were published in peer-reviewed journals. Search was conducted using generic names of the drugs and the phrase “cost effectiveness” in abstract of the published study.

RESULTS: During 2003-2008, the number of published studies on “cost effectiveness” have increased by more than 30%. There is a large variability in CERs for same drugs for different indications, in some cases also variability for same drug. Primary care drug costs had lower and variable CERs than specialty drugs. Variations also exist in methodology used by different groups in modeling cost effectiveness, especially for time horizon and comparator. Majority of primary care drugs were modeled for a time horizon of 35-40 years or lifetime to demonstrate cost effectiveness.

CONCLUSIONS: This analysis shows the range, variability and methods used for calculation of ICER values for these high budget impact drugs and provides lessons for executives and policy makers.

PRS18 THE COST-EFFECTIVENESS OF ROFLUMILAST IN THE MANAGEMENT OF SEVERE COPD IN THE UK SETTING
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OBJECTIVES: Despite availability of current treatments, patients with chronic obstructive pulmonary disease (COPD), associated with chronic bronchitis, often experience frequent (life-threatening and costly) exacerbations in UK clinical practice. The aim of this analysis was to estimate the long-term costs and health outcomes associated with the use of roflumilast in the maintenance treatment of severe COPD in the UK setting. METHODS: A Markov model was constructed to simulate the decline of patients through stages of COPD (as defined by the GOLD) and death. Transition probabilities were derived from published epidemiological sources. Community- and hospital-treated exacerbations were modeled as events within each health-state. Analysis was conducted for roflumilast in different positions within the care pathway: replacing LABA/ICS as an add-on to LABA/MA, replacing LAMA as an add-on to LABA/ICS, and; add-on to triple therapy (LAMA + LABA/ICS) vs. placebo. Relative rate ratios of exacerbations for therapeutic regimens were determined in an independently conducted mixed treatment comparison. Direct costs, health state utilities and exacerbation disutilities were sourced from UK costs and the published literature. Analyses were conducted from the UK NHS perspective, based on a 30-year time horizon, with costs and outcomes discounted at 1.5%. One-way and probabilistic sensitivity analyses were conducted. RESULTS: At monthly cost of £38.23, replacement of LABA/ICS with roflumilast was shown to be a dominant strategy, projected to improve quality-adjusted life expectancy by 0.104 QALYs, and reduce total costs by £40. Replacement of LAMA with roflumilast yielded an ICER of £454/QALY, and adding roflumilast onto triple therapy yielded an ICER of £263/QALY. Results were sensitive to the cost of hospital-treated exacerbations, relative rates of exacerbation and drug costs. CONCLUSIONS: Roflumilast may represent a cost-effective treatment option in the UK, when used as either an add-on to, or replacement for existing agents, in the management of severe COPD patients.

PRS19 COST-UTILITY OF VARENCLINE VERSUS INTERVENTIONS AVAILABLE FOR QUITTING SMOKING IN PANAMA USING THE BENSECO MODEL
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OBJECTIVES: In Panama, between 13.5-16.5% of all deaths are associated to tobacco consumption. The Ministry of Health (MoH) determined that tobacco use is associated to seven of the leading causes of death in the country. The aim of this study was to model the incremental cost-effectiveness ratios for varenicline compared to bupropion, nicotine replacement therapy (NRT) and unaided cessation for quitting smoking using a time horizon of 20 years from an institutional perspective. METHODS: The Benefits of Smoking Cessation on Outcomes (BENSECO) simulation model was used for an adult cohort of subjects (n=2,249,676). BENSECO model contains projected outcomes for cardiovascular diseases, chronic obstructive pulmonary disease, lung cancer and stroke. The smoking cessation therapies evaluated were: varenicline (0.5-2 mg/day) versus bupropion (300 mg/day), NRT (5-10 mg/day) and unaided cessation. Effectiveness and utility measures were collected from published literature. Unit costs and resource use data was gathered from the Panama’s MoH(2009). Costs (expressed in 2009US$) and health outcomes were discounted at 3%. Probabilistic sensitivity analyses (PSA) were conducted. RESULTS: Smoking cessation efficacy rates were: 22.5%; 15.7%; NRT 13.7% and 5.9% for varenicline, NRT and unaided cessation, respectively. After 20 years varenicline exhibited the highest number of QALYs gained (2,144,323) against bupropion (1,717 QALYs); NRT (2,222 QALYs) and unaided cessation (1,491 QALYs). QALYs differences showed to be meaningful in the healthcare system. Costs showed varenicline is the least expensive alternative with US$311,795,928 less than NRT and US$240,956,600 less than bupropion. Varenicline dominated all drugs and cost effectiveness. This analysis was performed using Monte Carlo simulation with 100,000 iterations to confirm the robustness of the model. CONCLUSIONS: A cost-utility ratio of $302 MXP for indacaterol, compared to $317 MXP for tiotropium. Likewise, a cost-utility ratio of $298 MXP for indacaterol was obtained, compared to $281 MXP for salmeterol, corroborating that indacaterol is a more cost-effective alternative (dominant) for the treatment of COPD. CONCLUSIONS: From an institutional perspective in Mexico, indacaterol improves QOL more cost-effectively (dominant) than either tiotropium or salmeterol for the treatment of COPD.

PRS22 COPD maintenANCe medICATION adheRence: INFLUENCE ON HOSPITALIZATIon AND SPENDIng IN A mEdICARE POPULATION
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OBJECTIVES: This study examines the influence of medication-taking behaviors on hospitalization and spending among Medicare beneficiaries with chronic obstructive pulmonary disease (COPD). METHODS: Our cohort was a random 5% national sample of Medicare beneficiaries with COPD included in the Medicare Part D plans (PDPs) in 2006 and 2007 who used COPD maintenance medications (n=43,666). We conducted a retrospective cross-sectional analysis of the association of COPD maintenance medication discontinuation (1/2) and adherence (Medication possession Ratio measured as low [MPR<0.00]; moderate [MPR 0.3-0.7] or high [MPR>0.80]) on all-cause hospitalization and total, Medicare Part A, B, and D spending. COPD diagnosis was assessed using ICD-9-CM codes (491.xx, 492.xx, 496.xx) in inpatient and outpatient administrative claims from January 1, 2006 to June 30, 2007. We estimated total costs using data from January 1, 2006-December 31, 2007. Maintenance medications mediated for the relationship of COPD included inhaled corticosteroids (alone or in combination with long-acting β2-agonists), anticholinergics, and methyloxanthines. Logistic regression analysis was used to estimate any hospitalization and ordinary least squares regression to
model spending. We report adjusted relative risks (adjusted_RR) with 95% confidence intervals (CI) for multivariable logistic regressions and adjusted coefficients with standard errors and p values for results from OLS models, controlling for covariates. RESULTS: In multivariable models, COPD maintenance medication discontinuation increased hospitalization risk (RR = 1.08, 95% CI 0.96-1.10) while high MFR reduced hospitalization risk (RR = 0.93, 95% CI 0.91, 0.95) compared to low MFR. Medication discontinuation also increased total spending by $2350 (p < 0.001), driven largely by Part A spending ($4039; p < 0.001) and offset by Part D drug spending reductions ($1853; p < 0.001). High adherence significantly reduced total spending by $4273 (p = 0.001), while moderate adherence reduced spending by $596 (p = 0.05) relative to poor adherence. CONCLUSIONS: Findings highlight the importance of adhering to prescribed pharmacologic regimens of COPD maintenance medication in reducing hospitalizations and associated costs.

PRS25 NON-ADHERENCE IN ISONIAZID TREATED PATIENTS AS MEASURED BY THE TEMPTATION TO SKIP THERAPY (TEST) SCALE

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OBJECTIVES: Isoniazid is highly effective and widely used for TB prevention and treatment; however it must be used consistently for 6 to 9 months to treat latent TB, which is usually asymptomatic. The combination of long-term therapy and lack of symptoms results in high risk for non-adherence. The cost of subsequent treatment for patients with isoniazid resistance is estimated at $1 million per reactivation case prevented. These data highlight the need for more information about adherence with isoniazid in patients with latent TB. The specific aim of this study was to document adherence patterns and reasons for non-adherence among patients with latent TB and examine associations with patient characteristics. We also examined patient’s attitudes toward intentional nonadherence in relation to medical doubts, lack of social support, and medication side effects by using the Temptation to Skip Therapy (TEST) scale.

METHODS: Questionnaires were completed by 211 isoniazid treated patients (aged 18-66) at the Rhode Island Tuberculosis Clinic. Adherence was subsequently measured at 6 and 9 months.

The average score was computed for each TEST subscale and the association with each subscale and the Morsky Medication Adherence Scale (MAS) was examined.

RESULTS: Adherence to INH therapy was 45% (by MAS). Latent TB patients scored highest on the Side Effect (Mean = 1.62) and lowest on the TEST Medical Doubt subscale (Mean = 1.47). Non-Whites exhibited higher mean scores on the Medical Doubt subscale indicating uncertainty toward the need for therapy. Patients with higher scores on the TEST Medical Doubt subscale showed higher non-adherence levels.

CONCLUSIONS: Latent TB patients exhibited low adherence with isoniazid therapy. Fear of side effects and doubts about the need for medication were related to discontinuation of therapy. Better understanding of attitudes toward isoniazid therapy may be beneficial for improving adherence, and reducing costs associated with isoniazid treatment.

PRS26 IMPACT OF MORBIDITY, PSYCHOLOGICAL DISTRESS AND LUNG FUNCTION ON PHYSICAL FUNCTIONING IN A RETIRED POPULATION

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OBJECTIVES: Physical functioning scales have been used to assess risk for disability, propensity for healthcare utilization, and impact on quality of life (QOL) scores. Understanding related factors in a nationally representative older population is important for designing effective physical functioning improvement programs. POTENTIAL USE: To potentially decrease utilization and increasing QOL. METHODS: To measure impact of demographics, morbidities, psychological distress and lung function on physical functioning among the retired, a retrospective main effects analysis of data from the Health and Retirement Study (HRS) for subjects surveyed in 2006 and 2008 was performed on a sample of 13,129 participants aged 50+ years (M = 66.4; 45.9% male) with lung function measurement (peak expiratory flow (PEF)) and psychological distress (symptoms of anxiety and depression) assessment (8 question Center for Epidemiologic Studies Depression Scale (CES-D)), and self-reported confirmation of morbidity diagnoses. Morbidities were diabetes (19%), chronic obstructive pulmonary disease (COPD) (8.8%), heart disease (23.6%), cancer (13.7%), and stroke (6.0%). RESULTS: In a weighted multiple regression model of physical function difficulty score, 49% of the variance was explained by analyzed variables. In a weighted logistic regression model for difficulties with: 4 physical functions (max = 12), adjusted for age and race, odds were significantly higher for subjects reporting morbidities of chronic pain (odds ratio (OR) 4.0-7.7), COPD (OR 2.4-3.4), stroke (OR 2.0-2.8), heart disease (OR 1.6-9.7), or diabetes (OR 1.7-2.2). In addition, greater risk for physical function difficulties was associated with psychological distress (OR 2.2-3.0) and low PEF scores (<80% of predicted, OR 1.7-2.1). Among retirees with COPD, 59.3% had low PEF scores compared to 23.7% without, 34.8% had psychological distress compared to 19.6% without. CONCLUSIONS: The second largest database of longitudinal data from the HRS offers valuable resources for understanding factors associated with functional limitations. Mental health and lung functioning are potential areas for focusing improvement efforts.

PRS27 THE DEVELOPMENT OF A PATIENT-REPORTED OUTCOME INSTRUMENT TO EVALUATE NIGHTTIME SYMPTOMS OF COPD

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OBJECTIVES: There is currently no validated tool to evaluate nighttime symptoms in patients with COPD. The purpose of this study was to develop a patient reported outcome (PRO) self-administered questionnaire for evaluating COPD symptoms experienced during the night. METHODS: A review of the literature and interviews with six clinical experts informed the development of a framework for exploring patients’ experience with nighttime symptoms of COPD. Four focus groups were conducted with thirty-seven subjects who experienced COPD symptoms at night or in the early morning. Trained interviewers used a semi-structured interview guide, starting with open ended questions. Grounded theory was applied using HUS review software to identify key concepts and to conceptualize a conceptual framework. A conceptual framework was developed to depict patients’ experience with COPD symptoms at night. Items and response options were based on the qualitative data. Subsequently, one-on-one cognitive debriefing interviews were conducted with 10 COPD patients to assess item readability, comprehensive-