female. Eighty-seven percent of elderly population used health service at least once and five of the five most frequent healthcare centers. One-third of elderly patients who used the health services were hypertension patients. Older age (incidence rate ratio:IRR: 2.77, 95% confidence interval 2.75-2.79 for patients aged > 80 years), being female (IRR 1.96, 95% CI 1.95-1.98), and having multiple- comorbidities (IRR 1.56, 95% CI 1.41-1.73) were factors that increased the utilization of health service.

CONCLUSIONS: Health need was the most important factor associated with health services utilization. Health system should be appropriately designed for elderly population. Further study should be conducted to evaluate economic consequences of the elderly’s health utilization and identify the factors affecting patients who visit multi-health-centers.

PHS105

BREAST AND CERVICAL CANCER SCREENING IN UK: DYNAMIC INTERRELATED PROCESSES?

Lawrence 1, Hu 2, Rourke S.B.3

1University of Illinois College of Medicine at Peoria, Peoria, IL, USA

OBJECTIVES: No previous analysis has investigated simultaneously the determinants of screening uptake for the breast and cervical cancer screening in UK and looked at possible spillover effects from one type of screening examination to the other type of screening examination. METHODS: 838 women with 11,732 from the British Household Panel Survey (BHPS) for the time period from 1992 to 2008 were analysed for this analysis. As econometric model was a dynamic random effects panel bivariate probit model with initial conditions (Wooldridge-type estimator) used and dependent variables were the uptake of breast and cervical cancer screening in the recent year. RESULTS: Our investigation shows the high relevance of past screening decisions on the importance of the new screening uptake and other type of cancer screening examinations even after controlling for covariates and unobserved heterogeneity. The uptake for breast and cervical cancer screening was high if the same screening examinations were one or three years before which is in accordance with the medical screening guidelines. For breast and cervical cancer screening positive spillover effects existed from one type of examination to the other examination for the 30-49 years with the utilisation of a GP, living in a partnership and individuals in the recommended age groups had a higher uptake for breast and cervical cancer screening. Other socioeconomic and health related variables had non-uniform results in both screening examinations. CONCLUSIONS: Promoting the uptake level of one type of female prevention activity could also enhance the uptake of the other type of prevention activity.

PHS106

EXPLORING THE IMPACT OF CLINICAL, FUNCTIONAL AND SOCIAL FACTORS ON HIP FRACTURE PATIENT HOSPITALIZATION COSTS: INFORMING THE DESIGN OF A NEW CASE MIX PAYMENT SYSTEM

Hemani BC1, Rauh B2, Houghton J3, Malicky K4

1Health Quality Ontario, Toronto, ON, Canada, 2Ministry of Health and Long-Term Care, Toronto, ON, Canada

OBJECTIVE: Case mix reimbursement systems used in many countries to pay for hospitals typically rely on combinations of diagnoses and procedures to group patients according to their expected costs. In frail, complex populations such as patients with hip fracture, patients’ pre-hospitalization functional status and severity of trauma may also be important determinants. Other factors may also be important if the patients reside in long-term care or experience other type of cancer screening examinations even after controlling for covariates and unobserved heterogeneity. The uptake for breast and cervical cancer screening was high if the same screening examinations were one or three years before which is in accordance with the medical screening guidelines. For breast and cervical cancer screening positive spillover effects existed from one type of examination to the other examination for the 30-49 years with the utilisation of a GP, living in a partnership and individuals in the recommended age groups had a higher uptake for breast and cervical cancer screening. Other socioeconomic and health related variables had non-uniform results in both screening examinations. CONCLUSIONS: Promoting the uptake level of one type of female prevention activity could also enhance the uptake of the other type of prevention activity.

PHS107

INCREASING IN ACUTE HEALTH CARE USE AMONG PEOPLE LIVING WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) AND CO-MORBID DISEASES IN ONTARIO: A LONGITUDINAL STUDY

Choi S1, Boyle E.2,3, Marcellari A.4, Rais S.5, Kumar M.1, Loxton D.6,7, Adams A.8,9

1University of Miami, Miller School of Medicine, Miami, FL, USA, 2University of Tennessee Health Science Center, Memphis, TN, USA, 3University of Tennessee Health Science Center, Memphis, TN, USA, 4University of Tennessee Health Science Center, Memphis, TN, USA, 5Massachusetts General Hospital, Boston, MA, 6Boston University, Washington, DC, USA, 7Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA, 8Groupe d’étude, Lille, Montréal, QC, Canada, 9Analysis Group Inc., Washington, DC, USA, 10Analysis Group Inc., Boston, MA, USA

OBJECTIVES: To understand characteristics of sickle cell disease (SCD) patients ≥16 years old who have increased utilization of inpatient (IP) and emergency department (ED) resources.

PHS108

HOW EFFECTIVE ARE AUSTRALIAN MENTAL HEALTH COUNSELLING SERVICES FOR WOMEN WITH MENTAL HEALTH PROBLEMS?

Dolia, Gore X1, Lexton D1, D’este C1, Byles J2

1Research Centre for Gender, Health and Ageing, Newcastle, NSW, Australia, 2Centre for Clinical Epidemiology and Biostatistics, University of Sydney, Sydney, NSW, Australia

OBJECTIVES: Australia’s ‘Better Access Scheme’ (BAS) aims to improve access to mental health care by providing 10 subsidised counselling visits per year for Australians with diagnosed mental health problems. This study compares improvement in mental health outcomes between women who do and do not take the BAS services. METHODS: The Australian Longitudinal Study of Women’s Health data provided baseline and follow-up measures linked to Australia’s Mental Health Services Scheme data, which provided claims for visits to counselling services under the BAS. Regression models were adjusted for a propensity score estimate on the use of the BAS services based on baseline characteristics. These propensity scores were then used in stratified analyses to investigate the effectiveness of the BAS gap between BAS use and improvement in mental health outcome scores. RESULTS: Women using the BAS services had a lower mean mental health baseline scores compared to those not using the BAS (52.4 vs 62.2, respectively). Quintile-specific pooled analysis showed statistically significant decreased odds of improvement in follow-up mental health outcomes between women who did and did not use the BAS services (OR: 0.601, 95% CI: 0.43-0.85) after controlling for propensity for treatment. The odds ratio at follow-up between women that did and did not use the BAS services was 1.70 [1.49-1.93]. CONCLUSIONS: The implementation of the BAS has resulted in women with poorer mental health receiving the government services and improved mental health outcome scores for those women that completed treatment. With increasing mental health problems in Australia services such as the BAS are vital in assisting recovery.

PHS109

HIGH UTILIZERS OF HEALTH CARE RESOURCES: RESULTS FROM THE MULTICENTER COMPACT STUDY OF COMPLIANCE IN PATIENTS WITH SICKLE CELL DISEASE AND UTILIZATION OF IRON CHLATION THERAPY

Li J, Adams-Graves F1, Kenter-Wachho F1, Onou F1, Saanse M1, Magestro M1, Marcellari A1, Vekemen P1, Bieri C1, Adams A1, Duh M1, M1, University of Miami, Miller School of Medicine, Miami, FL, USA, 2University of Tennessee Health Science Center, Memphis, TN, USA, 3Medical University of South Carolina, Charleston, SC, USA, 4Howard University, Washington, DC, USA, 5Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA, 6University of Miami, Miller School of Medicine, Miami, FL, USA, 7University of Tennessee Health Science Center, Memphis, TN, USA, 8Medical University of South Carolina, Charleston, SC, USA, 9Howard University, Washington, DC, USA, 10Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA

OBJECTIVES: To understand characteristics of sickle cell disease (SCD) patients ≥16 years old who have increased utilization of inpatient (IP) and emergency department (ED) resources. METHODS: Medical records of 254 SCD patients ≥16 years old were retrospectively reviewed. High utilizers (HUs) were defined as patients with ≥5 days of IP+ED care for SCD-related complications per year. Patients were classified in cohorts based on cumulative blood transfusion and iron chelation therapy (ICT): <15 units, no ICT (CI1), ≥15 units, no ICT (CI2), ≥15 units, ICT (CI3). SCD complication rates were expressed as the number of SCD complications per patient per year (CPPY). Cohort comparisons used rate ratios (RRs). A logistic regression was used to identify risk factors for high IP+ED utilization among HUs (C2+; C3). C1: 31.0% (95% CI: 27.4-34.8%), C2: 37.487%), C3: 23.2(92%). HUs were younger (median [range]: [21-65 [23-16-59] years old), and had shorter observation time (mean: 6.7 vs. 8.2 years). HUs accounted for 64% of SCD-related complications and 88% of IP+ED days. Fain (81%) and Rourke (79%) were kept in hospital (mean: 30% of IP+ED days), while residents in hospital (mean: 30% of IP+ED days) was higher among HUs (16.3; 16.8-16.99) vs. other patients (0.89 [0.80-0.94]). Among regularly transfused HUs (C2+; C3), those with ICT had fewer IP+ED days (C2 vs. C3 RR [CI]: 1.2 [1.24-1.36]) and IP+ED readmissions within 30 days (1.70 [1.49-1.93]). History of infections was associated with an increased risk of high IP+ED utilization.
PHS111 BLOOD PRESSURE TESTING AT COMMUNITY PHARMACIES PROMOTES BETTER HYPERTENSION MANAGEMENT
Tripodi M, Lou Y, Huang Z, Nadas J
Walgreens Co., Deerfield, IL, USA
OBJECTIVES: Hypertension increases the risk for heart disease and stroke and is a leading cause of death in the United States. In September 2011, the Department of Health and Human Services launched the Million Hearts® initiative to fight heart disease. To support this effort, a large pharmacy chain offered free blood pressure (BP) tests at locations nationwide. This study assesses the clinical impact of administering BP tests at these community pharmacies. METHODS: This retrospective, pre/post, cohort study included 123,427 self-reported hypertension patients, 18 years or older, who in 2012 received one or more BP tests at a Walgreens pharmacy. Tests are considered abnormal when BP ≥ 140/90. Outcome measures include BP test results and anti-hypertension medication use 12 months pre and 6 months post BP tests. Chi-square was used to determine significant differences between groups. RESULTS: 72,166 (58.47%) patients had abnormal test results. Patients without or non-adherent to anti-hypertensive medications (PDC < 80%) prior to testing were more likely to have abnormal test results, 60.02% of patients without any review of the medications and 61.36% of non-adherent patients compared with 56.22% of adherent patients (P < 0.001). Patients with abnormal test results were more likely to add anti-hypertensive medications post testing, 10.17% of patients with abnormal results and only 6.27% with normal results added any anti-hypertensive medications post testing (P < 0.0001). Some patients in both groups discontinued medication. However, after testing, the abnormal BP patient group had 2.99% net increase (P < 0.0001) and the normal BP patient group had 1.32% net decrease (P < 0.0001) of anti-hypertensive medications used. CONCLUSIONS: BP testing at community pharmacies appears to improve appropriate utilization of anti-hypertensive medications. Patients reporting hypertension without anti-hypertensive medications and those non-adherent were more likely to have abnormal BP results. BP testing also prompted patients to take anti-hypertensive medications. This public/private collaboration promoted better hypertension management and ultimately helped fight heart disease.

PHS112 MAIL ORDER PHARMACY USE AND ASSOCIATED HEALTH EXPENSES IN ADULTS WITH DIABETES
Navez X1,2, Davis Amani ML3, Wu J3
1South Carolina College of Pharmacy – USC Campus, Columbia, SC, USA; 2University of Maryland, Baltimore, MD, USA; 3University of South Carolina, Greenville, SC, USA
OBJECTIVES: To identify predictors associated with mail order pharmacy (MOP) use and investigate whether mail order pharmacy use produces cost savings for patients and payers in diabetes care. METHODS: We conducted a longitudinal cross sectional study covering the years 2006-2010 among a Medicaal Expenditure Panel Survey (MEPS) household participants who were 18 years or older, diagnosed with diabetes and took antidiabetic medications for treatment. The types of pharmacy from which the medications were purchased were measured, including mail-order and community pharmacy. Using the 2010 MEPS data, we identified potential predictors such as socioeconomic and health-related variables associated with mail order use were identified using multivariable logistic regression. Annualized average health care expenses per patient including prescription drug and medical care expenses during the 2 year period were measured using patient perspectives respectively. The associations between various health care expenses and pharmacy dispensing channels were assessed by multivariable linear regression. RESULTS: We identified a total of 3,668 eligible subjects in our study, representing more than 66 million individuals during 2006-2010 in the United States. Nearly 20% of the subjects filled at least 2 antidiabetic drug prescriptions via mail order pharmacies. The mail order pharmacy users were older, had high school or college degrees and higher incomes, and were more likely to be covered by private insurance. No significant difference in diabetes-related drug expenses paid by the patient themselves was found between mail order and community pharmacy users after adjustment. From the payer perspective, diabetes-related drug expenses and total health care expenses were 35% and 17% higher in mail order users, respectively. CONCLUSIONS: Besides pharmacy benefit design, socioeconomic status plays a role in influencing patient preference of prescription drug dispensing channels in diabetes care, which may affect patient and payer behavior. Mail order use might not produce cost savings on diabetes-related medication use for patients and payers.

PHS113 EVALUATION OF A CHRONIC DISEASE MANAGEMENT SYSTEM FOR THE TREATMENT AND MANAGEMENT OF DIABETES IN PRIMARY HEALTH CARE PRACTICES IN ONTARIO
O'Reilly D, Bower JM1, Sebelia R2, Fettie A1, Hopkins RB3, Assani N2, MacDougall C, Nunoo E, Goeree R3
1PATHWays Research Institute, McMaster University, Hamilton, ON, Canada; 2Master University, Hamilton, ON, Canada; 3F IQ Software Incorporated, Hamilton, ON, Canada, 4St. Joseph’s Healthcare Hamilton, Hamilton, ON, Canada
OBJECTIVES: The objective was to measure the difference between optimal patient care and actual patient care in family practices before and after the introduction of a computer decision support chronic disease management system (CDMS) for diabetes. METHODS: This 1-year, prospective, observational, pre/post-study evaluated the use of a CDMS with a diabetes patient registry and tracker in family practice in patient enrolment models. Aggregate group practice-level data from all rostered diabetes patients were analyzed. The primary outcome was the change in the proportion of patients with up-to-date ABC monitoring (i.e., HbA1c, blood pressure, and cholesterol). Changes in practice care and treatment elements (e.g., retinopathy screening) were also determined. Usability and satisfaction with the CDMS were measured. RESULTS: Nine sites, 38 health care providers and 2,320 diabetes patients were included. The proportion of HbA1c, blood pressure, and cholesterol monitoring increased (95%, 85%, and 45%, respectively). Cholesterol (38%), and ABC (12%) monitoring did not change. The proportion of patients with up-to-date blood pressure monitoring improved, from 16% to 26%. Retinopathy screening was significantly increased (odds ratio: 7.45, p < 0.0001). In this study of SCD patients a minority had previously engaged in PCS. Several ABM variables were predictive of PCS and need factors, undergoing PCS was significantly associated with those who have needed factors, undergoing PCS. The majority of men (95%) and women (80%) received women received the PSA test, and the independent variables such as diagnosis of diabetes, age, race, sex, marital status, family income, years of education, and diabetes insurance status. All analyses incorporated person-level weights and variance adjustment weights (strata and primary sampling unit) provided by MEPS to produce nationally representative estimates. The level of statistical significance was P = 0.05 and all analyses were carried out using the statistical package, STATA IC version 10 (StataCorp, LP). RESULTS: Dental care service use was significantly lower in diabetic persons compared to non-diabetic persons. The mean number of dental visits per person was 1.27-2.47). We identified a total of 3,668 eligible subjects in our study, representing more than 66 million individuals during 2006-2010 in the United States. Nearly 20% of the subjects filled at least 2 antidiabetic drug prescriptions via mail order pharmacies. The mail order pharmacy users were older, had high school or college degrees and higher incomes, and were more likely to be covered by private insurance. No significant difference in diabetes-related drug expenses paid by the patient themselves was found between mail order and community pharmacy users after adjustment. From the payer perspective, diabetes-related drug expenses and total health care expenses were 35% and 17% higher in mail order users, respectively. CONCLUSIONS: Besides pharmacy benefit design, socioeconomic status plays a role in influence patient preference of prescription drug dispensing channels in diabetes care, which may affect patient and payer behavior. Mail order use might not produce cost savings on diabetes-related medication use for patients and payers.

PHS114 DETERMINANTS OF DENTAL CARE UTILIZATION IN ADULT DIABETIC POPULATION
Bose MS, Holmes M
O’Neill Gilling’s School of Public Health, Chapel Hill, NC, USA
OBJECTIVES: Diabetes is known to increase the risk for dental and periodontal diseases as severe periodontitis, gingivosts, keratoma, dental abscesses, cavi- ties and subsequent tooth loss. In order to prevent the oral health complications associated with diabetes, guidelines recommend the use of dental care services and retinopathy screening at least once a year. This study was conducted to investigate the relationship among socio-demographic factors related to the use of dental services in adult diabetic population the United States. METHODS: We performed a cross sectional data analysis of 2010 Medical Expenditure Panel Survey (MEPS) database. All respondents above the age of 18 were used for the analyses. A two part linear regression model was built to analyze the self-reported use of any dental care services adjusted for independent variables such as diagnosis of diabetes, age, sex, race, marital status, family income, years of education, and diabetes insurance status. All analyses incorporated person-level weights and variance adjustment weights (strata and primary sampling unit) provided by MEPS to produce nationally representative estimates. The level of statistical significance was P < 0.05 and all analyses were carried out using the statistical package, STATA IC version 10 (StataCorp, LP). RESULTS: Dental care service use was significantly lower in diabetic persons compared to non-diabetic persons. The mean number of dental visits per person was 1.27-2.47). We identified a total of 3,668 eligible subjects in our study, representing more than 66 million individuals during 2006-2010 in the United States. Nearly 20% of the subjects filled at least 2 antidiabetic drug prescriptions via mail order pharmacies. The mail order pharmacy users were older, had high school or college degrees and higher incomes, and were more likely to be covered by private insurance. No significant difference in diabetes-related drug expenses paid by the patient themselves was found between mail order and community pharmacy users after adjustment. From the payer perspective, diabetes-related drug expenses and total health care expenses were 35% and 17% higher in mail order users, respectively. CONCLUSIONS: Besides pharmacy benefit design, socioeconomic status plays a role in influence patient preference of prescription drug dispensing channels in diabetes care, which may affect patient and payer behavior. Mail order use might not produce cost savings on diabetes-related medication use for patients and payers.

PHS115 PREDICTORS OF PROSTATE CANCER SCREENING USING ANDERSEN'S BEHAVIORAL MODEL OF HEALTH SERVICES USE
Osimanya ME, Jiang S, Thach AV, Ramghade B, Brown C
The University of Texas at Austin, College of Pharmacy, Austin, TX, USA
OBJECTIVES: The purpose of this study was to examine the prevalence and predictors of prostate cancer screen- ing (PCS) in the United States using Andersen’s Behavioral Model of Health Services Use (ABM). METHODS: We analyzed PCS rates in men (aged ≥ 40 years) from 2012 public use files of the Behavioral Risk Factor Surveillance System. The descriptive analysis was conducted as using sampling weights to determine the prevalence of PCS (i.e., had a prostate-specific antigen (PSA) test. Multiple logistic regression, incorporating the sampling weights, within the framework of ABM was used to identify predictors of PCS, the dependent variable. The ABM variables of predisposing (i.e., age, enabling (e.g., insurance), and need (e.g., comorbidities) comprised the independent variables. RESULTS: Among the 129,923 men, 63.41% reported that they had a PSA test. Among all who had undergone PCS, most were married (42.63%) or white (52.81%), and about one-third (31.95%) had a college degree. More than half (55.93%) had been informed about the advantages of the PSA test from a physician before the test. Several ABM variables were predictive of PCS and should be considered when developing future strategies to increase PCS in men aged 40 years and older.

PHS116 EIGHT YEARS OF NATIONAL HEALTH INSURANCE IN GHANA: EVALUATION OF THE HEALTH FINANCING SUB-FUNCTIONS
Hush-Botwe F, National Health Insurance Scheme, Accra, Ghana
OBJECTIVES: To evaluate the NHIS in terms of health financing sub-functions of revenue generation, risks pooling, purchasing of health care using Asiedu Keteke Mutual Health Insurance as a case study. METHODS: The review and participant observation methods were employed to analyze secondary data of the NHIS. A data collection sheet was used to collect membership, revenue and expenditure data whilst reviews were conducted on NHIS website, annual reports,