conducted in Europe. RESULTS: The search identified 25,135 articles, 889 titles were included for further screening and 409 abstracts for the article review step. A total of 36 pharmacists were identified, with 238 primary studies, 129 conducted in Europe. The sample sizes from the included primary studies from Europe ranged from 20 to 15,343 patients with varying chronic conditions including chronic obstructive pulmonary disease, diabetes, and cancer. Of the outcomes more frequently studied, integrated care appeared to improve quality of life and reduce costs, although the evidence often remained inconclusive. CONCLUSIONS: Providing a conclusion across the different chronic conditions is not possible. Therefore, only disease specific conclusions can be drawn. Our review suggests that integrated care might be advantageous for specified groups of patients, e.g. heart failure. Moreover, it impacts health care costs, which is associated with the highest benefit for patients across chronic conditions.

PHS7
AGE-RELATED EMERGENCY DEPARTMENT RELIANCE (EDR) AND HEALTH CARE RESOURCE UTILIZATION IN PATIENTS WITH SICKLE CELL DISEASE (SCD)
Blander M1, Vekeman F2, Sasane M3, Trayee A4, Paley C5, Magesto M6, Duh M8
1Washington University in St. Louis, St. Louis, MO, USA, 2Groupe d’analyse, Montréal, QC, Canada, 3Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA, 4Analysis Group, Inc, Boston, MA, USA
OBJECTIVES: For SCD patients, inadequate care during pediatric to adult transition may result in increased emergency department (ED) utilization. Emergency department reliance (EDR: total ED visits/total ambulatory [outpatient+ED] visits) identifies the proportion of ED visits in relation to all ambulatory utilization and was studied at institutions of tertiary level of care and associated health care costs in SCD patients. METHODS: State Medicaid data from Florida, New Jersey, Missouri, Iowa, and Kansas were analyzed. Patients with ≥2 SCD diagnoses (ICD-9 282.6a) and ≥1 blood transfusion were included. Quartiles of EDR were stratified with EDR visits as ≤20%, 20%-30%, 30%-40%, and ≥40% and health care costs were evaluated. Based on published thresholds, high EDR was defined as ≥0.33. Regression analyses were used to assess risk factors for high EDR and calculate adjusted costs difference between patients with high versus low EDR. RESULTS: A total of 3208 patients were identified; mean (SD) observation period was 6.5 (2.2) years. Mean ED visits/quarter increased from 0.76 to 2.23 between age 15-23, reaching a peak of 2.9 at age 36. The most common complications associated with ED visits were pain, infection, and pneumonia. EDR rose from 0.15 to 0.29 between age 15 and 23, and remained high thereafter. Patients were more likely to have high EDR during the post-transition period (18 years old), OR (ORR) 2.38 (p<0.001) and when experiencing an SCD complication (OR: 4.18, p<0.001) and more likely had high EDR during the post-transition period (18 years old), ORR 2.38 (p<0.001). Patients with high EDR incurred higher inpatient and ED costs, resulting in higher total costs (high vs low EDR, adjusted costs difference, OP $289, IP: $3,485, ED: $120, Rx -$91, total: $3,086, p<0.001 for all. CONCLUSIONS: Compared to children, SCD patients transitioning to adulthood relied more on ED for their care and those with high EDR incurred higher health care costs, highlighting the need to improve access to care for transitioning and adult SCD patients.

PHS73
PHARMACIST-LED SERVICES TO PATIENTS WITH RESPIRATORY DISEASES: FEASIBLE FROM A QUALITY AND REIMBURSEMENT PERSPECTIVE?
Willey V1, Simon S2, Akinni S3, Reinhold J4, Kelly B5, Kim EA6, Willey KH7, Cawley MJ2
1University of the Sciences, Philadelphia, PA, USA, 2Quality Family Physicians, Stockton, DE, USA
OBJECTIVES: Pharmacists are qualified to provide many services that are core to integrated care models. Expanding services to diverse patient populations will increase their patients’ value. This study describes the experience, preliminary outcomes and revenue model justification associated with the implementation of pharmacist-led care for patients with respiratory disorders. METHODS: Medical and billing record review was performed on patients with respiratory symptoms referred to the pharmacist from May 2011 to September 2012 within a community-based, medical home, primary care practice. Patients referred were those with respiratory symptoms in which the physician sought objective lung function data and additional support to assist in properly diagnosing and treating the patient. Pharmacist interventions included collection of a detailed pulmonary and medication history, spirometry, and on applicable patients, disease state education, medication care plans and device education, and smoking cessation. Outcomes described included quality and results of spirometry testing, pharmacist recommendations, recommendations for specialized care and payment for services. RESULTS: Thirty-four patients (76.5% female; mean age 46.9±17 years) were assessed by the pharmacist. Spirometry met American Thoracic Society quality measures in 82.5% of tests with the following results: 64.7% normal, obstruction (8.8% mild, 14.7% moderate, 2.9% severe), asthma (11.8%). Smoking cessation was recommended for 11.8% of patients and 44.1% of patients were identified with chronic obstructive pulmonary disease, diabetes, and cancer. Of the outcomes more frequently studied, integrated care appeared to improve quality of life and reduce costs, although the evidence often remained inconclusive. CONCLUSIONS: Providing a conclusion across the different chronic conditions is not possible. Therefore, only disease specific conclusions can be drawn. Our review suggests that integrated care might be advantageous for specified groups of patients, e.g. heart failure. Moreover, it impacts health care costs, which is associated with the highest benefit for patients across chronic conditions.
generic utilization 72.2% of the claims (range=66.1%-84.8%). The average price of
branded drugs was $217.07 (range=$105.63-$357.51). The average pharmacy dispensing fee was $14.03 for generics and $4.56 for brands (range for both=$1.73-$11.50). The ingredient cost was estimated using average wholesaler price (AWP
(n=25), wholesaler acquisition cost (WAC, n=11) and combination AWP/WAC
(n=10). We found no statistical significant relationship between the number of
claims or the total state expenditures, and the dispensing fee or ingredient cost.

CONCLUSIONS: Dispensing fees and ingredient cost varied among the different
states' Medicaid programs. Those differences were not related to the total utilization indices. This highlights the importance of appropriate reimbursement and dispensing fee policies encouraging generic utilization could result in substantial saving for the Medicaid program.

PHS77
PAYMENT REFORM AND CHANGES IN HEALTH CARE IN CHINA
Gao C1, Liu GG1, Xu F1, Wu H2, Jin XJ3
1Peiking University, Beijing, China, 2Guiyang Medical University, Guiyang, China, 3Feking University Center for Health Economic Research, Beijing, China

OBJECTIVES: As the health care safety net continues to grow in both depth and
breadth, the provider payment system will play an increasing role in the
resource allocation of health care in China. This paper is intended to assess the
primary effects of payment reform of capitation experience and the supplementary
open enrollment policy in Changde city, China. METHODS: In
October 2007, Changde employed a capitation approach to pay for health care
under the Urban Resident Basic Medical Insurance (URBMI), while the fee-for-
service approach was still used by the Urban Employee Basic Medical Insurance
(UBBMI). In the city and other programs as well. Using the national URBMI
Household Panel Survey from 2008-2010, we conducted a set of difference-in-
difference (DD) models to assess the capitation policy effect on cost and
utilization outcomes while controlling for other differences between Changde and
different programs. RESULTS: The study finds the payment reform to reduce its
inpatient out-of-pocket cost by 19.7%, out-of-pocket ratio by 9.5%, and length of
stay by 17.5%. The total inpatient cost, drug cost ratio, treatment effect, and
patient satisfaction showed little difference between FFS and capitation models.
The robust tests find the relatively poor health subsample present a similar
pattern with the results based on the full sample; as for the population cohort
with good and very good self-rated health conditions, the payment reform in
Changde will have no difference on either providers or patients. CONCLUSIONS: We
conclude that the payment reform in Changde led to a decrease in the financial
burden of patients for inpatient care and improve hospital efficiency, without
compromising quality of care. The total cost measures remain no change between
capitation and FFS settings, which can be research topics for further
studies concerning the long-term effect of capitation approaches.

PHS78
PERSISTENCE WITH GLAUCOMA THERAPY IN A LARGE HEALTH ORGANIZATION IN ISRAEL
Goldstein I, Levkovich-Verbin H, Shalev Y, Zigmam N, Chodick G
Maccabi Healthcare Services, Tel Aviv, Israel

OBJECTIVES: To investigate treatment patterns of glaucoma and persistence to
therapy. In a large health organization (Maccabi) in Israel. METHODS: A retrospective
cohort study, conducted using the electronic medical databases of Maccabi
Healthcare Services, a 2 million member HMO in Israel. The study population consisted of all patients who were newly diagnosed with glaucoma between 2003 and
2010 and for whom we had a complete set of individual personal characteristics
demographics, relevant surgical procedures, prescribed and dispensed anti-
glaucoma medications, and caregiver characteristics. We investigated quality of
care for glaucoma, compliance ophthalmology follow up, performance of
ophthalmology tests, as well as persistence to treatment by drug type. Persistence
was analyzed by proportion of days covered by drugs during follow up time,
ignoring overlaps due to overuse and simultaneous combination of several types of
eye drops. RESULTS: A total of 11,512 incident glaucoma patients, who were
diagnosed between 2003 and 2010 were identified. One quarter of these patients
remained naive through the follow-up period, additional 20% were non-adherent
with therapy (covered less than 20% of the follow up time), and only 13%
exhibited high persistence (covered at least 80% of the follow-up period). The
most common physician was ophthalmologist both at treatment initiation (70% of
initial prescriptions were ophthalmologist vs. 7% by general practitioner) and
googone (97% ophthalmologist vs. 2% by general practitioner). CONCLUSIONS: The current study demonstrates the potential use of automated
medical databases to characterize treatment patterns of glaucoma, illustrate the
great variety of drug therapies, and describe adherence to treatment in the
community. The increased comorbidity and mortality among these patients has
important implication for health authorities for prevention and delivery of
health-care services.

PHS79
KNOWLEDGE, AWARENESS AND ATTITUDES TO RATIONAL USE OF DRUG OF
PATIENTS AND ITS INFLUENTIAL FACTORS IN BEIJING, CHINA
Ye X
Shenyang Pharmaceutical University, Shenyang, China

OBJECTIVES: To investigate outpatients’ knowledge, attitude and awareness on
medication and analyze the influential factors. METHODS: A total of 711
outpatients who consented to participate the survey were recruited from 306
Hospital of P.F.A in Beijing between 2009-2012. The self-administered question-
naire was composed of 22 questions. Multiple linear regressions were run to
explore the influential factors. Data were analyzed using STATA v11.0.

RESULTS: The outpatients investigated showed a poor cognition on rational
use. 84.8% of the patients would stop taking drugs by themselves. 60.1% of
the patients were aware of adverse drug reactions. Age, urban-rural
difference, knowledge of medication, and health status have different degrees of
influence on the medication behavior and medication willingness of
generics, while family income and health insurance have little influence. Information provided by the patients was compared with the prescriptions.

CONCLUSIONS: These results suggest that outpatients in China had much
misunderstanding about drug use. Patients’ education regarding rational drug use is an important issue and deserves urgent improvement.

PHS80
SURGERY AND BIOLOGIC USE PATTERN FOR PATIENTS WITH CROHN’S
DISEASE WHO INITIATED TNF ANTAGONISTS IN A MANAGED CARE SETTING
IN THE UNITED STATES
Gorcyca K, Muszka J, Herrera V, Wang H, Covington MT, Badalamenti S
Sanofi, Bridgewater, NJ, USA

OBJECTIVES: To determine patient demographics and treatment patterns in
patients with Crohn’s Disease (CD) who initiated biologic treatment with a
TNF antagonist (infliximab or adalimumab). METHODS: Patients ≥18 years with
CD who initiated a TNF antagonist between January 2007 and December 2008 were identified from the US IMPACT health insurance claims data-base. Two cohorts were identified; those who received CD related surgery (CDSURG) within a 24-month follow-up and those who did not (CDNon-SURG). Patients were continuously enrolled for medical and pharmacy benefits during 6
months prior to their first TNF antagonist claim (index claim). RESULTS: A
total of 812 individuals with CD were followed over a 24-month period, of which
62% were CDSURG and 38% were CDNon-SURG. The majority of patients (89%)
were 18 to 54 years old with a higher proportion of CDSURG patients in the 18-
34 age range. CDSURG included younger patients (mean age: 37 years) and a lower
percent of females (46%) compared to CDNon-SURG (41 yrs, 59% female). CDNon-SURG patients had higher hospitalization rates (38%) and incurred more
health care expenditures ($15,112) during baseline compared to CDSURG
patients (23%, $13,400). During the last 6 months of follow-up, the percentage of
CDSURG patients on biologics dropped to 44% of the 56% in CDSURG who
discontinued biologics, 31% received no treatment. In contrast, the percentage of
CDNon-SURG patients continuing biologics decreased to 67% with 37% remaining on
e a “biologic only” CONCLUSIONS: Most CD patients (92%) initiated on biologics
did not require surgery, however about one third stopped TNF antagonist
therapy over 24 months. Although 8% of CD patients underwent surgery, they
incurred high direct and indirect costs even prior to surgery. Even with availability of TNF antagonists, due to high discontinuation rate, there is an
unmet need of effective CD treatment options that may delay or prevent disease
progression.

PHS81
SURGERY AND BIOLOGIC USE PATTERN FOR ULCERATIVE COLITIS PATIENTS
INITIATING THERAPY WITH INFLIXIMAB IN A MANAGED CARE SETTING IN THE
UNITED STATES
Sanofi, Bridgewater, NJ, USA

OBJECTIVES: To identify patient demographics and treatment use patterns in
patients with Ulcerative Colitis (UC) who initiated biologic treatment with
infliximab in a managed care setting. RESULTS: Patients with UC (ICD-9 code
556.X) who initiated infliximab between January 2007 and December 2008 were
identified from the US IMPACT health insurance claims database. Two cohorts
were identified based on whether they received UC related surgery (UCSURG)
or did not receive a UC related surgery (UCNon-SURG) within a 24 month follow-up.
All patients were continuously enrolled for both medical and pharmacy benefits
during the 6 months prior to their first infliximab claim (index claim) and 24
months post index claim. RESULTS: A total of 264 individuals with UC were
followed over 24-months, of which 84% did not receive UC surgery (UCNon-SURG)
and 16% underwent surgery (UCSURG). In both cohorts, mean age was 42 years
and 45% were women. The majority of patients (80%) were 18 to 54 years old
with a higher proportion of UCSURG patients in the 35-44 year group. Results
from the 6-month baseline period, UCSURG patients had higher hospitalization
rates (40%) and incurred more health care expenditures ($17,717) than UCNon-
SURG (22%, $11,774). In the 24 month follow-up, 60% of patients within UCSURG
underwent surgery during the first year following their index claim. Seventy
percent of UCNon-SURG patients continued biologics with 34% remaining on
a “biologic only” compared to UCSURG, where 70% had no treatment.

CONCLUSIONS: Most UC patients (84%) initiated on infliximab did not require
surgery. Continued biologic treatment (70%) in the managed care setting is needed to further understand reasons for discontinuation of
biologic treatment. Although 16% of UC patients underwent surgery, they
incurred high direct and indirect costs even prior to surgery. There is an unmet
need of effective UC treatment options that may delay or prevent disease
progression.

PHS82
ASSOCIATION BETWEEN DRUG DEPENDENCE AND RADICAL PROSTATECTOMY
COMPLICATIONS IN ELDERLY