Based Measure-SBM) and Malmquist index with Clearances. The sum of these two items is corresponding to the total expenditure in the sector analysed. Output: the output is defined as the number of renal transplants performed by every Brazilian State. **RESULTS:** Examining the decomposition of the Malmquist index, has that 18 States increased the index of pure change of efficiency (Pairing) with values greater than 1. According to the results, 21 States have submitted an index less than 1, indicating an offset of the boundary of production to a lower level. The analysis of efficiency of Brazilian States proposed in this study indicates a need for a better allocation and/or application of the resources spent by the SUS in the area of kidney transplants. **CONCLUSIONS:** The results of this survey suggest that the process of kidney transplants has presented an activity with great variability between States. The offer of the kidney organ becomes insufficient in these places to meet the demand, creating queues of waiting for a kidney transplant. The system of kidney transplants in Brazil, in the current period, presents a number of surgeries that are below the population's needs, due mainly to the lack of effective donations of this organ.

PHS69

ECONOMIC IMPACT OF PATIENTS WITH TUBEROUS SCLEROSIS COMPLEX (TSC) IN THE UK: A RETROSPECTIVE DATABASE ANALYSIS IN THE CLINICAL PRACTICE RESEARCH DATALINK (CPRD)

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OBJECTIVES: TSC is a multi-system genetic disorder that affects up to 8,000 patients in the UK. It is associated with non-malignant lesions throughout the body, neurological manifestations, and impaired cognition. Consequently, the burden on patients, their families, and the health care system is thought to be substantial. This study assesses the real-world economic impact of TSC in the UK. **METHODS:** TSC patients were retrospectively identified between April, 1997 to March, 2012 in CPRD (Read: PK5.00, PK5.12) and linked Hospital Episodes Statistics (HES; ICD-10: Q85.1) databases. Health care encounters in the following settings were analysed: general practitioner (GP), inpatient, emergency room (ER) admissions and outpatient. Analyses were stratified by age at time of occurrence for pediatrics (<18 years) and adults (≥18 years). **RESULTS:** A total of 341 TSC patients were identified (52% female; median age 14.4 years at first event). The annual rate (mean[SD]) of health care encounters (by person-year) was 13.7(14.3) for paediatrics and 15.6(15.3) for adults. Annual rates (mean[SD]) of paediatric vs. adult encounters by care setting was as follows: GP, 10.1(3.1) vs. 12.9(14.2); inpatient, 1.0(1.6) vs. 0.6(1.0); ER admission, 0.4(0.8) vs. 0.3(0.7); outpatient, 3.9(3.3) vs. 2.8(3.0). Neurological manifestations (primarily epilepsy, including infantile spasms and *status eptilepticus*) were most common in pediatrics resulting in inpatient and ER admission use in 53% and 62% of patients, respectively. Musculoskeletal manifestations were most common in adults resulting in inpatient and ER use in 31% and 33% of patients, respectively. Mean(SD) number of surgical procedures and tests/patient-year was 0.2(0.4) and 0.3(0.4), respectively. MRI or CT scans were observed in 34% of pediatrics and 26% of adults. **CONCLUSIONS:** Health care resource utilization rates suggest significant economic burden of TSC throughout life. Absence of MRI or CT procedures may signify deviation from recommended monitoring guidelines. Further analyses will quantify the cost impact of TSC on the UK health care system.

PHS71

HIGH COST PATIENTS AND COST PATTERNS FROM PEDIATRIC TO ADULT CARE IN A MEDICAID POPULATION WITH SICKLE CELL DISEASE

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OBJECTIVES: The aim of this study was to identify high cost sickle cell disease (SCD) patients (HCSPs) and analyze their cost patterns throughout lifetime and as they transition from pediatric to adult care. **METHODS:** State Medicaid data from 1997 to 2010 were analyzed. Patients with ≥2 SCD diagnoses and ≥1 blood transfusion were included. HCSPs were defined as the fraction of most expensive patients accounting for 50% of the total yearly costs. Periodic events associated with high costs are likely to be responsible for high total costs. High cost events (HCEs), defined as quarters with costs ≥$33,095, corresponding to the amount separating the top 5% most expensive quarters observed in the sample, were analyzed. A longitudinal logistic regression model was used to identify factors associated with HCEs. **RESULTS:** From a cohort of 3,208 eligible SCD patients, 449 (14%) were identified as HCSPs. The average yearly total cost of HCSPs was significantly higher at $108,524/year compared to $17,683/year for other patients. The share of the total yearly costs of HCSPs increased from 34.4% to 46.3% between age groups 11-15 and 16-20, reaching its maximum at 65.2% in the 26-30 age group. The frequency of HCEs increased by 122.6% in the transitioning group from 0.110 HCE/year among patients aged 11-15 to 0.244 HCE/year among patients aged 16-20. Patients were more likely to have a HCE during the post-transition period (adjusted odds ratio [OR]: 1.41, p=.0046) and when experiencing an SCD complication (OR: 3.79, p<.0001). Blood transfusions received during the previous quarter were associated with a lower likelihood of HCEs (OR: 0.87, p=.0080). **CONCLUSIONS:** In this population of Medicaid SCD patients, 14% were responsible for over 50% of total yearly health care costs. Directing appropriate and targeted interventions can help assist providers improve outcomes and lower health care costs in this patient population.

PHS72

THE COST OF MULTIPLE LYMPH NODE BIOPSY PROCEDURES TO THE UNITED STATES HEALTH CARE SYSTEM AMONG PATIENTS DIAGNOSED WITH LYMPHOMA: A COMMERCIAL HEALTH CARE DATABASE ANALYSIS

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OBJECTIVES: Diagnosis and monitoring of lymphoma includes lymph node assessment. This study examined the association of multiple lymph node biopsies and health care resource use among lymphoma patients. **METHODS:** Patients with ≥2 claims for Hodgkin lymphoma (HL) or non-Hodgkin's (NHL) lymphoma from 1/1/06-12/31/12 were identified from a large US claims database; the index date was the first lymphoma claim date. Patients were retained if continuously enrolled in the health plan for ≥12 months before and after the index date, were not diagnosed with lymphoma during the pre-index period or diagnosed with cancer other than lymphoma. Health care cost and utilization were examined during the 2-year study period. Indication of receipt of biopsy included ≥1 claim for a lymph node biopsy (core needle, fine needle, surgical, other), pathology, or tumor excision (bone marrow biopsy not included). Health care cost and utilization was examined among patients with 0 to ≥3 biopsies. The cost of claims indicating biopsy was identified for each biopsy type. **RESULTS:** 20,813 newly diagnosed lymphoma patients met all inclusion criteria. 16,557 (80%) had ≥1 claim indicating biopsy, 12,920 (62%) had ≥2 and 8,783 (42%) had ≥3. The percentage with an inpatient stay and ER visit was greatest among patients with ≥3 biopsies (52%, 53%) compared to patients with 2 (33%, 41%), 1 (25%, 34%), or 0 biopsies (26%, 42%). Total health care cost was greatest among patients with ≥3 biopsies ($102,465) compared to 2 ($51,565), 1 ($25,614), or 0 biopsies ($15,671). The cost of biopsies ranged from $307 for a fine needle biopsy to $3,296 for a complex surgical biopsy and $12,353 for other biopsies. Biopsies involving the mediastinum cost $10,554 on average. **CONCLUSIONS:** Lymphoma patients incur significant health care cost and utilization. Increasing the efficiency of lymph node diagnosis could avoid the need for repeat biopsies and reduce health care costs.

PHS73

COSTS OF PILOT PROGRAMS IN CHICAGO-BASED CENTERS FOR POPULATION HEALTH AND HEALTH DISPARITIES: A CASE FOR TEAM-CARE?

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OBJECTIVES: To measure the costs of two team-care based pilot interventions. These interventions are part of the Chicago-based National Institutes of Health-funded Centers for Population Health and Health Disparities (CPHHD) designed to improve health outcomes in medically underserved communities. **METHODS:** The data come from two Chicago-based CPHHD randomized controlled trials. Use of a virtual team aimed at reducing depressive symptoms in older adults with depression (BRIGHTEN Heart) and cardio-metabolic syndrome and use of a patient navigator to improve diagnostic follow-up of mammography screening for breast cancer. The programs collected detailed data regarding service delivery and resource use. Costs were measured from a provider perspective. Actual time spent with patients was estimated in the navigator program using details on activities performed and previous time study data for those activities in similar programs. Time was converted to costs based on average wages reported by the Bureau of Labor Statistics (BLS) by occupational title. BRIGHTEN Heart involved multiple services along with time and travel cost estimates for each occupation and service. **RESULTS:** There were 493 patients that received patient navigator services and 16 patients in the virtual team-based BRIGHTEN Heart intervention. The patients were almost all minorities and were below average in terms of income and education. The operating cost of the Navigator program was $14.29 following diagnostic screening. The operating cost for the year of virtual team care in BRIGHTEN Heart was $753.18. **CONCLUSIONS:** Costs are an important consideration for evaluating team-care based interventions to improve patient health in the underserved. The two programs evaluated here offer insight into the relatively low cost of interventions with team-care strategies employing allied health workers. Given the low cost of care, the programs offer promise of being cost effective. Future work will examine these costs in comparison to the effectiveness of the program.

PHS74

TREATMENT PATTERNS AND HEALTH CARE RESOURCE UTILIZATION OF PATIENTS WITH NEUROENDOCRINE TUMORS IN THE UNITED STATES

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OBJECTIVES: To examine patient characteristics, treatment patterns, and health care resource utilization of patients with neuroendocrine tumors (NETs) in the US. **METHODS:** Using a US administrative claims database, commercially-insured adults newly diagnosed with carcinoid tumors (ICD-9-CM: 209.xx) or pancreatic islet cell tumors (ICD-9-CM: 157.4 and 211.7) between 07/01/2007 and 12/31/2010 were identified (the date of the first observed diagnosis as the index date). Patients were required to have 6-month pre-index and 12-month post-index continuous enrollment. Descriptive analysis was performed to describe demographic and clinical characteristics, treatment patterns for NETs, and health care resource utilization during the 12-month post-index period. Similar analysis was conducted for Medicare-eligible individuals with the supplemental private insurance. **RESULTS:** This study included 3,940 commercially-insured individuals (mean age: 52.3 years; 55.4% female) and 1,658 Medicare-eligible individuals (mean age: 74.9 years; 49.0% female) with NETs. In the commercial population, carcinoid syndrome (33.2%), liver metastasis (22.4%), and nausea/vomiting (18.2%) were most common among the comorbidities evaluated. While 19.5% of individuals received surgical therapy and 17.5% received medical therapy (somatostatin analogue treatment) as the first-line treatment, nearly two-thirds received neither of those treatments. During the 12-month post-index period, about half of individuals had inpatient hospitalization and 35.4% had emergency room visits; the mean physician office visit was 19.9. In the Medicare population, carcinoid syndrome (27.4%), liver metastasis (20.7%), and diarrhea (16.1%) were the most prevalent comorbidities. While 13.2% received surgical therapy and 19.8% received medical therapy, over two-thirds received neither. Approximately half of individuals had inpatient hospitalization and 37.3% had emergency room visit during the 12-month post-index period; the mean physician office visit was 26.1. **CONCLUSIONS:** This exploratory study described real world

treatment patterns of patients with NETs, and future research should investigate the management strategy of different symptoms in this population and its impact on health care resource utilization and costs.

PHS75

UTILIZATION, COSTS AND REIMBURSEMENT OF INPATIENT TREATMENT OF ACUTE BACTERIAL SKIN AND SKIN STRUCTURE INFECTIONS AMONG THE MEDICARE FEE-FOR-SERVICE POPULATION

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OBJECTIVES: This study of hospitalized Medicare beneficiaries with acute bacterial skin and skin structure infections (ABSSSI) diagnoses describes inpatient hospital cost and resource use by patients with primary ABSSSI infections. **METHODS:** The study used Medicare Provider Analysis and Review (MedPAR) Files from 2011—2012 containing claims for 313,646 patients in 2011 and 317,527 patients in 2012 with a primary ABSSSI diagnosis with Age ≥ 18 from a 100% sample of hospitalized Medicare beneficiaries during 2011-2012. Reimbursements were derived from 2012 MedPAR data and costs were derived from 2010 Premier data, inflated (4.7%) to 2012 using the October 2013 hospital producer price index (PPI) generated by the Bureau of Labor Statistics. Net reimbursement was analyzed by MS-DRG and LOS. The analysis used regression modeling to determine factors correlated with LOS. **RESULTS:** Median Charlson Comorbidity Index (CCI) was 3; patients tended to have more cellulitis on the trunk, foot, and toe. The median LOS was three days. Sixteen percent of patients used the ICU/CCU. For MS-DRG 603 (Cellulitis without MCC), the most common MS-DRG comprising 61% of admissions, net reimbursement was positive when LOS ≤ 3 days, but 52% of admissions were projected to result in financial losses to the hospital. Age, non-minority status, Northeast census region, CCI, cellulitis on the leg and traumatic wound infection were correlated with longer LOS; diagnoses of erysipelas, diabetes without complications and drug abuse were correlated with shorter LOS. Median costs were $5,612. **CONCLUSIONS:** The median length of stay for Medicare patients is shorter than the indicated length of antibiotic drug treatment for ABSSSI (7-10 days), implying that most patients complete treatment in ambulatory settings. Hospitalization cost is projected to be less than reimbursement for many of the most common type of ABSSSI patients.

PHS77

FACTORS RELATED WITH DIRECT COSTS OF RESIDENTIAL MENTAL HEALTH SERVICES IN SÃO PAULO CITY, BRAZIL: DOES RESIDENT PROFILE AFFECT COSTS?

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OBJECTIVES: Residential services costs have been associated with multiple variables such as resident psychiatric status and severity of symptoms, daily living skills, social behaviour problems, geographic region, service size, gender and age. In 2008, up to twenty full staffed homes were created in Sao Paulo city, in order to accommodate people discharged from psychiatric hospitals. Aims of this study were to estimate the direct costs of staffed homes and also to explore the relationship between resident profile and services costs. **METHODS:** We used a bottom-up approach for the estimation of direct costs according to public health service provider perspective. Direct costs included costs with accommodation, inpatient, outpatient and emergency health services and treatment received in the previous month, in 147 subjects with mental disorders living in twenty full staffed homes during the year 2011. We evaluated resident profile (quality of life, social behaviour problems, psychiatric diagnosis, severity of symptoms, socio demographic characteristics) and pattern of health service use. Linear regression analysis was employed to verify the effect of resident profile on residential services costs. **RESULTS:** Residential services costs corresponded to 89% of the total direct costs including accommodation, health care and medication, and of these, 62% were due to human resources costs, 8% to transportation and house repairs and 7% to overhead. Residential costs were associated exclusively with geographic region, length of time living in psychiatric hospital and length of time living in residential service. Mean of residential costs per month per capita was U$1,750.00 (1U$= 2.00 R$-Brazilian currency). One-fourth to one-third of the sample presented good scores of autonomy, social behaviour and psychiatric status. **CONCLUSIONS:** Direct costs of residential services could be optimized if one-fourth of sample with good autonomy and appropriate social behaviour would be transferred to less expensive services like semi-staffed or not staffed homes.

PHS78

DIFFERENCES IN THE UTILIZATION OF PREVENTIVE SERVICES FOR UNITED STATES VETERANS AND NON-VETERANS

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BACKGROUND:: The utilization of cancer preventive care services including mammography, colonoscopy and pap smears in the United States remains low, despite their established success in reducing cancer deaths. Due to the harmful exposures during their service years veterans may have more negative health outcomes compared to nonveterans. The rising costs of cancer treatment and a focus on quality treatment require the public to understand how VA resources are being used and if they are providing high quality and effective care to our nations' Veterans. **OBJECTIVES:** To understand the difference in the utilization of preventive services (specifically mammography, colonoscopy and pap smears) in the US between veterans and non veterans. Veterans have reported reasons for declining preventive services like previous negative results, no time to get tested, no risk factors, getting testing not being a priority, uninterested in knowing, and already infected. This paper assesses the difference in the utilization of preventive services with data from the Household Component (HC) of the Medical Expenditure Panel Survey (MEPS) from 2011. **METHODS:** We attempted to understand the differences in utilization of cancer related preventative services between veterans and non-veterans in 2011 using regression analyses. **RESULTS:** For both colonoscopy and mammography cancer preventive services, veterans are less likely to have had a mammogram in the past year controlling for a wide range of socio-demographic variables. There is no significant difference in women veterans and women non-veterans and their utilization of pap smears in the 2011 data. **CONCLUSIONS:** Despite documented evidence in early cancer detection, take up rates for mammography and colonoscopy among US veterans appears lower than non veterans. Veterans may not be accessing the prevention services available to them in the VA and perhaps awareness and education can increase these rates in the future.

PHS79

IMPACT OF A RHEUMATOID ARTHRITIS PATHWAY ON COST OF CARE

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OBJECTIVES: To analyze cost savings for the first year of a rheumatoid arthritis (RA) pathway program. Cardinal Health collaborated with CareFirst BlueCross BlueShield to develop the first payer-sponsored RA pathway program in the United States. Private-practice rheumatologist participation was voluntary, but reimbursement enhancements were offered to mitigate cost of pathway adoption and compliance. A steering committee comprised of 12 participating physicians created the pathway, which included an obligatory use of a real-time decision support and data capture tool; use of disease-modifying antirheumatic drugs (DMARDs) as first-line treatment for at least 12 weeks prior to use of biologic agents; and a requirement that dose, schedule, and adjustments for biologic agents follow package label prescribing guidelines. **METHODS:** 80 physicians in 37 practices participated in the program; 876 active treatment patients were accrued from 2/1/12-1/31/12. Claims data augmented and validated tool-data capture. A first month to last month trend design was used to calculate savings regarding the percentage of patients initially treated with DMARDs and the use of biologic agents by label dose and schedule. A matched control design was used to asses savings for site of care based on the percentage of patients who received office-based versus hospital-based infusions among participating and nonparticipating community rheumatologists. **RESULTS:** DMARD use increased by 7.4% over the first year contributing to a lower cost of care annualized at $1,069,790. Control of biologic "dose-creep" contributed $80,230 to further lowering cost annually. Average hospital facility costs per biologic infusion were near double that of community practice ($5000 vs $2500, respectively). Participating providers had 80% fewer facility infusions than nonparticipating providers (11% vs 55%, respectively). **CONCLUSIONS:** RA pathway algorithm-compliant prescribing behavior for DMARDs and biologics resulted in dramatic savings. Preserving community site of care represents a significant savings potential for RA management.

HEALTH SERVICES – Patient-Reported Outcomes & Patient Preference Studies

PHS80

ASSOCIATION BETWEEN PERSISTENT ANNUAL TO BIENNIAL MAMMOGRAPHY SCREENING AND STAGE AT DIAGNOSIS AMONG ELDERLY WOMEN WITH BREAST CANCER

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OBJECTIVES: Previous studies that have evaluated the association between mammography screening and stage at breast cancer (BC) diagnosis had limitations because they did not analyze persistence to mammography screening and did not distinguish screening from diagnostic mammograms. The primary objective of this study is to determine the association between persistence to mammography screening and stage at BC diagnosis among elderly women. **METHODS:** A retrospective cohort study was conducted using Surveillance, Epidemiology, End Results (SEER)-Medicare database. The study population consisted of elderly women age > 70 diagnosed with incident BC in 2007 (N = 7,945). Persistence to mammography screening was measured as having at least three mammograms during the 5 years prior to BC diagnosis. A validated algorithm with very high sensitivity and specificity was used to distinguish between screening and diagnostic mammograms. Chi-square tests and multinomial logistic regressions were performed to analyze the association between persistence to mammography screening and stage of BC diagnosis, after controlling for predisposing, enabling, need, health care use, and external environment factors. **RESULTS:** Overall, 45.4% of elderly women with incident BC were persistent to annual or biennial screening mammograms, 26.4% were not persistent to annual or biennial screening mammograms and 28.2% did not have any mammogram. As compared to women who did not have any mammogram, women who were persistent to screening mammography were significantly more likely to be diagnosed at earlier stages. The adjusted odds ratios were: 44.96 (95%CI=31.3-64.4), 10.90 (95%CI=8.1-14.6), and 3.40 (95%CI=2.5-4.6) for insitu, local, and regional stages, respectively. **CONCLUSIONS:** Only a minority of elderly women were persistent to annual or biennial screening mammograms and persistence to mammography screening was associated with earlier BC disease stage. Interventions designed to promote persistent screening mammograms among elderly women are warranted.

PHS81

IMPACT OF PHARMACIST-CALL INTERVENTION PROGRAM ON NEW-TO-THERAPY PATIENTS' MEDICATION ADHERENCE

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OBJECTIVES: Patients new to therapy for chronic conditions often have poor medication adherence that can lead to adverse outcomes and higher medical costs. Previous studies have demonstrated the benefit of pharmacist interventions to improve adherence. The objective of this study is to evaluate the impact of a community pharmacist telephone call program on medication adherence in patients new