Women who were 240 years of age on January 1st and 564 years of age on December 31st of each year were extracted. Participants with a diagnosis of breast cancer or another abdominal breast findings were excluded from the analyses using appropriate ICD-9 codes (174.XX, 233.0X, 238.3X, 239.3X). Data for women with claims for screening mammography at a time during each calendar year were extracted using following CPT code: 76926. Results were reported by age group (40-49 years, 50-59 years, and 60-64 years), race (White, Black, and others), county of residence, and geographic area (metro, non-metro urban, non-metro rural) for each calendar year. RESULTS: There was an estimated 12% increase in the screening mammography between 2000 and 2005. A consistent increase in the mammography screening was observed during study period (2000-2005) among women who were 50–59 years of age as compared to those between 40-49 and 60-64 years of age. Approximately 90% women who undertook cancer mammography resided in either metro or non-metro urban areas.

CONCLUSIONS: Screening mammography trends differed among women based on demographic characteristics. Further research is needed to evaluate accessibility and knowledge among indigent women in order to develop effective breast cancer prevention strategies.

HEALTH WORKERS’ WORK ENVIRONMENT SATISFACTION IN ONCOLOGIC SERVICES AT THE SOCIAL SECURITY MEXICAN INSTITUTE

Condes-Castro, Beatriz; Balderrama-Pérez LMA; Mould-Quedos J; Ruíz-Durán MDR; Garduño-Espinosa J; Davila-Loaiza G; Morgan-Villalba G

Social Security Mexican Institute, Mexico City, Mexico; Social Security Mexican Institute, Mexico City; Social Security Mexican Institute, Mexico City, Mexico; Universidad de Guadalajara, Guadalajara, Mexico; Sociedad Española de Oncología Médica, Spain

OBJECTIVES: The aim of this study was to identify health workers’ labor environment satisfaction in several oncology services from a tertiary referral center and two secondary level hospitals in the Social Security Mexican Institute (IMSS). METHODS: A cross-sectional and descriptive study was performed within the IMSS in Guadalajara, Mexico. The health workers were interviewed using the work environment scale (WES), this questionnaire contains 90 items through dichotomy answers (true/false) to evaluate medical staff satisfaction among several items: involvement, cohesion, support, autonomy, organization, work-pressure, clarity, control, innovation, guidance and comfort. All workers interviewed attend mainly oncology patients. Internal consistency was evaluated through Cronbach’s alpha and ANOVA to obtain statistical differences between health workers responses. This questionnaire was previously validated in Mexico. RESULTS: Eighteen physicians, 27 nurses, 7 medical assistants and 8 radiotherapy technicians were interviewed. The mean response for all health workers interviewed satisfaction level including all items was of 49% (23% to 78%), the lowest satisfaction level was for the comfort item (39%) and the highest was for the clarity item (59%). We did not find differences between medical staff specialties, with exception of nurses, whom were the lowest satisfaction level group (38% \(p = 0.001\)). However, statistical differences among all the hospitals studied in the assessment were found. In the tertiary referral center physicians showed the lowest work environment satisfaction in the cohesion item (40% \(p = 0.09\)) followed by nurses giving services to inpatients (38% \(p = 0.01\)). In second-level centers the lowest work environment satisfaction level was obtained in medical assistants in clarity items (37% \(p = 0.03\)) and radiologists in involvement \(p = 0.04\). CONCLUSION: Using the WES scale in Mexican hospitals, the analysis showed that medical staff that attend oncology patients, are dissatisfied with their work environment. The less satisfied were nurses and medical assistants.

GUIDELINES AND CANCER SCREENING IN THE UNITED STATES AND CANADIAN HEALTH SYSTEMS

Kadriya S; Strumpf EC

University of Washington, Seattle, WA, USA; McGill University, Montreal, QC, Canada

OBJECTIVES: To understand Canadian and U.S. health system compliance with cancer screening guideline information with respect to the age of screening initiation. METHODS: Canadian and U.S. cancer screening generally identify ages when cancer screening should be initiated. We use a regression discontinuity research design to identify patterns in increases in Canadian and U.S. cancer screenings in the past two years at the guideline recommended ages. Multivariate logistic regression analyses were performed using breast, prostate and colorectal cancer screening within the past two years as the dependent variables of interest. Logistic regression models also adjust for race, sex, and screening recommendations. RESULTS: For adult individuals from the 2006 Behavioral Risk Factor Surveillance Survey, 2003 National Health Interview and 2003 and 2005 Canadian Community Health Surveys. RESULTS: Graphical and logistic regression analyses identified large statistically significant increases in cancer screening rates precisely at the U.S. guideline recommended screening initiation ages, 23%, 25% and 25% precisely at the guideline recommended age 40 for breast and age 50 for colorectal and prostate cancers. Similarly in Canada we found a 20% increase in breast cancer screening age at 50, the Canadian guideline recommended age for screening initiation. We did not find a discrete increase in the Canadian colorectal cancer screening rate at the Canadian recommended screening age of 50. CONCLUSIONS: U.S. and Canadian cancer screening utilization is generally consistent with each country’s guideline recommendations regarding age. The cross-country differences in screening identified in this study can potentially explain cross-country differences in cancer mortality rates and affect interpretation of cross-country cancer statistics. The similarity of other OECD cancer screening guidelines to Canadian screening guidelines suggests that results from this study can provide a valid comparison to comparisons of cancer statistics between U.S. and other OECD countries.

THE IMPACT OF CANCER SCREENING GUIDELINE INFORMATION ON CANCER DETECTION

Kadriya S; Strumpf EC

University of Washington, Seattle, WA, USA; McGill University, Montreal, QC, Canada

OBJECTIVES: To understand the impact of U.S. cancer screening guideline information on U.S. cancer screening and cancer detection. METHODS: We use an instrumental variables research design to identify the effects of breast, colorectal and prostate cancer screening guideline information on cancer detection. U.S. guidelines specify an age at which screening should begin, implicitly recommending that screening not occur for asymptomatic individuals below that age. We first estimate compliance with guideline information from the difference in age-specific screening rates just below and above the ages at which clinical guidelines recommend that screening begin. We then perform instrumental variables regression analyses to estimate the effect of guideline induced screening on cancer detection. U.S. cancer screening and incidence data (2000-2005) are derived from the Behavioral Risk Factor Social Survey, the National Health Interview Survey and the SEIR Program. RESULTS: Age-specific screening rates from national BRFSS and NHIS survey data indicate that breast, colorectal and prostate cancer screening in the last year rise by 55%, 88% and 29% precisely at the guideline recommended ages (age 40 for breast cancer and age 50 for colorectal and prostate cancers). Results from instrumental variables analyses indicate that a 1% point increase in screening at the guideline recommended ages leads to an additional case of breast and colorectal cancer detected per 100,000 individuals. The substantial increase in prostate cancer screening did not have an identifiable effect on prostate cancer detection. CONCLUSIONS: We used an instrumental variables strategy to identify the impact of guideline information on cancer screening and detection. Guideline information induces substantial increases in breast, colorectal and prostate cancer screening but these changes only lead to increases in breast and colorectal cancer detection. These results suggest that reductions in the use of the PSA test will result in substantial cost savings with minimal reductions in health.

IMPACT OF NEW DRUGS AND BIOLOGICALS ON TREATMENT AND COSTS FOR COLORECTAL CANCER

Shah ND; Van Houten H; Vermaelen D

Mayo Clinic, Rochester; MN, USA; University of Wisconsin Hospital and Clinics, Madison, WI, USA

OBJECTIVES: There have been a number of new drugs and biologicals approved by the FDA in the last five years for the treatment of colorectal cancer (CRC). Objective of this study was to compare the initial treatments and overall medical costs for working-age persons with CRC before and after the introduction of these treatments. METHODS: This retrospective cohort study was based on a large administrative database and included patients with an ICD-9 diagnosis of CRC. We looked at individuals treated for CRC in the period prior to introduction of new chemotherapy and biological agents (January 2002-December 2002) and the period after the introduction of two biologicals (bevacizumab and cetuximab) and one chemotherapy agent (oxaliplatin) (June 2004-May 2005). We assigned patients to stage values of CRC at diagnosis and treated patients in the pre-period to stage III CRC with the pre-period post-period and 4413 patients (59% Stage III) with CRC in the post-period. We estimated mean total medical costs in the pre- and post- periods using the Kaplan-Meier sample average estimator. RESULTS: The predominant treatment regimen in the pre-period for stage III CRC was 5-FU/Lovastatin (77%), while the pre-dominant regimens the post-period were 5-FU/Lovastatin (36%) and FOLFIRI (35%). The pre-dominant treatment regimen for stage IV CRC was IFL/FOLFIRI (50%), while the most common regimens in the post-period were IFL/FOLFIRI (22%) and FOLFIRI (23%). Additionally, over 14% of the patients received a biological agent in the post-period. There was also a significant increase in total medical costs over this time period. The mean costs for Stage III and Stage IV CRC patients increased 20% (from $14,187 in the pre-period to $10,049 in the post-period \(p < 0.001\)). CONCLUSIONS: The introduction of new treatments for CRC significantly changed the treatment patterns for both Stage III and Stage IV CRC. These changes in treatment were accompanied by a significant increase total medical costs.

BREAST CANCER PREVALENCE AND HEALTH CARE UTILIZATION AND COST TRENDS AMONG FEE-FOR-SERVICE FEMALE RECIPIENTS IN A STATE MEDICAID PROGRAM

Channa R, Madhavan SS, Bhagwankar AJ

West Virginia University, Morgantown, WV, USA

OBJECTIVES: The occurrence of breast cancer causes significant morbidity and mortality in breast cancer patients and results in considerable economic impact on patients, health care payers, and society. The purpose of this study is to determine the trends in the prevalence of breast cancer and associated health care utilization and costs among an indigent population covered by a state Medicaid program. METHODS: Retrospective analysis of a state Medicaid fee-for-service administrative claims database.
for each calendar year from January 1, 2000 to December 31, 2005 was performed. Breast cancer prevalence was determined based on the number of females (21-64 years) having at least one medical services claim with a primary diagnosis of breast cancer (ICD-9-CM codes 174, 233.0x, 238.3x, or 239.3x) at any time during the calendar year. Corresponding medical services use and patterns of treatment were also reported among females with breast cancer for each year. State Medicaid perspective was used to calculate costs (2005 US dollars). RESULTS: From 2000 to 2005, the number of female recipients with breast cancer increased from 789 to 1205, respective. The female ratio in the age group 45-64 years represented the highest proportion in all the study years, increasing from 78.6% in 2000 to 83.9% in 2005. Consistent with state population demographics, a majority (>90%) of recipients in each year were white. Office visits represented a large majority of medical services encounters (>98%) and costs (>90%) in each year. The average amount per recipient paid by Medicaid for breast cancer-related medical services use increased from $2637 to $3570 between 2000 and 2005, respectively. The average cost per office visit increased from $255/visit to $429/visit during the same period. CONCLUSIONS: Breast cancer prevalence increased between 2000 and 2005. There has been a substantial increase in the cost impact associated with breast cancer on the State Medicaid program during the same period.

A RETROSPECTIVE CLAIMS DATABASE COMPARISON OF SORAFENIB AND SUNITINIB DOSING PATTERNS IN PATIENTS WITH RENAL CELL CARCINOMA (RCC)

Kothe B, Mayeur E, Baghouti V, Ralforth K


OBJECTIVES: To compare dose-reduction patterns in patients with RCC treated with FDA-approved tyrosine kinase inhibitors (TKIs) sorafenib and sunitinib.

METHODS: A retrospective analysis was conducted using data from a claims-based database (MarketScan Covering 218 million lives for 2002-2008 by census regions). Patients with ≥2 claims for RCC (ICD9 189.0 or 198.0), continuous health care coverage, >180 days’ coverage before RCC diagnosis, and no claim for sorafenib or sunitinib before RCC diagnosis, who received a standard RCC initial daily doseage of ≥500 mg or sunitinib 50 mg and ≥2 consecutive dispensings were included. Initial episode was defined as time from first drug-dispensing to first of switch to another TKI, health care coverage end, treatment end, or March 31, 2008. Both patient and patient-time level analyses for dose reductions between treatments conducted. RESULTS: Baseline demographics between the groups (sorafenib, n = 189; sunitinib, n = 304) were similar except for a higher incidence of stroke (7.9% vs. 3.6%, P = 0.037) and other cancer site (93.7% vs. 87.8%, P = 0.016) in the sorafenib group. Significantly more patients receiving sunitinib required dose reductions compared with sorafenib (first 3 months: 23.0% vs. 4.2%; complete initial episodes: 35.5% vs. 16.9%; P < 0.001 for both). For all episodes, mean time to dose reduction was significantly longer for sorafenib than sunitinib (162 days vs 104 days, P = 0.003). Significantly more dose reductions occurred within the first 3 months with sunitinib than sorafenib (65% vs. 25%, P = 0.001). Controlling for different lengths of exposure time further confirmed that more dose reductions were observed in patients treated with sunitinib than with sorafenib (2-6 times greater, P = 0.001). CONCLUSIONS: This retrospective US claims analysis showed that patients receiving sorafenib required significantly more a number of patients and were required in patients who initially received sunitinib than in those who received sorafenib.

INFLUENCE OF AGE ON COMORBIDITIES AND TREATMENT IN PATIENTS WITH RENAL CELL CARCINOMA (RCC): A RETROSPECTIVE CLAIMS DATABASE ANALYSIS

Dorf TJ, Hoyuaur E, Baghouti V, Quinn DII

Kedrick School of Medicine, Los Angeles, CA, USA, StatLog Consulting Inc, L’Ange-Gardien, QC, Canada, ‘Bayer HealthCare Pharmaceuticals, Inc, Wayne, NJ, USA

OBJECTIVES: To analyze baseline symptoms, comorbidities, and treatments in newly diagnosed RCC patients by age group. METHODS: Retrospective claims-based analysis was conducted using MarketScan MedStat, a database covering all US census regions, including 218 million lives for years 2002-2008. Patients with initial RCC diagnosis in 2003-2007, ≥2 outpatient or ≥1 inpatient RCC claims (ICD9 189.0 or 198.0), continuous health care coverage, and >180 days coverage before diagnosis were included. Patients were followed from diagnosis until health care coverage end or June 30, 2008. Conditions, symptoms, and individual Charlson comorbidities were assessed. Treatment was analyzed using prevalence and time to initiation in patients < and ≥265 years old. RESULTS: Of 12,253 patients identified, 61.8% were male (mean age, 63 years old) and 38.2% were ≥65 years old. Overall, pain (39.6%), hypertension (15.3%), diabetes (23.6%), and chronic kidney disease (19.4%) were most common comorbidities reported. Most comorbidities were prevalent in ≥265 years old than <65 years old: notably, cerebrovascular disease (8.7% vs. 3%; P < 0.001), acute myocardial infarction (2% vs. 0.7%; P < 0.001), and chronic renal failure (9.3% vs. 6%; P < 0.001). In <65 and ≥265 groups, most commonly used treatments were nephrectomy (53.4% vs. 44.0%; P < 0.001), intravenous chemotherapy (11.1% vs. 13.3%; P = 0.007) and oral chemotherapy (10.5% vs. 13.3%; P < 0.001), although less than 4% of patients in each group received FDA-approved oral agents sorafenib or sunitinib. For <65 and ≥265 groups, respectively, mean time from RCC diagnosis to nephrectomy, 25 and 31 days; radiotherapy, 170 and 177 days; intravenous chemotherapy, 154 and 181 days; sorafenib, 220 and 247 days; sunitinib, 221 and 205 days. CONCLUSIONS: Baseline comorbidities and symptoms were more common in RCC patients ≥265 years old than those <65 years old. Nephrectomy was used more frequently in patients ≥65, probably because of comorbidity issues in older patients. In contrast, systemic treatment was similar in both groups.

OFF-LABEL USE OF ONCOLOGY DRUGS IN A COMMUNITY ONCOLOGY EMR DATABASE

stephen g, Knott K, Reynolds MW, Luo W, Fraemen K

University of South Carolina, Lexington, MA, USA, Pacific Hematology/Oncology Associates. San Francisco, CA, USA, University of South Carolina, Bethesda, MD, USA

OBJECTIVES: The objective of this study was to examine the utilization patterns of cancer medications beyond their labeled indications approved by the FDA in community oncology practices. METHODS: Drug prescription information from a community oncology data warehouse was used for two separate analyses. Patients were categorized according to whether they had an ICD-9 diagnosis code for one of four cancer types including lung, breast, bladder or gastric, and having no other malignancy. The frequency of use of various oncology drugs was examined for each of these groups, against a set of medications that were FDA-approved for these indications or were recommended by NCCN guidelines. In the second analysis, patients with a single malignancy, who received any of the five oncology drugs (paclitaxel, vinorelbine, irinotecan, bevacizumab, and gemcitabine) were counted. Comparisons were then made against the cancer indications for which these agents were approved by the FDA. RESULTS: Seventy-eight percent of breast and 95% of lung cancer patients received medications approved for these indications, while 68% and 75% also received drugs that were not approved by the FDA for those conditions. More than 99.7% of these patients received agents recommended on NCCN guidelines. None of the bladder cancer patients and only 5% of gastric cancer patients received drugs approved for these indications, while 97% and 95% of them received guideline-recommended drugs. Only half of the patients given paclitaxel or bevacizumab received these for an FDA-approved indication. In the case of vinorelbine and gemcitabine, the proportion was lower at 30% and 40%, respectively, while it was higher for irinotecan at 60%. CONCLUSIONS: Oncologists’ choice of drugs is driven by evidence-based guidelines, independent of FDA approval. There is a high and varying proportion of off-label use across oncology medications and cancer types.

GASTROINTESTINAL DISORDERS – Clinical Outcomes Studies

A SYSTEMATIC REVIEW ON KUSHENIN VERSUS WESTERN MEDICINES FOR PATIENTS WITH CHRONIC HEPATITIS B

Shan B, Shao R, Xia Y, Gao J, Chen Y

1University of Cincinnati, Cincinnati, OH, USA, 2China Pharmaceutical University, Nanjing, Jiangsu, China, 3University of Cincinnati, Cincinnati, OH, USA

OBJECTIVES: Hepatitis B virus infection affected over 2 billion people worldwide, and 350 million suffering from chronic HBV infection. The prevalence of chronic HBV infection is high in Asia and most of Africa. Kushenin injection as a new traditional Chinese medicine is now widely used for chronic HBV treatment in China. The objective of this paper was to compare the effectiveness of Kushenin and western medicines on patients with chronic HBV. METHODS: Based on a pilot study of patient interview at one hospital setting, we identified key outcome measurements of effectiveness related to Kushenin and western medicine, including ALT recovery rate and negative conversion rate of HBeAg. Consequently, we performed a systematic literature review using computer-based search-engines such as MEDLINE (1966 to 2007), EMBASE (1966 to 2006), OVID (1965 to 2006), the Chinese Biomedical Database (CMB) (1978 to 2006) and CNKI (China National Knowledge Infrastructure) (1994 to 2007). From available data, both interferon and lamivudine were selected as western medicines to compare with Kushenin regimen. A Meta-analysis was performed using a software program of ReviewManager® 4.2. RESULTS: A total of 15 published clinical studies involving 1396 patients met inclusion criteria for the meta-analysis. Comparing to interferon alone regimen, Kushenin showed no significant differences in terms of ALT recovery rate (relative risk, RR = 0.96, 95% confidence interval [95% CI]: 0.86-1.09] and negative conversion rate of HBeAg (RR = 0.85, 95%CI: 0.69-1.05). Meanwhile, Kushenin combined with lamivudine showed better effectiveness in terms of ALT recovery rate (RR = 1.77, 95%CI:1.38-2.26) and negative conversion rate of HBeAg (RR = 2.35, 95% CI: 1.81-3.83) compared with lamivudine alone. CONCLUSIONS: Integrated Kushenin plus lamivudine showed better clinical outcomes in ALT recovery rate and HBeAg negative conversion rate. Further evidence-based analysis is required due to low quality of randomization procedure in clinical trials and insufficient study patients for treating chronic HBV with Kushenin.