The usage and sales trends show a significant increase in the use of cancer drugs. The high usage of targeted cancer therapies versus chemotherapies shows the rapidly changing nature of cancer treatment regimen.

PCN151

CLINICAL AND SOCIO-DEMOGRAPHIC DETERMINANTS OF PRIMARY PROPHYLACTIC G-CSF USE IN ELDERLY BREAST CANCER MEDICARE BENEFICIARIES RECEIVING CHEMOTHERAPY

Rajan SS[1], Lyman G[2]
[1]University of Houston, Houston, TX, USA, [2]Duke University, Durham, NC, USA

OBJECTIVES: Systemic chemotherapy is a vital component of breast cancer management but early-onset toxicities like neutropenia hinder its administration. Primary prophylactic (PP) use of granulocyte-colony stimulating factors (G-CSF) helps prevent neutropenia and ensures successful chemotherapy completion. Nevertheless, lack of specific guidelines for G-CSF administration in the elderly has lead to unexplained geographic and racial, and counter-intuitive clinical variations. For example, older individuals with higher co-morbidities (at higher neutropenia risk) have lower probability of G-CSF receipt. This study examined the reasons for these variations and for the first time looked at variations in PP administration in breast cancer patients. **METHODS:** A retrospective observational study of newly diagnosed breast cancer patients receiving chemotherapy was performed using the 1994–2003 SEER-Medicare data. Univariate analyses and multi-variate logistic regressions were used to explore the determinants of PPG-CSF administration. Previously unexplored clinical and therapeutic characteristics (e.g. chemotherapy characteristics before the administration of PPG-CSF) were also included. **RESULTS:** Univariate analyses demonstrated geographic, racial and clinical disparities similar to previous studies. However, multivariate analyses revealed that controlling for chemotherapy characteristics (type and number of drugs and between cycle duration) made the correlation of age and other clinical characteristics with PPG-CSF administration insignificant. Significant geographic and racial disparities existed. Exploration of geographic variations suggested that regions with higher rates of PPG-CSF administration have higher proportion of physicians administering them; none of the physicians using PPG-CSF administered it on a significantly higher proportion of their patients. **CONCLUSIONS:** Physicians' decision to administer PPG-CSF is predominantly driven by neutropenia risk associated with pre-planned chemotherapy regimen. Older, sicker women at a higher risk of neutropenia received less intense/toxic chemotherapy thus did not require PPG-CSF. Geographic variations are driven by provider-level variations in PPG-CSF administration with no evidence for overuse among the providers. Racial and geographic disparities have no clinical basis and are a matter of concern.

PCN152

TREATMENT PATTERNS IN ADULT PATIENTS WITH METASTATIC RENAL CELL CARCINOMA IN THE UNITED STATES

Gao SK[1], Boer R[2], Oglesby A[3], Lalla A[2], Yu HT[2], Langeberg WJ[1], Calimlim B[2], Borker R[1]
[1]Amgen, Inc., Thousand Oaks, CA, USA, [2]Cerner LifeSciences, Beverly Hills, CA, USA, [3]Amgen, Thousand Oaks, CA, USA

OBJECTIVES: To examine the prescribing patterns of the recommended pharmacologic treatments for metastatic renal cell carcinoma (mRCC). **METHODS:** A retrospective claims-based analysis was conducted that identified incident mRCC patients (18–64 years) in the Thomson Reuters MarketScan Commercial Claims Database (January 2005–September 2008). Patients were required to have at least 6 months of continuous enrollment before the index date (first metastases claim) and at least 30 days of continuous enrollment after the index date. Treatment patterns were described as proportions of mRCC patients receiving the following guideline-recommended pharmacologic agents: immunotherapies (interferon-alpha and interleukin-2) and the newer targeted agents (sunitinib, sorafenib, bevacizumab, temsirolimus and everolimus), either as initial or second-line therapies any time on or after the index date. **RESULTS:** A total of 1390 patients with mRCC were included in the analysis. Mean age was 55.6 years and 70.5% were male. The mean continuous enrollment after diagnosis of metas-

tasis was 10.9 ± 8.9 months. The percentages of patients receiving at least one of these therapies increased from 10.5% in 2005 to 74% in 2008. Sunitinib use showed consistent increase from 0% in 2005 to 50% in 2008. Sorafenib with zero use in 2005 increased to 25% in 2006 but decreased thereafter to 11.7% in 2008. Interferon-alpha (range: 5–8%) and bevacizumab (range: 2–4%) use remained relatively stable during the observation period, whereas interleukin-2 and temsirolimus was used rarely (≤1%) and everolimus not used at all. **CONCLUSIONS:** Pharmacologic agents were increasingly used to treat mRCC patients in recent years. Targeted therapies have become the main modality of treatment, with sunitinib accounting for most of the growth.

PCN153

TREATMENT PATTERNS OF MEXICAN ONCOLOGISTS IN FIVE DIFFERENT MALIGNANCIES: A SURVEY

Tenorio-Téllez LMC[1], Vargas-Valencia J[2], Martínez-Fonseca J[2], Sotelo-Guzmán M[2], Mould-Quevedo JF[3]

[1]Instituto Nacional de Cancerología, Mexico City, Mexico, Mexico, [2]Econopharma Consulting S. A. de C. V., Mexico City, Mexico, Mexico, [3]Pfizer S.A. de C.V., México City, Mexico

OBJECTIVES: There is no evidence about real medical practice in oncology in Mexico. The objective of this study was to explore current medical practices of Mexican oncologists in the management of five malignancies: breast, non-small cell lung (NSCL), colon, rectum and kidney cancer. **METHODS:** A specific instrument for these malignancies was designed, validated and applied to Mexican oncologists. Information requested reflects stage-specific treatment and disease management, including surgery and drugs uses, as well as frequency of prescription, discontinuation and factors that determines them in public and private health care institutions, between January-April 2009. **RESULTS:** 30 oncologists were included: 63.3% from Instituto Mexicano del Seguro Social and 20.0% from Instituto Nacional de Cancerología. 73.3% of all oncologists have public and private practices. Tamoxiphen (adjuvant hormonoterapy) and 5-fluoroacil/epirubicin/cyclophosphamide (adjuvant, neoadjuvant and palliative chemotherapy) are the most frequently drug schemes used in breast cancer, with no differences between public and private practices($p < 0.05$). At least 85.0% of NSCL cancer cases are diagnosed in IIIA and IV stages; combination chemotherapy (platinum/etoposide) is highly prescribed in NSCL cancer patients undergoing radiotherapy or non-resectable disease. Colon cancer is diagnosed in stages III(58.0%) and IV (14.0%); 20.0% of colon cancer patients undergoes surgery (left or right hemicolectomy). Drug availability and medical guidelines recommendations drive prescription to treat colon cancer. Surgery in rectum cancer is applied at stages IIB, IIIA and IIIB (17.6%, 20.0% and 16.9%, respectively). Rectum cancer presents as non-resectable disease in 60.0% of cases in stage IV. Drugs used to treat metastatic renal cells cancer are interferon-α (80.0%) and sunitinib(19.0%), prescription is driven by drug availability and efficacy, respectively. Discontinuation rate of interferon-α due adverse event was 90.0%. **CONCLUSIONS:** Knowledge of oncology current medical practice provides a basis for evaluation, as well as supports decision making process and the generation of new strategies for policy makers.

PCN154

COLORECTAL CANCER HOSPITAL ADMISSIONS IN WEST VIRGINIA FROM 2003 TO 2007

Shah N, Halverson J

West Virginia University, Morgantown, WV, USA

OBJECTIVES: Colorectal cancer (CRC) is the third most common form of cancer in men and women in West Virginia. Hospitalization followed by surgical resection is the standard curative treatment. The aim of this study is to examine colorectal cancer hospitalizations and common comorbidities and evaluate associated outcomes during 2003–2007 in West Virginia. **METHODS:** Data from the Healthcare Cost and Utilization Project (HCUP), State Inpatient Database were investigated. Comorbidities were identified using comorbidity software provided by HCUP. Descriptive statistics for hospitalizations with a primary or secondary diagnosis of CRC were tabulated. Multivariate regressions were used to compare for differences in the outcomes including length of stay, total charges, and in-hospital deaths. **RESULTS:** There were 6919 admissions with a primary or secondary diagnosis of CRC of which 27.4% were emergency admissions. The most common comorbidity was diabetes (18.5%), followed by COPD and hypertension (both 3.7%). Volume depletion disorder (3.5%) followed by pneumonia (2.4%) and malignant neoplasm of the liver (2.3%) were the most common primary diagnoses seen when CRC was the secondary diagnosis. Mean length of stay was significantly higher for admissions with a primary diagnosis (9.2 days versus 4.8 days, $p < 0.001$). Mean total charges were also higher for primary diagnosis (28,618.94 USD versus 12,195.22 USD, $p < 0.001$). For the 356 (5.1%) in-hospital deaths, emergency admissions had odds ratio (OR) of 2.50 (95% CI, 2.01–3.10), and primary diagnosis of CRC had OR of 1.64 (95% CI, 1.30–2.08). Admissions with comorbid diabetes formed 12.6% (45) of patients who died in the hospital. **CONCLUSIONS:** Significant resources are consumed by CRC hospital admissions. A large percentage of CRC hospitalizations are emergency admissions indicating advanced disease and possibly failure of timely screening. Diabetes was the most common comorbid condition and further investigation in diabetics is needed to check screening behavior and access to screening centers.

PCN155

TREATMENT PATTERN OF METASTATIC TRIPLE NEGATIVE BREAST CANCER IN COMMUNITY PRACTICE

Christiansen NP[1], Chen L[2], Chung H[3], Zhao L[4], Sullivan SD[5]

[1]Medical University of South Carolina, Charleston, SC, USA, [2]Sanofi-Aventis, Bridgewater, NJ, USA, [3]Rutgers University, Piscataway, NJ, USA, [4]eTeam. Inc, South Plainfield, NJ, USA, [5]University of Washington, Pharmaceutical Outcomes Research and Policy Program, Seattle, WA, USA

OBJECTIVES: Triple negative (TN) breast cancer (BC), a subtype of BC characterized by its unique molecular profile and aggressive clinical behavior, lacks satisfactory standard therapies. Little is known about how patients with TNBC were treated in community practice. This study was conducted to identify treatment patterns of first-line chemotherapy (CT) of TNBC using data from community practices. **METHODS:** Analyses were conducted using the Georgia Cancer Specialist Database (GCSD 2003–2008) and the International Oncology Network's Treatment and Outcomes Database (ION 2003–2008). In both data, patients with stage IV TNBC were selected and followed for up to one year since initial diagnosis. The first-line CT was identified if 1) the first drug was initiated within 120 days following the initial BC diagnosis; 2) other combination drugs be started within 30 days of the first drug. **RESULTS:** The study included 30 and 35 patients from GCSD and ION, respectively. In GCSD sample, 14 patients (47%) were treated with monotherapy, capecitabine and taxanes being dominant (50% and 43%, respectively); 16 patients treated with combination therapy, with carboplatin/gemcitabine+paclitaxel (C/G+P) and cyclophosphomide+doxorubicin (CP+DOX) most frequently used regimens or backbone therapies (31% for each). Other drugs used in combination included docetaxel, bevacizumab, 5-FU and albumin-bound P. Similar patterns were found in ION sample with some deviations: 20 patients (57%) treated with monotherapy, taxanes being dominant (70%); 15 patients treated with combination therapy, C/G+P and CP+DOX/+epirubicin were the most frequently used regimens or backbone therapies (33% for each). Other drugs used in combination included docetaxel, 5-FU, bevacizumab, lapatinib and methotrexate. **CONCLUSIONS:** It appears that taxanes/capecitabine, and C/G+P or CP+DOX were mostly used monotherapy and combination therapy, respectively, for stage IV TNBC. The patterns are rather diverse than convergent, reflecting lack of standard therapy for TNBC. Data from other community settings are needed to confirm these results.

CANCER – Conceptual Papers & Research on Methods

PCN156

IMPROVING ASCERTAINMENT OF VITAL STATUS USING SOCIAL SECURITY DEATH MASTER FILE (SSDMF) AND THE NATIONAL DEATH INDEX (NDI)

Stevinson K[1], Ma L[2], Moore KR[3], Burke T[4]

[1]Rutgers University, Piscataway, NJ, USA, [2]Global Outcomes Research, Merck & Co., Inc., West Point, PA, USA, [3]i3 Pharma Informatics, Harrisburg, PA, USA, [4]Merck & Co., Inc., Whitehouse Station, NJ, USA

BACKGROUND: Ascertainment of vital status is critical to studies in many disease areas especially in oncology. Two commonly used sources for mortality are SSDMF and NDI, with NDI considered the gold standard. Limitations identified in previous studies are under-ascertainment associated with the former; time lag (1–2 years) and higher cost associated with the latter. OBJECTIVES: To compare ascertainment of vital status by consolidating mortality data from SSDMF and NDI vs. either source alone. METHODS: Patient identifiers for a cohort of 3761 cancer patients from a large US claims database were submitted to SSDMF (cutoff February 2009) and NDI (cutoff December 2007) to obtain vital status. Matching to SSDMF utilized SSN alone or a combination of last name, first name and birthdate. Matching to NDI utilized combinations of SSN and/or patient name, birthdate, and state of residence. For patients with a death date found in NDI, a variable indicating a true or false match was provided by NDI based on the probabilistic score. We derived the death date via a stepwise approach by utilizing all match results from either source. RESULTS: Of 3761 patients, SSDMF returned a match for 901 (24%) patients using SSN alone, and 1088 (29%) patients using the combination. From the NDI, 946 (25%) patients had a "true" match, 1408 (37%) had a "false" match, and remainder were considered alive. Comparing SSDMF and NDI results utilizing both true and false NDI matches, we derived death dates for 1326 patients, which is 47% and 40% more compared to SSDMF match by SSN alone or NDI true match, respectively. Eight patients had claims following death date and were considered false matches. CONCLUSIONS: Utilizing all match results from SSDMF and NDI identified significantly more deceased patients compared to either source alone. Misclassification of living patients as deceased appears minimal as verified by claims.

PCN157

METHODOLOGIC ISSUES OF IDENTIFYING FEBRILE NEUTROPENIA PATIENTS USING MEDICAL CLAIM DATA

Michels SL[1], Barron R[2]

[1]United BioSource Corporation, Lexington, MA, USA, [2]Amgen, Thousand Oaks, CA, USA

Febrile neutropenia (FN) is a condition that develops in cancer patients treated with myelosuppressive chemotherapy characterized by fever and very low neutrophil counts, in general signaling infection. Utilizing claims data can provide a real-world perspective on the epidemiology, treatment, outcomes, and costs associated with FN in cancer patients. However, identifying true cases of FN in claims data can be prob-