liver disease. Literature review was performed to obtain other probabilities for the model. The effectiveness measure was the number of patients immune to both HAV and HBV. RESULTS: The selective strategy was less costly but less effective with a cost-effectiveness ratio of $105 per patient immune to HAV & HBV. The universal strategy was more effective but more expensive with a cost-effectiveness ratio of $112 per patient immune to HAV & HBV. Compared with the selective strategy, universal strategy was associated with an incremental cost-effectiveness (ICE) ratio of $154 per additional patient immune to HAV and HBV. The universal strategy would become more cost-effective if the cost of combined vaccine reduces by >9.7% to <0.75, if the cost of HBV vaccine increases by >25% to >$34.5, if the cost of blood tests for immunity increases by >23% to >$25.25, or if the prevalence of anti-HBs decreases to <24%. CONCLUSIONS: The selective vaccination strategy for HAV and HBV in our sample of patients with HCV is more cost-effective. However, the ICE for the universal strategy is minimal.

PG15
COST-EFFECTIVENESS OF PEGINTERFERON ALFA-2A (40KD) COMPARED TO LAMIVUDINE FOR THE TREATMENT OF E ANTIGEN NEGATIVE CHRONIC HEPATITIS B IN THE UK
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Peginterferon alfa-2a (40KD) (PEGASYS®), a new treatment option for patients infected with chronic hepatitis B (CHB), offers improved efficacy with a defined treatment duration compared with lamivudine (LAM), but at a higher cost. OBJECTIVE: To assess the clinical outcomes, costs and cost-effectiveness of PEGASYS for the treatment of patients with HBeAg-negative CHB, compared to LAM treatment for one-year and four-years. METHODS: A cost-effectiveness analysis from the UK National Health Service (NHS) perspective using a state-transition Markov model simulating the natural history of HBeAg-negative CHB. Efficacy data were obtained from a recent, randomized clinical trial comparing PEGASYS and LMV in patients with HBeAg-negative CHB. Patients: Hypothetical cohort of 40-year old patients with HBeAg-negative CHB. Interventions: PEGASYS and LAM monotherapy. Measurements: Life expectancy, quality-adjusted life expectancy, lifetime costs, and incremental cost-effectiveness ratios (ICERs). RESULTS: Forty-eight week treatment with PEGASYS compared to LAM resulted in higher total costs, but greater quality-adjusted life expectancy, yielding an ICER of £5047/quality-adjusted life year (QALY) gained. Although there is uncertainty associated with the prognosis of HBeAg-negative CHB, the ICER did not exceed £10,000/QALY gained despite variation in each parameter used in the analysis. In the analysis comparing 48-week treatment with PEGASYS to 208-week treatment with LAM, the ICER was £2787/QALY gained. CONCLUSIONS: Short-term treatment with PEGASYS compared to either short-term or long-term LAM treatment in CHB patients who are HBeAg-negative appears to offer life expectancy benefits at a cost-effectiveness ratio comparable to other currently reimbursed pharmaceutical interventions.

PG16
UTILIZATION, RE-TREATMENT, AND COST OF DIFFERING LENGTHS OF H. PYLORI TREATMENT REGIMENS FROM US HEALTH CARE CLAIMS DATABASES
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1Thomson Medstat, Cambridge, MA, USA; 2Janssen Scientific Affairs, Grayslake, IL, USA; 3Janssen Medical Affairs, LLC, Silesia, MT, USA; 4Eisai, Inc, Teaneck, NJ, USA
OBJECTIVE: Evaluate utilization and expenditure for treatment of gastrointestinal infection with Helicobacter pylori (H. pylori) by different durations of treatment. METHODS: Retrospective analysis of pharmacy and outpatient procedure claims between January 1, 2000 and December 31, 2002 in the MarketScan® Commercial Claims and Encounters, Medicare Coordination of Benefits, and January 1, 1999 and December 31, 2001 in Multi-State Medicaid databases. Patients were required to have one claim for any proton pump inhibitor (esomeprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole) and an antibiotic combination of amoxicillin/clarithromycin (AC) or metronidazole/tetracycline (MT). Treatment patterns were evaluated along with re-treatment rates (regimen effectiveness), testing rates, and pharmaceutical expenditures. RESULTS: In total, 10,203 patients were identified; the average patient age was 52.8 years, the majority of patients were female, 41.6% had privately funded insurance and 58.4% had publicly funded insurance. The majority of patients were naive to H. pylori eradication therapy over the 12 months prior to initial therapy and 92.6% of patients received AC as their antibiotic combination. Fourteen-day triple therapy (PPI + two antibiotics) was prescribed for majority (80%) of patients regardless of H. pylori eradication therapy treatment history. Re-treatment rates did not vary significantly among different triple therapy treatment regimen durations: 7.8% for seven day, 7.6% for ten day, and 7.9% for 14 day regimens. However, the cost of initial treatment for the different treatment durations varied widely, $120.82 for seven day regimens, $178.79 for ten day regimens, and $294.49 for 14 day regimens. CONCLUSION: This study found significant differences in treatment costs by duration of therapy despite similar re-treatment rates among different lengths (seven day vs. 14 day) of H. pylori triple therapy regimens. There are potential economic benefits realized in shorter duration of treatment, as measured by the direct expenditures on the medications themselves, and associated re-treatment and testing expenditures.

PG17
MANAGING CROHN’S DISEASE: USE AND COST OF INPATIENT, EMERGENCY DEPARTMENT AND OBSERVATION UNIT SERVICES DURING ONE YEAR
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OBJECTIVE: Crohn’s disease (aka: inflammatory bowel disease, regional enteritis) is a chronic autoimmune disorder that can occur at any age. This analysis examined use and cost of hospitalizations, observation unit (OU) stays and emergency department (ED) visits during a one-year period by patients with Crohn’s disease. METHODS: Using 2001–2002 Massachusetts ED, OU and inpatient data, a cohort was identified by personal identifiers and ICD-9 principal diagnosis codes (555.0-555.9). An encounter profile was established for each patient starting with the first stay or visit at any hospital, ED or OU in Massachusetts in 2001. From that index encounter, each contact for regional enteritis was tracked for 12 months for that patient. Cost estimates, reported in 2004 USD, include accommodations and ancillary services. Charges were adjusted using a 0.55 cost-to-charge ratio and appropriate inflation indices. RESULTS: A
cohort of 1553 patients was identified (females = 58%). The mean age was 43 years (range: <1–94 years). A total of 2459 encounters were identified during one year (mean encounters per patient = 1.6, range: 1–18) and 12% of patients used more than one location of care. Hospitalizations were 78%, ED visits were 18%, and OU stays were 4% of all encounters. On average, an inpatient stay was 5.6 days at a cost of $8354. Mean ED visit was five hours (average cost of $838). Mean OU stay was 28 hours (average cost of $2457). Cumulative cost for all inpatient, ED and OU encounters for these patients for one year was roughly $17.3 million and this is a conservative estimate of management costs, as it does not include physician, post-acute or usual outpatient care costs.

CONCLUSIONS: These results show that managing this disorder requires use of resource intensive settings at a substantial cost and provide key information for health economic analyses of Crohn’s disease.

EVALUATION OF OTC PRILOSEC STEP CARE PROGRAMS ON THE UTILIZATION AND COSTS OF PROTON PUMP INHIBITORS
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OBJECTIVES: To evaluate OTC Priosec Step Care programs on the utilization and costs of Proton Pump Inhibitors (PPI) in a large pharmacy benefit management setting. METHODS: Using pre-post with control group study design, prescription records from January 1, 2003 to October 31, 2004 were obtained from pharmacy claims database in a large pharmacy benefit management organization. Clients were assigned to one of the four cohorts—formulary changes and step care, step care only, for- mulary change only, no formulary change and no step care (serves as the control group). The number of prescriptions dispensed and the total costs per member per month (PMPM) were analyzed and compared among the groups. RESULTS: From the pre to post period, in the cohort with formulary change and step care, the average number of prescriptions per month decreased by 50.2% and the average PMPM costs decreased by 55.8% (from $3.44 to $1.52). In the step care only cohort, the number of prescriptions decreased by 34% and the average PMPM costs decreased by 25.4% (from $4.2 to $3.13). In the formulary change only cohort, the number of prescriptions decreased by 12% and the average PMPM costs decreased by 22.7% (from $3.38 to $2.61). In the control group, the number of prescriptions decreased by 18.9%, while the average PMPM costs increased by 3.3% (from $4.06 to $4.19). OTC Priosec Step Care programs resulted in PMPM and total annualized cost savings, $2.03 and $4,727,538 for the cohort with formulary change and step care, $1.21 and $757,915 for the cohort with step care only, $0.88 and $1,230,662 for the cohort with for- mulary change only. CONCLUSIONS: OTC Priosec Step Care programs were found to be very effective in controlling the utilization and expenditures on PPIs.

MODELING RISK OF GI EVENTS AMONG MEDICAID NSAID USERS, USING PROPENSITY SCORES
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OBJECTIVES: The differential effects of non specific nonsteroidal anti-inflammatory agents (NSAIDs) compared with cyclooxygenase-2 inhibitors (COX-2) on gastrointestinal (GI) side effects have led to the preference of COX-2s over NSAIDs. The purpose of this study is to evaluate the gastrointestinal risk of NSAIDs compared with COX-2 inhibitors in a Medicaid managed care population. METHODS: Medical and prescription claims were analyzed for all Medicaid enrollees, 18 and older, who received a COX-2 or other prescription NSAID between June, 2000 and June, 2002 and who did not use these drugs for at least six months prior. These Medicaid plans have prior authorization conditions. A logistic model was developed of the propensity for treatment with NSAIDs and stratified patients by quintiles of their propensity score. The propensity that a given patient will be assigned an NSAID or a COX-2 was then assessed. Patients might have similar propensity scores but in fact receive different treatments, hence grouping people with similar scores can provide a basis to observe the treatment effect in patients with similar risk profiles. The model adjusted for demographics, indications for NSAIDs and GI risks. We compared GI event (ICD-9 codes 531–534, 578) rates between NSAID and COX-2 users. RESULTS: Out of a total of 64,053 patients (including 574 COX-2 users), 73% were female, 43% Caucasian, and 29% older than 50. In the propensity adjusted model, there was no significantly higher rate of GI events in NSAID users as compared to COX-2 users (OR = 0.738, 95% CI 0.486, 1.121). CONCLUSIONS: We did not find a significant difference in the GI event rates among patients in this Medicaid population who are started on NSAIDs vs. COX-2 inhibitors. In their decisions, managed care plans might consider possible selection bias, due to prior authorization, and not captured by the propensity adjustment.

IS THE INTRODUCTION OF REFERENCE BASED PRICING FOR PATENT PROTECTED DRUGS A COST-SAVING OPTION FOR HEALTH CARE?
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University of Hanover, Hanover, Germany

OBJECTIVE: In 1989, Germany was first country to introduce reference based pricing (RBP) to cap drug costs. Initially RBP was only applicable to identical ingredients. In 1992 and 1993, RBP was extended to chemically similar drugs of the same indication. In 2004, the German government seeks to extend RBP to patent-protected drugs. With that measure the government expects major cost-savings. Taking PPI (protonpumpinhibitors) in the treatment of GERD (gastroesophageal reflux disease) as an example we demonstrate that the expected savings are not going to be realized. METHODS: A markov model was constructed to evaluate the effect of RBP on the clinical outcomes and costs in the maintenance therapy of GERD. It is assumed that payments by the patients in case of a drug price above the reference price have an effect on the continuation of the therapy. Refusal of payments by the patient can lead to a change or discontinuation of the initially chosen therapy. RESULTS: Due to changes in treatment patterns and the more frequent use of less effective PPI, only 18% of the expected savings are realized. Hence the likelihood of remission per year decreases from 79% to 73% and 6% more hospital admissions are to be expected. CONCLUSIONS: Only a fraction of the expected costs are going to be realized, while the overall effectiveness decreases substantially. The inclusion of patented drugs in reference price schemes should be assessed individually.

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