January through December 2014 were identified using the IBM Truven Health Analytics MarketScan® Research Databases. The eligible patients were older than 18 years with a continuous 12-month insurance coverage before and after the initial osteoarthritis diagnosis (index date), with no osteoarthritis diagnosis 12 months prior to index date. We compared demographic and clinical characteristics between high-cost (top 25 percentile) and low-cost patients (the remaining study population). The main drivers of costs in the high-cost patients (HCP) were assessed using multiple logistic regression. **RESULTS:** A total of 55,466 osteoarthritis patients aged 54 years (standard deviation [SD]: 7.47), consisting of 58.1% of females were identified. A total of 13,900 patients with the highest costs accounted for 63.3% of expenses of the total study population. The HCP cohort had higher Charlson comorbidity score (mean [SD]: 0.6 [0.75] vs. 0.8 [1.27]) and was more commonly diagnosed with mental disorders (43.6% vs. 31.2%, p<0.01) compared to low-cost patients. Factors associated with being osteoarthritis HCP included hip and/or knee arthroplasty (odds ratio [OR], 8.6; 95% confidence interval [CI], 8.1-9.0), monoclonal antibody therapy (OR, 3.5; 95% CI, 2.7-4.4), at least one emergency department (ED) admission (OR, 2.2; 95% CI, 2.0-2.3), rheumatism (OR, 1.5; 95% CI, 1.4-1.6) and obesity (OR, 1.5; 95% CI, 1.5-1.6). **CONCLUSIONS:** High-cost privately insured osteoarthritis patients are associated with increased risk of hip/knee arthroplasty, monoclonal antibody therapy, ED admission, rheumatism and obesity, which are identified as key cost predictors. Cost reduction strategies in high-cost osteoarthritis population should be tailored to these cost drivers.

PMS24

THE COST OF COMORBID DEPRESSION AMONG PATIENTS WITH RHEUMATOID ARTHRITIS

Wang Y

The University of Georgia, Athens, GA, USA

OBJECTIVES: The aim of this study was to identify the risk of depression and assess the relationship between comorbid depression, healthcare utilization and healthcare expenditures in patients with rheumatoid arthritis (RA). **METHODS:** We used 2015 Medical Expenditure Panel Survey (MEPS) to identify patients with RA and depression. The risk of being depressed was estimated using multiple logistic regression with survey weights. Generalized linear regression was employed to evaluate whether depression is statistically significantly associated with increased utilization and cost for office-based provider care, hospital outpatient care, hospital inpatient care, emergency room care and prescription medications. The results were adjusted for age, sex, race, marital status, education, health insurance, metropolitan area status, region, income level, and comorbidities. **RESULTS:** A total number of 6,290 RA patients were identified from 2015 MEPS data set, representing a population size of 244,515,143. Of all the RA patients in 2015, 1,163 were found to have medical records of comorbid depression. Patients with RA were 2.1 times more likely to be depressed after adjusting for confounding variables (95%CI 1.80-2.42). Depressed patients had more office-based visits (p<0001), emergency room visits (p=0.0136), hospital admissions (p=0.0330), filled more prescriptions (p<0.0001), spent more on outpatient care (p=0.001), prescription medications (p=0.0003) compared to their counterparts. The difference in total health care cost per person was around $4,000. **CONCLUSIONS:** RA is associated with an increased cost and utilization of health care. Collaborative care might be indicated for future cost savings.

PMS25

FREE-FLAP MANDIBULAR RECONSTRUCTIONS: PATIENT DEMOGRAPHICS AND RESOURCE UTILIZATION IN THE UNITED STATES

Ruppenkamp JW[1], Holy CE[1], Vanderkarr M[2], Chitnis AS[1], Sparks C[3]

[1]*Johnson & Johnson, New Brunswick, NJ, USA,* [2]*DePuy Synthes, Inc., Raynham, MA, USA,* [3]*DePuy Synthes, West Chester, PA, USA*

OBJECTIVES: Reconstructive surgery for mandibular defect often requires autologous tissue harvesting. This approach is successful in 95% of cases but is complex. Patient post-operative healthcare use and morbidity is not well characterized. This study was designed to better understand patient presentation and economic outcomes in the commercially-insured population. **METHODS:** the Truven Commercial database was queried. All patients with inpatient admissions from 01-01-2007 to most current (up to 09-2017) with concurrent procedure codes for mandibular repair and bone flap/autograft harvesting were identified. All patients had at least 6 months continuous enrollment pre- and 30-days post index. Patient demographics and comorbidities (including Elixhauser Comorbidity Index (ECI)) at time of surgery were identified. All visits post-index were analyzed. Cost of care for the index and post-operative events were adjusted for inflation based on 2016 consumer price index. **RESULTS:** 1,426 patients were identified (average age: 26.5, 42.1% pediatric, 46.8% female), of which 273 (19.1%) had a diagnosis for mandibular or mouth-related cancer within the 6 months prior to surgery and 94 (6.6%) had an ECI of 3 or greater. Other frequent comorbidities included chronic pulmonary disease (5.5%) and hypertension (10.1%). Index surgery averaged US$ 41,935 (SD: US$42,337). At 12 months post-index, 16.4% had an all-cause inpatient readmission (6.5% including orthopedic or orthognathic procedures, 9.9% for non-orthopedic treatments), resulting in an average per-person cost of readmission of US$7,019 (SD: $26,581). In the outpatient setting, patients averaged 2.1 visits for orthopedic or post-operative care-related diagnoses or procedures in the 12 months post index, of which 1.6 was for physical therapy or prosthesis management and 0.17 for orthognathic care. Cost of post-operative outpatient care averaged US$1,542 (SD: 4,798) per patient. Total 12-months care thus averaged US$ 50,496 (SD: 73,716). **CONCLUSIONS:** Nearly one in six patients with mandibular reconstruction are readmitted for subsequent care in the 12 months post-index.

PMS26

COSTS AND TRENDS IN THE USAGE OF BIOLOGICAL THERAPY FOR RHEUMATOID ARTHRITIS - A RETROSPECTIVE STUDY

Santos-Moreno P[1], Buitrago-Garcia D[2], Villarreal L[3], Alvis-Zakzuk N[4], Carrasquilla M[4], Alvis Guzman N[5]

[1]*Biomab, bogota, Colombia,* [2]*SIIES investigation and research, Colombia, bogota, Colombia,* [3]*Biomab, center for rheumatoid arthritis, bogota, Colombia,* [4]*Alzak Foundation, Cartagena, Colombia,* [5]*ALZAK Foundation- Universidad De La Costa, Barranquilla, Colombia*

OBJECTIVES: Rheumatoid arthritis (RA) autoimmune disorder is characterized by joint pain, stiffness, and impaired functionality. The disease is characterized for its variability in terms of the cost therapy, especially the biological one, compared to other treatment alternatives. We aimed to examine the costs in patients with RA receiving biological therapy and to describe global change in Disease Activity Score 28 (DAS28). **METHODS:** Under a T2T model, we followed patients with RA receiving biological therapy during 12 months; each patient had a minimum of 6 follow-up visits. Clinical follow-up was defined according to DAS28 as follows: every 3-5 weeks (DAS28>5.1), every 7-9 weeks (DAS28≥3.1 and ≤5.1), and every 11-13 weeks (DAS28< 3.1). Tender joint count, swollen joint count and DAS28 were measured on each visit. We stratified patients in four groups: remission, low disease activity (LDA), moderate disease activity (MDA) and severe disease activity (SDA). Means and standard deviations were estimated for continuous variables and categorical variables were presented as percentages. We assessed the overall drug expenses; costs were presented in US dollars at the official rate of exchange for December 2017. **RESULTS:** 606 were included, 83% were female, mean age was 60 years ±11. We achieved remission in 29.63 % of patients, and 22.56% in LDA (at overall 52.2% of response rate). Regarding therapy, 27% received Certolizumab, followed by Etanercept 17%, Abatacept 13%, Rituximab 9% Tocilizumab 9%, Golimumab and Tofacitinib 7%, adalimumab 6% and infliximab 4%. The cost therapy for 12 months was 5.039.840 Million/Dollars for all patients. **CONCLUSIONS:** Our study showed an evident global improvement of DAS28 in a cohort of RA patients receiving biological therapy. Although the therapy is effective, ratios of cost-effectiveness should be considered by stakeholders; further research is needed using a greater sample to verify our results.

PMS27

RATE AND REIMBURSEMENT OF ANKLE SCREW REMOVAL PROCEDURES AFTER SYNDESMOTIC FIXATION

Etter K[1], Villacorta R[2], Putnam M[2]

[1]*Johnson & Johnson Medical Devices, Raynham, MA, USA,* [2]*Johnson & Johnson Medical Device, West Chester, PA, USA*

OBJECTIVES: Screw fixation placement is a common procedure as part of ankle fracture repair occurring in tibiofibular syndesmotic injuries. Few studies estimate how often these screws are removed post procedure. This study examined the rate and reimbursement of screw removal post ankle fracture repair procedure. **METHODS:** Using Truven MarketScan® Commercial database, patients undergoing a syndesmosis fracture repair(index) between 2012 and June 30, 2016 were followed up to 1-year post procedure for screw removal occurrence. Eligible patients had one year continuous enrollment(CE). All patients were followed for incidence of the screw removal procedure. A subset of these patients for which the diagnosis(dx1) was related to infection, implant removal, mechanical failure, or pain and screw removal was in the primary position(inpatient only) were evaluated for the facility reimbursement(total pay) across inpatient and outpatient settings. Analysis was completed using SAS Enterprise Guide 7.1. **RESULTS:** 22,996 patients were identified who received screw fixation in any setting of which 6,064(59%) had one-year CE for follow-up. Most index procedures were performed in an inpatient setting(82%). Average age at surgery was 48 years old. 1,473(24.3%) had a screw removal within 1 year. Mean time to screw removal was 129(SD 80) days. Mean facility reimbursement per procedure was $3,913(SD $3,970, N=654). All but one removal occurred in the outpatient setting(for payment calculation). To avoid one screw removal, 4.1 patients would need to be treated with screw fixation(number needed to treat). Interventions that can avoid all screw removals would yield economic benefit to providers below $954 per index surgery(facility reimbursement/NNT). **CONCLUSIONS:** 24.3% patients undergo an elective or required screw removal within 1 year of ankle fracture repair. Most screw removals occur in the outpatient setting. Methods that eliminate the need for all screw removal can provide direct economic benefit to the health system if priced below $954 per index surgery.

PMS28

THE EFFECT OF MEDICATION CHOICE AFTER TUMOR NECROSIS FACTOR INHIBITOR (TNFI) USE ON THE HEALTHCARE COSTS FOR PATIENTS WITH RHEUMATOID ARTHRITIS: AN INSTRUMENTAL VARIABLES APPROACH

Shahabi A[1], Shafrin J[1], Zhao L[1], Green S[1], Marshall A[2], Curtice T[3], Paul D[3]

[1]*PHE, Los Angeles, CA, USA,* [2]*Bristol Myers Squibb, Lawrence Township, NJ, USA,* [3]*Bristol Myers Squibb, Lawrence township, NJ, USA*

OBJECTIVES: To measure differences in healthcare costs for patients with rheumatoid arthritis (RA) who initiated a targeted disease modifying anti-rheumatic drug (tDMARD), specifically tumor necrosis factor inhibitor (TNFi) therapy, and switched to another TNFi compared to a non-TNFi. **METHODS:** Using 2010-2016 health insurance claims from IMS PharMetrics, RA patients who initiatied a TNFi were identified. We included patients who switched to another tDMARD and were located in a 2-digit ZIP code area with ≥10 patients in the data. The outcome of interest was post-switch monthly costs (total and RA-related) from inpatient, outpatient, and pharmacy claims. We first used an ordinary least squares (OLS) approach to determine costs associated with switching to a non-TNFi versus TNFi while adjusting for patient characteristics. To address the potential endogeneity of the switch-to medication selected, we applied an instrumental variable regression approach, which used variation by ZIP code in non-TNFi prescribing rates as an instrument for individual prescribing choice. **RESULTS:** Of the included 1,940 RA patients who initiated a TNFi therapy,1,467 (76%) switched to another TNFi and 473 (24%) switched to a non-TNFi. Across ZIP codes, the share of patients who switched from TNFi to non-TNFi ranged from 0 to 38.9%. Using OLS, switching to non-TNFi compared to TNFi resulted in lower total costs (-$426, p=0.035) and lower RA-related costs (-$475, p<0.001). Using the instrumental variables regression, the marginal effect of switching to non-TNFi reduced all-cause spending (-$2,532, p=0.047) and showed a larger, but not statistically significant decrease in RA-related cost (-$1,030,