cal disease in Singapore and Hong Kong from a payer perspective. METHODS: A decision-analytic model was developed to estimate the impact of vaccination with PCV13 relative to PCV7 and to PCV10 on invasive pneumococcal disease (IPD), pneumonia, and otitis media. Model inputs include disease incidence, sequelae, and mortality, serotype frequency, immunity, indirect effects, and cost and indirect effects. Specific local data were obtained from regional surveillance and published literature. Where local data were unavailable, proxy data were derived from published US sources. Vaccine costs assumed price parity to the private market unit price for PCV7 and were based on zero-dose schedule. Costs and outcomes were discounted at 3%. RESULTS: Preliminary results demonstrated that PCV13 was dominant compared to PCV10 and compared to PCV7, both with and without indirect effects, in Singapore and in Hong Kong. The net cost savings per child vaccinated with PCV13 compared to PCV7 was $57 in Singapore and HK$132 in Hong Kong when including indirect effects. With direct effects only, the net cost savings per child vaccinated was SS1 and HK$4 in the respective countries. PCV13 direct effects would reduce IPD by 86% amongst vaccinated children in both regions. Results also indicated further reductions in invasive pneumococcal disease burden in future years. OBJECTIVES: To evaluate the cost-effectiveness and cost utility of three treatment schemes [based on lopinavir (LPV)/r], darunavir (DRV/r) and atazanavir (ATZ/r) used in patients with HIV/AIDS after a first virological failure, in Colombia. METHODS: We designed a Markov model with 10 six-month cycles (5-year timeframe) based on efficacy measures obtained from published clinical trials. We estimated local direct costs from a payer perspective using 2009 official rates for drugs and lab tests, and real costs for AIDS-related complications (exchange rate CoS$1968.82 US$; January, 2010). Utilities (in QALYs) were obtained from the Tuffs CEA registry. Effectiveness was measured as further virological failures, new or “rescue therapy”, AIDS-related complications, and deaths per 1000 patients (estimated through Monte Carlo probabilistic simulation). We applied a 5% discount rate for costs and QALYs. RESULTS: Average cost per patient was US$ 59,334 for DRV/r, US$ 41,825 for LPV/r and US$ 49,135 for ATZ/r. The net cost savings per patient were US$ 10,632 in the DRV/r group, 3.92 in the LPV/r group and 3.84 in the ATZ/r group compared to lopinavir. OBJECTIVES: To evaluate the cost-effectiveness and cost utility of two antifungal medications and information on species identification. Monte Carlo simulation models with certain assumptions and limitations were created to predict costs. Model inputs were determined based on real-world data. Only antifungal medication costs, incorporating doses, frequencies and 2008 average wholesale prices, were considered. One-way and probabilistic sensitivity analyses (2,500 trials) were performed. RESULTS: There were 140 candidemic episodes in 132 patients. Candida species isolated included Albicans (43%), glabrata (29%), parapsilosis (14%), tropicalis (6%), krusei (6%), and others. Compared to Test A, median potential cost savings per patient were $73 (95% CI $14-$104, Test B) and $51 (95% CI $22-$130, Test C). Minimal cost savings per patient were $24 (Test B) and $35 (Test C) at a probability of 80%. Two key variables were identified. Potential cost savings increase with increasing empiric use of micafungin or decreased prevalence of Candida albicans. CONCLUSIONS: With sole consideration of antifungal medication costs, switching from Test A to Test C is likely to yield more cost savings than switching to Test B, but cost savings may not be substantial.
by the FDA for the treatment of cSSIs. This study investigated the economic implications of treating cSSIs with ceftobiprole, compared to vancomycin or ceftazidime.

**METHODS:** A discrete event simulation of acute anti-infective treatment in patients with cSSI was developed. Three copies of patients were created. Each copy was assigned to one of the three treatments (ceftobiprole, vancomycin, or ceftazidime). The clinical course was simulated using data from clinical trials of ceftobiprole (patient and infection characteristics, cure rates, treatment duration, length of hospital stay, adverse event rates, treatment discontinuation, use of subsequent treatments). Patient weight was measured in pounds based on the extent to which the treatment could cover the pathogens causing the infection (MRSA only, Gram-positive non-MRSA, Gram-negative, and other possible combinations). Costs in 2007 USD were taken from published sources. Various events (relapse, treatment adjustment, and death) and the associated medical costs were estimated for a treatment episode (49 days). Results are based on 100 simulations of 1,000 patients each. **RESULTS:** The mean cost per patient was estimated to be $19,247 treated with ceftobiprole vs. $19,884 for vancomycin and $19,721 for ceftazidime. The frequencies of cure, relapse, and death were similar across the groups. Less than 1% of patients started on ceftobiprole required treatment escalation compared to 23% for vancomycin and ceftazidime, indicating that ceftobiprole provided a broader coverage against the causing pathogens of cSSIs, thus patients received adequate coverage more promptly. **CONCLUSIONS:** Using ceftobiprole for treatment of cSSIs is expected to provide similar cure rates without increasing costs compared to vancomycin and ceftazidime in the US.

**THE IMPACT OF AGE DEPENDENT UTILITY ON THE COST EFFECTIVENESS OF PEGLYLATED INTERFERON AND RIBAVIRIN VERSUS INTERFERON AND RIBAVIRIN AS THERAPY FOR GENOTYPE 1 PATIENTS WITH CHRONIC HEPATITIS C**

McDavitt P, Yuan T, Townsend K, Ken RW

**OBJECTIVES:** It is common for published models describing the treatment effectiveness of managing chronic hepatitis C (CHC) to assume those subjects achieving a sustained virologic response (SVR) attain a health utility of one; equivalent to perfect health. Our objective was to evaluate the impact of using age dependent utility weights on the cost effectiveness obtained in a CHC model. **METHODS:** A Markov model describing the natural history of CHC in patients with genotype 1 was developed and used to estimate the cost effectiveness of treatment with peginterferon α-2a plus ribavirin (PEG) versus interferon α-2b plus ribavirin (IFN). The model was populated with data and validated using a previously published cost effectiveness model. The model was re-calibrated using age dependent utility weights for patients achieving SVR and run over a lifetime taking a payer perspective, with both costs and benefits discounted at 3.5%. **RESULTS:** The cost per quality adjusted life years (QALYs) of PEG versus IFN obtained using age independent SVR disease state utility value of patients achieving SVR were: $2,173 for those aged 40 years, $3,955 for those aged 50 years, $8,462 for those aged 60 years, and $18,485 for those aged 70 years. The same analysis performed using age dependent utility values were: $2,373 for those aged 40 years, $5,931 for those aged 50 years, $14,924 for those aged 60 years, and $46,123 for those aged 70 years. **CONCLUSIONS:** Health utility is an important driver of cost effectiveness in CHC economic models. Compared to the base case, age dependent utility weights substantially increase the cost effectiveness ratios, particularly in patients aged 60 years or over. The assumption that patients attaining SVR have perfect health has the potential to bias decision making and there is, therefore, a need for future research that better describes the utility profile associated with subjects achieving SVR.

**COST EFFECTIVENESS ANALYSES (CEA) OF LOPINAVIR/RITONAVIR (LPV/r) AND ATAZANAVIR PLUS RITONAVIR (ATV + RTV) REGIMENS FOR ANTIRETROVIRAL (ARV) NAIVE HIV-INFECTED PATIENTS BASED ON CASTLE 48-WEEK STUDY: APPLICATION TO GERMANY, ITALY, SPAIN, AND THE UNITED KINGDOM**

Simms KN, Dizee B, Baran RW, Kirach SE, Podolski T

**OBJECTIVES:** No differences in viral load (VL) or CD4 + T-cell count at 48 weeks were observed between the CASTLE study and the EU CASTLE study. However, costs were elevated in 7% and 18% of subjects receiving ATV + RTV and LPV/r, respectively. These measures can predict outcomes which affect the future cost of HIV in European countries. Our objective was to examine the expected CEA and budget impact of LPV/r vs. ATV + RTV for patients similar to the CASTLE population, for Germany, Italy, Spain, and UK. **METHODS:** Using a previously published Markov model of HIV disease and newly developed cost data, we compared the cost/QALY and budget impact of the two ARV regimens. This model used TC levels at 48 weeks and the Framingham equation to include effects of heart disease in the model. Costs were updated to 2009 health services perspective. **RESULTS:** The CHD risk favored ATV + RTV, resulting in a life expectancy increase of 0.031 QALYs (11 days). Cost effectiveness ratios for ATV + RTV were: Germany $239,700; Italy $178,856; Spain $260,531; UK £123,339 per QALY. Five-year per-patient savings were estimated for LPV/r: £4057; Italy £2681; Spain £3275; UK £1644. If all subjects were assumed to be smokers on anti-hypertensive medication, life expectancy improved by 0.088 QALYs (32 days) favoring ATV + RTV. However, the ICERs produced under this scenario were €96,812/QALY and £65,279/QALY in Germany and UK, respectively. **CONCLUSIONS:** Based on these cost effectiveness ratios, selecting an ATV + RTV based regimen in ARV naïve populations with a CHD risk similar to subjects in the CASTLE study does not appear to be a cost effective use of scarce resources in any of the countries evaluated. Furthermore, costs associated with the very small added CHD risk incurred by LPV/r treatment are more than offset by its short and long term cost savings.

**COSTS OF RECRUITING PATIENTS WITH HIV INTO A RANDOMIZED CLINICAL TRIAL OF BEHAVIORAL INTERVENTIONS FOR ANTIRETROVIRAL MEDICATION ADHERENCE**

Simpson KN1, Dietz B2, Baran RW3, Kirbach SE1, Podsadecki T3

**OBJECTIVES:** Analyze and identify total time and cost of recruiting patients into a randomized clinical trials (RCT) of Motivational Interviewing-based behavioral interventions to enhance antiretroviral therapy (ART) adherence. Despite numerous federally funded RCTs, little literature describes the cost of recruiting patients into behavioral interventions to enhance ART adherence. **METHODS:** A secondary data analysis of recruitment data collected for Project MOToV8 (R01 MH68197) was conducted. Data from 204 HIV+ patients recruited from the Kansas City metro area between June of 2004 and August of 2008 were examined for this cost analysis. Direct labor costs for all recruitment staff were collected. Microsoft® Excel spreadsheet was used to determine number of attempted recruits, average time spent to recruit/retain a patient, number of successful enrollments, and project resources spent on recruitment. Discounting and sensitivity analysis was done to determine the robustness of this cost analysis. **RESULTS:** Over four years Project MOToV8 screened 1710 patients and successfully enrolled 204 patients (11.9%) into the study. The ratio of patients approached to successfully enroll was 8.3:1. Ten minutes was the average time spent to recruit a patient, however it required 1.4 hours of effort to enroll an eligible patient in the study. All costs are reported in 2008 dollar value. The total cost associated with four staff members working on the recruitment effort came to $245,638 (281 hours) over the study period. The cost for attempted recruitment was $143,644 (101 minutes average) and the cost for successful enrollment was $1204.05 (1.4 hours) for patients with HIV. **CONCLUSIONS:** The costs associated with recruiting participants into a study are often overlooked and underestimated. This economic analysis can serve as a guide for future recruitment strategies and cost analyses to help to shed light on unique challenges in the HIV business environment.

**INFECTION – Patient-Reported Outcomes Studies**

**A RETROSPECTIVE EVALUATION OF PATIENT ADHERENCE TO ANTIRETROVIRAL THERAPY: PROPORTION OF DAYS COVERED VERSUS MEDICATION POSSESSION RATIO**

Fowler JA, Barnett P, Cramm MLA, Argo TK, Smith TL

**OBJECTIVES:** The primary purpose of this study was to determine the relationship between psychotropic medication non-adherence and adherence to combination antiretroviral therapy. As a secondary analysis, adherence to combination antiretroviral therapy as measured by proportion of days covered (PDC) was compared to adherence based on the medication possession ratio (MPR) in order to facilitate comparison between the results of this study and those of previous studies evaluating antiretroviral adherence. **METHODS:** Data were extracted from Texas Medicaid files. Included subjects were adults with prescription claims for at least three antiretroviral medications indicated for treatment of HIV infection within a 3-month period beginning between 1/1/2004 and 12/31/2004. PDC was defined as the total number of days during the 12-month follow-up period for which all index antiretroviral medications were available divided by 365 days, while MPR was defined as the average number of days supplied for all antiretroviral medications divided by 365 days (truncated at 100%). Data were analyzed using descriptive statistics. **RESULTS:** When measured by PDC, the mean adherence across the entire sample (N = 1,321) was 39.1% ± 34.6%. Mean adherence was markedly greater when measured by MPR at 70.4% ± 33.5%, with a mean difference between the two measures of 31.3% ± 36.8%. **CONCLUSIONS:** PDC provides a more conservative estimate of adherence to combination antiretroviral therapy (ART) compared to MPR for patients with HIV. However, MPR results indicate that adherence in this study was similar to that found in previous studies using prescription claims data to evaluate adherence to combination antiretroviral therapy using modified versions of the MPR (72-81%). Use of PDC to calculate adherence to combination antiretroviral therapy may provide more clinically relevant information than other measures since concomitant use of all medications in the regimen is theoretically required for synergistic viral suppression and optimal HIV outcomes.