nificant differences were found in adherence across age groups (p=0.34), genders (p=0.43), or races (p=0.62). **CONCLUSIONS:** Adherence to COPD maintenance medications was low among Medicare beneficiaries with COPD.

PRS49

THE EARLY IMPACT OF CLOSING THE COVERAGE GAP ON ANNUAL DRUG EXPENDITURES, OUT-OF-POCKET SPENDING, DRUG UTILIZATION, AND ACCESS TO PRESCRIPTION AMONG SENIORS WITH CHRONIC CONDITIONS

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OBJECTIVES: To measure the extent to which closing the coverage gap will affect drug utilization, access, and OOP spending among seniors with chronic diseases, including respiratory diseases (asthma or COPD), hypertension, hyperlipidemia, psychosis, depression, and diabetes. **METHODS:** A difference-in-difference-in-difference (DDD) analysis from 2008 to 2012 was used. **RESULTS:** The Medical Expenditure Panel Survey data files from 2008 to 2012 imply that closing the coverage gap had no significant impact on the disparities in annual drug expenditures, OOP spending, and total number of prescriptions between minorities and whites. However, it significantly increased the disparity in access to prescriptions between minorities and whites by 3.8 percent. When teasing out the effect by race, the results show that closing the coverage gap had no significant impact on the disparities in OOP spending and total number of prescriptions between African-Americans and whites, while it significantly increased the disparity in access to prescriptions for by 7.3 percent, and significantly decreased the disparity in annual drug expenditures by $1,162. Regarding Hispanics, it significantly increased the disparities in OOP spending and total number of prescription drugs by $325 and 8 prescriptions, respectively. However, it had no significant impact on the disparities in annual drug expenditures and access to prescriptions. **CONCLUSIONS:** The findings of this study demonstrate that the benefits of closing the coverage gap are disproportionately distributed among different racial groups. Closing the coverage gap decreased disparities in annual drug expenditures, OOP spending, and access to prescription drugs for African-American compared to white, while It increased disparities in annual drug expenditures, OOP spending, and total number of prescription for Hispanics compared to whites.

PRS50

REIMBURSMENT AND PRESCRIBING IN EXCHANGE-BASED PLANS: HOW DOES FORMULARY GENEROSITY DIFFER FROM COMMERCIAL PLANS AND IS INDICATION A KEY FACTOR?

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OBJECTIVES: Decisions regarding formulary generosity of exchange-based plans have undoubtedly affected uptake of specific therapies at a time of guaranteed-issue coverage and out-of-pocket maximums. This study examined formulary decisions made by managed care organizations for their exchange-based plans, and assessed the impact of these decisions on brand prescribing for asthma, bipolar disorder, and multiple sclerosis, to discern differences between indications. **METHODS:** Surveys of 120 MCO pharmacy and medical directors, and 270 pulmonologists, psychiatrists, neurologists, and primary care physicians were conducted in 2014 and 2015 to determine formulary coverage on exchange-based plans, and the impact of this coverage on brand prescribing to patients covered by such plans. **RESULTS:** Some 41% of surveyed MCOs reported the formularies of their exchange-based plan and largest commercial plan to be distinct; the exchange-based plans of 52% of these respondents covered fewer brands overall. Furthermore, increased tier 3+ (non-preferred) coverage and/or exclusion of some brands in/from their exchange-based plans versus their largest commercial plans were noted by an average of 8%, 10%, and 0% of MCOs for asthma, bipolar disorder, and multiple sclerosis drugs, respectively. In response, surveyed physicians reported decreased prescribing of specific drugs, particularly those competing versus generics, that were subject to less favorable/complete lack in exchange-based coverage versus traditional commercial coverage. The greatest impact of less favorable exchange-based plan coverage on uptake was on bipolar disorder, where, for example Seroquel XR was prescribed to 8% of exchange-based plan patients versus 5% of commercial plan patients. **CONCLUSIONS:** Less-generous reimbursement on exchange-based plans is evident, demonstrating desires by MCOs to limit costs on these plans. Consequently, there is increased prescribing of generics and preferred brands when available over higher-cost agents. Therapy areas with a number of cheaper options will be most affected, while specialty therapy areas will remain largely immune to this trend.

PRS51

RETURN ON INVESTMENT OF SMOKING CESSATION BENEFIT COMPARISON IN GUANGDONG, CHINA

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OBJECTIVES: Knowing the return-on-investment of smoking cessation (SC) is critical for policy makers to understand its economic benefit and implement effective SC intervention. The study sought to assess the return-on-investment (ROI) of smoking cessation in Guangdong, China and inform its economic benefit to policy makers. **METHODS:** A decision tree model about ROI of SC benefit comparison was developed and adapted, which compared the costs, benefits and outcomes of 2 SC benefit scenarios over 20-year time frame. The main difference between the 2 scenarios was whether SC medicines were covered or not. Key inputs were obtained from available public sources, including smoking population, potential medical costs and savings along with productivity improvement, participants' expected quit rates and relapses, etc. **RESULTS:** If SC medicines are covered, the number of attempts and successes will increase 11 million and 1.3 million respectively in 20 years in Guangdong; the annual medical cost saving will exceed the annual cessation cost in the 6th year and it will be 7.7 times in the 20th year; the annual medial cost plus productivity saving will exceed the annual cessation cost in the 4th year and it will be 9.5 times in the 20th year; the cumulative medical cost saving will exceed the cumulative cessation cost in the 11th year and it will be 2.5 times in the 20th year; the cumulative medical cost plus productivity saving will exceed the cumulative cessation cost in the 7th year and it will be 3.4 times in the 20th year. **CONCLUSIONS:** Considering the attractive ROI results, it's recommended that SC medicines should be covered in the SC intervention.

PRS52

AVAILABILITY AND USE OF EPINEPHRINE AUTO-INJECTORS FOR THE TREATMENT OF ANAPHYLAXIS: RESULTS FROM THE EPIPEN4SCHOOLSÂ® SURVEY

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OBJECTIVES: To assess epinephrine auto-injector (EAI) availability and use for anaphylactic events in US schools during the 2013-2014 school year. **METHODS:** This exploratory, cross-sectional, web-based survey analyzed anaphylactic events in eligible schools participating in the Mylan-sponsored EpiPen4Schools® program, an ongoing initiative providing free EAIs and training to schools nationwide. **RESULTS:** Survey participants consisted of 6019 of the >40,000 schools in the EpiPen4Schools program. A total of 919 anaphylactic events were reported in 11% of schools (607/5683). Importantly, 22% of anaphylactic events (n=187) occurred in individuals with no known allergies; most events (89%, 757/852) occurred in students. Of the 851 events with treatment information, 75% of individuals (n=636) were administered epinephrine via an EAI, 49% (n=310) of whom used the schools' stock EAI provided through the EpiPen4Schools program (despite known prior allergies in 69% of anaphylactic cases). Of note was the disparity between the number of qualifying schools in the EpiPen4Schools program, nationwide, with Illinois having the highest (n=2282) and District of Columbia the lowest (n=4) number of participating schools. **CONCLUSIONS:** One in 10 schools participating in the survey reported ≥1 anaphylactic event during the 2013-2014 school year. Of those individuals treated with EAIs, nearly half used their school's stock EAI, provided through the EpiPen4Schools program, suggesting the value of stocking EAIs for student/staff safety and potential cost savings. Studies on the cost of inpatient care for anaphylaxis indicate approximately $4700 per event. Furthermore, data suggest significantly higher treatment costs and poorer outcomes when treatment with an EAI is delayed. The prevalence of anaphylaxis continues to increase, as do the costs associated with receiving treatment and delaying or failing to receive treatment; removing barriers to access and increasing availability of treatment is an important public health goal.

PRS53

ASSESSMENT OF DISEASE STATE KNOWLEDGE AMONG TB PATIENTS IN QUETTA, PAKISTAN

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OBJECTIVES: The study aimed to evaluate the level of disease state knowledge among tuberculosis patients. **METHODS:** A questionnaire based cross-sectional study was carried out among patients with TB in Fatima Jinnah chest hospital Quetta. Data was collected by a pre-tested structured questionnaire that contain twenty two (22) regarding information related to TB (including etiology, symptoms, transmission, diagnosis and treatment). The descriptive statistics was used to present the data. Inferential statistics was used to the evaluation relationship among study variables. All analyses were performed using SPSS 20.0. **RESULTS:** Majority (60.0%) of the study patients were female and belong to age group of 22 to 31 years (24.28%). Majority (41.4%) of the respondents were illiterate and had received religious education(31.4%). The mean knowledge score was 11.23 ± 3.6 which is categorized as poor knowledge and posters/broachers and other printed material was reported as major source of information. No demographic characteristic was influencing the mean knowledge scores. **CONCLUSIONS:** The study concluded that the TB patients had poor disease state knowledge. Efforts should be made educate the patients regardless to the demographic characteristics, so that better disease control and further spread of infection would be prevented.

SENSORY SYSTEMS DISORDERS – Clinical Outcomes Studies

PSS1

RATE OF ADVERSE EVENT-RELATED TREATMENT CHANGES AND HEALTHCARE COSTS ASSOCIATED WITH TOPICAL ROSACEA TREATMENT

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OBJECTIVES: The presence of adverse events (AEs) associated with topical rosacea agents may lead to a lack of treatment adherence. Previous studies have reported low adherence rates among treated rosacea patients. This study describes the rate of treatment changes due to AEs and associated healthcare costs among rosacea patients receiving a topical therapy. **METHODS:** Patients diagnosed with rosacea (ICD-9-CM: 695.3) who are newly initiating treatment with topical metronidazole, azelaic acid, sodium sulfacetamide/sulfur, benzoyl peroxide between 1/2009 and 10/2013 were identified from MarketScan databases. Patients were required to be ≥30 years old, continuously eligible with medical and pharmacy benefits ≥12 months pre- and ≥3 months post-treatment and without evidence of oral antibiotic or rosacea conjunctivitis during the study period. An AE was defined as a treatment switch within 2 weeks or medical claim with an AE diagnosis code. Persistence was defined as continuous refill of the index drug/formulation within 1.5 times the days' supply of the prior prescription. Rate of AEs, treatment patterns, and healthcare costs were evaluated in the post-index period. **RESULTS:** This analysis included 49,351 patients. The mean age was 54 years and 25.5% were male. Metronidazole (72.7%) was the most common treatment and the predominant formulation was gel

(70.4%). Approximately 6,270 (12.7%) had a coded AE. Of the AE patients, 3.2% were persistent with treatment despite the AE, 7.4% switched to another treatment within 8.8 days, and 89.4% discontinued therapy within 31.1 days. AE patients incurred $325 (medical: $143, pharmacy: $182) in rosacea-related costs, while patients without AEs incurred $172 (medical: $14, pharmacy: $157). **CONCLUSIONS:** The majority of AEs associated with current rosacea drugs/formulations resulted in treatment switch/discontinuation. New drug/formulation may provide additional treatment options for patients with AEs and lead to improved persistence and better symptom control.

PSS2

INDIRECT TREATMENT COMPARISON OF INTERVENTIONS FOR NEOVASCULAR (WET) AGE-RELATED MACULAR DEGENERATION (WET AMD)

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OBJECTIVES: To undertake a network meta-analysis (NMA) to assess the effectiveness of licensed interventions (aflibercept 2q8, ranibizumab PRN, pegaptanib and photodynamic therapy (PDT)) in the treatment of neovascular (wet) age-related macular degeneration (wet AMD). **METHODS:** A systematic review was undertaken to identify trials comparing any of the interventions to treat neovascular AMD reporting change in best corrected visual acuity (BCVA). A NMA of the studies was carried out using WinBugs. Identified studies often reported results at multiple time points. Hence, a number of models were applied accounting for the time structure in the data. The deviance information criterion (DIC) was used to select the most appropriate model. Multiple separate networks were applied to the data to account for the fact that posologies were equivalent at some time points. **RESULTS:** 21 trials were included in the network. Aflibercept and ranibizumab were found to be statistically superior to PDT and pegaptanib at 12 and 24 months. The mean change from baseline BVCA estimated between ranibizumab and PDT at 12 months was 18.85 [15.42 to 22.26] and at 24 months was 20.62 [17.25 to 23.96]. The mean change from baseline BVCA estimated between ranibizumab and pegaptanib at 12 months was 11.16 [2.93, 20.63] and at 24 months was 11.71 [3.31, 25.06]. Results for aflibercept were quantitatively similar. There was minimal difference in the effectiveness of ranibizumab and aflibercept at any time point: mean difference at 12 months numerically favoured ranibizumab by 0.05 [-1.33 to 1.52] and at 24 months by 0.02 [-1.36 to 1.44]. **CONCLUSIONS:** Aflibercept and ranibizumab are effective treatments for neovascular AMD demonstrating a clinically and statistically significant difference in BVCA compared with PDT and Pegaptanib. There were only minimal (non-statistically significant) differences in the relative effectiveness of aflibercept and ranibizumab at any time point.

PSS3

COMPARATIVE EFFECTIVENESS OF BIMATOPROST 0.03%/TIMOLOL 0.5% PRESERVATIVE-FREE FIXED COMBINATION FOR THE TREATMENT OF OPEN-ANGLE GLAUCOMA AND OHT; INTERPRETING RESULTS FROM A LARGE TREATMENT NETWORK

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OBJECTIVES: A network meta-analysis (NMA) evaluating the effectiveness of bimatoprost 0.03%/timolol 0.5% preservative-free (PF) fixed combination (PF BTFC) solution in single-dose vials for the treatment of glaucoma/ocular hypertension (OHT) compared to alternative therapies has been updated (Harvey et al 2013). The outcome of interest was change from baseline (CFB) in intraocular pressure (IOP). **METHODS:** Systematic searches originally conducted in October 2012 were updated to identify additional randomized controlled trials investigating the efficacy of glaucoma/OHT therapies, where efficacy is defined as IOP CFB. A Bayesian model with random effects for trial, week and time of day was fitted to synthesize the resulting evidence base. **RESULTS:** In total, 170 studies met the pre-determined mixed treatment comparison inclusion criteria, representing 34 unique treatment arms. PF BTFC was numerically superior to all treatments (monotherapies and combination therapies; preserved and PF therapies) in lowering IOP and statistically significant ($p<0.05$) for all but seven of the 33 comparisons. Furthermore, despite some trials being adequately sized and the treatment effect showing similar levels of uncertainty to others in the network, the credible intervals (CI) for these treatments were among the widest in the network. **CONCLUSIONS:** PF BTFC was numerically but not statistically superior to all treatments in lowering IOP. The sample size required to show statistically significant results in NMAs is larger than for head-to-head randomized trials because the precision of comparisons made across a network is proportional not only to the size and uncertainty of individual trials but also to the number of nodes separating treatments (Thorlund 2012). This is thought to be a key driver of the width of CIs for some treatments within this network. Results from the updated NMA will be presented along with a discussion of the interpretation of results for large and complex networks.

PSS4

EFFICACY OF SECUKINUMAB IN PATIENTS WITH PLAQUE PSORIASIS: AREA UNDER THE CURVE OF TREATMENT RESPONSE RATES

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OBJECTIVES: Assessment of how therapies achieve cumulative disease control over time is critical. In two phase III, 52-week trials (ERASURE and FIXTURE), secukinumab—a human, anti–interleukin-17A, monoclonal antibody—was an effective treatment for moderate-severe chronic plaque psoriasis. Pooled analysis of these trials was performed to explore the cumulative efficacy of secukinumab by assessing area-under-the-curve (AUC) of percentage of treatment responders according to Psoriasis Area and Severity Index (PASI) and Dermatology Life Quality Index (DLQI) scores. **METHODS:** All patients who stayed on the same active treatment for 52 weeks were included. Active treatments were subcutaneous secukinumab 300 mg (n=568) or 150 mg (n=570) at weeks 0, 1, 2, 3, and 4, followed by dosing every 4 weeks, and subcutaneous etanercept 50 mg twice weekly for 12 weeks and then once weekly (n=323). Total AUCs over the 52-week period by percentage of PASI-75/90/100 and DLQI-0/1 (no impact on patient quality of life) responders—measuring overall controlled disease time—were determined using all responder numbers at all scheduled visits. **RESULTS:** Total AUCs for patients who received secukinumab 300 and 150 mg, and etanercept, respectively, were: 3857.8, 3286.9, and 2628.1 (PASI-75); 3017.7, 2212.2, and 1531.8 (PASI-90); 1677.0, 978.9, and 452.5 (PASI-100); and 3029.8, 2492.2, and 1991.4 (DLQI-0/1). Total AUC ratios for secukinumab 300 and 150 mg, respectively, vs etanercept were 1.47 and 1.25 (PASI-75); 1.97 and 1.44 (PASI-90); 3.71 and 2.16 (PASI-100); and 1.52 and 1.25 (DLQI-0/1). Total AUC ratios for secukinumab 300 vs 150 mg were 1.17 (PASI-75), 1.36 (PASI-90), 1.71 (PASI-100), and 1.22 (DLQI-0/1). **CONCLUSIONS:** In patients with moderate-severe plaque psoriasis, greater AUCs by PASI-75/90/100 and DLQI-0/1 responders were achieved with secukinumab 300 mg, followed by secukinumab 150 mg and etanercept. This analysis suggests that secukinumab 300 mg resulted in the best overall disease control over time.

PSS5

KNOWLEDGE AND PRACTICE OF PHARMACY STUDENTS REGARDING THE USE OF SKIN WHITENING PRODUCT

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OBJECTIVES: The aim of this study was to assess the knowledge and practice of International Islamic University Malaysia (IIUM) Kuantan Undergraduate Pharmacy students on the use of skin whitening product. **METHODS:** A self-administered questionnaire on the use of skin whitening product was distributed to IIUM Kuantan Undergraduate Pharmacy students at IIUM Kuantan Malaysia. **RESULTS:** Three hundred and nine (309) of four hundred (400) students responded (77% response rate). The highest percentage of participants is from year three students which is 33.3% while year four students are the least which is 18.8%. The mean of knowledge score, regardless of their year of study is 6.75 over 14. Among the user and non-user of skin whitening products, user shows higher mean knowledge score which is 7.5041 than non-user which is 6.2527.Of the participants, 39.8% (123/309) are using the skin whitening products. 90.8% (108/119) of the respondent read the instruction of the products before using them. **CONCLUSIONS:** It is proven that the user of skin whitening products has better knowledge about the product than the non-user. Half of the participants are still practicing poor practice in using the skin whitening products. There is a need to educate the students about the proper usage of skin whitening products to avoid any misuse of these products.

PSS6

ANTIDEPRESSANT USE IN PATIENTS WITH AGE-RELATED MACULAR DEGENERATION AND DEPRESSIVE SYMPTOMS: BASELINE RESULTS FROM THE LOW VISION DEPRESSION PREVENTION TRIAL

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OBJECTIVES: Characterize baseline utilization of antidepressant and psychotropic medications in older adults with age-related macular degeneration (AMD) and depressive symptoms. **METHODS:** Patients ≥65 years with bilateral AMD and subthreshold depressive symptoms were recruited from a large private retina practice affiliated with a tertiary eye care institution to participate in the Low Vision Depression Prevention Trial testing a multi-component intervention that combined low vision rehabilitation (LVR), home-based occupational therapy, and behavioral activation versus supportive therapy with LVR. Variables considered were age, sex, race, education, marital status, living situation, medical comorbidity, depressive symptoms, and medication use. Medications of interest included prescription antidepressants and psychotropics. Depressive symptoms were measured using the Patient Health Questionnaire-9 (PHQ-9). Scores range from 1 to 27, with higher scores indicating greater severity. Scores ≥5 indicate at least mild depression. **RESULTS:** Of the 188 participants, 70% were female, 98% Caucasian, and the mean age was 84. The mean PHQ-9 score was 5.5 (SD 2.3), and 32% were taking at least one depression and/or psychotropic medication. For those reporting these medications, 47 (25%) reported 1 medication, 12 (6%) reported 2 medications, and one (0.05%) reported 3 medications. Participants with higher PHQ-9 scores were more likely to report ≥1 depression and/or psychotropic medication ($p = 0.001$). No significant associations were found between use of these medications and demographic or medical variables with the exception of cardiovascular disease ($p = 0.033$). **CONCLUSIONS:** Individuals with AMD are at risk for depressive disorders due to the substantial impact vision loss has on quality of life. In this study, about one third of patients reported depression and/or psychotropic medication treatment. While this rate is higher than prior studies, findings suggest an opportunity to increase the number treated with medications and/or behavioral approaches.

PSS7

STUDY OF PSYCHOLOGICAL STRESS AND ACNE VULGARIS AMONG PHARMACY STUDENTS

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OBJECTIVES: Acne vulgaris is described as a common skin disease involving blockage and inflammation of pilosebaceous unit such as hair follicles and sebaceous gland. As many factors may contribute to the formation of acne, this study attempt