

against the existing therapy bupropion SR. **METHODS:** A decision analytic model was developed using DATA Treeage software to compare the cost-effectiveness of varenicline with bupropion SR. The costs and probabilities of success were reported for 12 weeks for 1 mg varenicline and 150 mg bupropion SR. The drug acquisition costs were obtained from the Drug Topics Red Book and published clinical trials. The model also included costs and effectiveness values for placebo. Costs for physician visits and counseling were obtained from clinical trials and other published sources. The probabilities of success were reported as the continuous abstinence rate (CAR) in all the studies. Treatment effects were compared using head-to-head clinical trials. Incremental cost effectiveness ratios (ICERs) were calculated for additional cost/CAR and were estimated relative to placebo. One-way sensitivity analysis was performed to determine the robustness of the results. **RESULTS:** The ICER for varenicline compared to placebo was \$3688/CAR, and the ICER for bupropion SR compared to placebo was \$5915/CAR. The total costs of varenicline and bupropion SR were \$1696.2 and \$1833.6 respectively. Varenicline was found to be more effective than bupropion SR and placebo with a CAR of 0.46, compared to CARs of 0.31 and 0.17 respectively. Sensitivity analysis indicated that the results were affected by the model assumptions for cost and effectiveness treatment options. **CONCLUSION:** Based on the results from the decision analytic model, smoking cessation therapy with varenicline should result in lower costs, and higher CARs as compared to bupropion SR.

PRS7

#### **COST-EFFECTIVENESS OF CICLESONIDE VERSUS FLUTICASONE IN THE TREATMENT OF PATIENTS WITH MILD, MODERATE, AND SEVERE ASTHMA**

Taylor DC<sup>1</sup>, DeLong K<sup>1</sup>, Nunes K<sup>1</sup>, Seal B<sup>2</sup>

<sup>1</sup>Innovus, Medford, MA, USA, <sup>2</sup>Sanofi-Aventis, Bridgewater, NJ, USA

**OBJECTIVE:** The objective of this study was to assess the cost-effectiveness of ciclesonide versus fluticasone in adult patients with mild, moderate, and severe asthma. **METHODS:** A decision tree model was developed to simulate the health consequences and costs associated with daily asthma medication use. Patients were assumed to receive either ciclesonide or fluticasone. Potential health consequences for patients in the model included an adverse drug event (ADE) and symptom-free (SF) day. Costs included those associated with drug acquisition, the use of rescue medication, and medical resource utilization due to ADEs or non-SF days. The efficacy of ciclesonide and fluticasone was estimated using data from multiple clinical trials and data on file at Sanofi-Aventis. Data on medical resource utilization following ADEs and costs were estimated from published literature. Parity in the cost of ciclesonide and fluticasone was assumed. The model was used to calculate total daily costs, probability of an ADE-free (ADEF)/SF day, and the incremental cost per ADEF/SF day for ciclesonide versus fluticasone. **RESULTS:** The use of ciclesonide is associated with lower costs (\$2.01 vs. \$2.02) and higher probability of an ADEF/SF day (0.254 vs. 0.247) than fluticasone, indicating that ciclesonide dominates fluticasone in the treatment of patients with varying asthma severity. Results of a one-way sensitivity analysis of all model parameters suggest that the model is most sensitive to changes in the probability of a symptom-free day on treatment with fluticasone. A two-fold increase in the cost of ciclesonide yields an ICER of \$88.38 per ADEF/SF day. **CONCLUSION:** Ciclesonide produces more ADEF/SF days than fluticasone and therefore dominates fluticasone when drug prices are equal.

PRS8

#### **HEALTH ECONOMICS OF ASTHMA: ASSESSING THE VALUE OF ASTHMA INTERVENTIONS**

Spackman DE, Campbell JD, Sullivan SD

University of Washington, Seattle, WA, USA

**OBJECTIVE:** We undertook a systematic review of asthma intervention health economic studies from 2002 through 2007, evaluated how well the current health economic recommendations in asthma have been followed, assessed the implications of health economics research by comparing findings to coverage and reimbursement patterns and, suggested avenues for future improvement. **METHODS:** We performed a state-of-the-art review using multiple search databases. We used past health economic asthma reviews to assess whether current studies have complied with previous recommendations. We compared the pharmaceutical value-for-money conclusions with their formulary coverage from a large payer in the US and the British reimbursement recommendations. **RESULTS:** We included 39 of the 176 studies that met our initial criteria. Data sources used to inform the economic analyses ranged in duration from 12 weeks (8) to three years (2). Uncertainty was reported by 19 studies. The most common benefit outcome was symptom free days (14). Seven studies reported quality-adjusted life years. Thirty-four of 39 reported that the intervention of interest was cost-effective or dominant. **CONCLUSION:** Previous recommendations for longer-term pragmatic trials are still germane. Using the Global Initiative for Asthma guidelines, the reviewed pharmaceutical interventions assumed relevant comparators but few studies compared combination products to their collective components. Care should be taken in the interpretation of incremental cost-effectiveness ratios that use asthma specific event avoided outcomes because these outcomes may not capture the complete effects of treatment and may be biased due to double counting. We recommend the use of generic measures sensitive to asthma patients and standardized across diseases. Willingness-to-pay must be assumed to conclude cost-effectiveness and must be justified. The overall findings from this health technology assessment review are consistent with the coverage and reimbursement recommendations in the UK (British Thoracic Society and Scottish Intercollegiate Guidelines Network) and US (Aetna's 2007 preferred drug guide).

PRS9

#### **THE COST-EFFECTIVENESS OF TARGETED PRESCRIBING OF ANTIMICROBIALS IN CANADA FOR COMMUNITY-ACQUIRED PNEUMONIA IN AN ERA OF ANTIMICROBIAL RESISTANCE**

Moore L<sup>1</sup>, Martin M<sup>1</sup>, Quilici S<sup>1</sup>, Low DE<sup>2</sup>, Grossman R<sup>3</sup>, Kureishi A<sup>4</sup>, Kubin M<sup>5</sup>, Jaszewski B<sup>6</sup>, Rebeira M<sup>6</sup>

<sup>1</sup>Innovus, Uxbridge, Middlesex, UK, <sup>2</sup>Mount Sinai Hospital, Toronto, ON, Canada, <sup>3</sup>Credit Valley Hospital, Mississauga, ON, Canada, <sup>4</sup>Bayer HealthCare, Singapore, Singapore, <sup>5</sup>Bayer Healthcare AG, Wuppertal, Germany, <sup>6</sup>Bayer Healthcare, Toronto, ON, Canada

**OBJECTIVE:** To assess the cost-effectiveness of empirical outpatient treatment options in Canada for community-acquired pneumonia (CAP) in the presence of antimicrobial resistance. **METHODS:** A multi-country decision analytic model to assess the clinical and economic consequences of antimicrobial resistance, developed for mild-to-moderate empirical CAP outpatient treatment, was adapted to Canada. Treatment algorithms involved first- and second-line treatment in the community, and incorporated follow-up after treatment failure due to resistance or other reasons and resulting hospitalizations. Comparators included (1) first-line treatment with azithromycin, a generic macrolide prescribed in Canada, followed by moxifloxacin, a fluoroquinolone, and (2) first-line treatment with moxifloxacin followed by azithromycin upon failure. Clinical failure rates with