costs. In a health care system like Ontario’s, which treats 2800 new breast cancer patients per year, this may represent a significant reduction in operation cost. These savings should be considered in context of how much resource investment is required to reduce waiting.

Modelling the Cost Effectiveness of First-Line Combination Treatment with Bevacizumab Plus Irinotecan and Infusional Fluoropyrimidines Versus Irinotecan and Infusional Fluoropyrimidines in Metastatic Colorectal Cancer Patients in Sweden

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OBJECTIVES: To model expected mean incremental costs and life expectancy of adding bevacizumab (bev) to an irinotecan plus infusional 5-fluorouracil/leucovorin (5-FU/LV) regimen (FOLFIRI) for the first-line treatment of patients with metastatic colorectal cancer (MCRC) in Sweden. METHODS: A 3-health-state model explored the effects of adding bev treatment to an existing FOLFIRI-based regimen. The model structure was based on one published by National Institute for Health and Clinical Excellence (NICE) UK, which applies to guidelines established by the Swedish Pharmaceutical and Dental Benefits Board. Progression-free (PFS) and overall survival (OS) data are derived from clinical trials comparing bev+irinotecan and 5-FU/LV (IFL) with IFL alone. The impact on OS for bev+FOLFIRI was included through an indirect comparison of hazard ratios (HRs) between bev+IFL versus bev+FOLFIRI (HR for death: 1.79; 95% CI: 1.12–2.88). Treatment effect for bev+FOLFIRI was maintained during the 40-month clinical follow-up. The FOLFIRI PFS was created by applying the HR from IFL versus FOLFIRI (HR for progression or death: 1.51; 95% CI: 1.16–1.97) to the IFL PFS. OS included life years, QALYs, direct costs and incremental cost-effectiveness ratios (ICERs). A life-time horizon (eight years) was used. Cost and outcomes were discounted by 3.5% per annum.

RESULTS: The estimated mean life expectancy for bev+FOLFIRI-treated patients was 2.64 years (discounted; 2.77 years versus 1.58 years undiscounted) at 5% annually. Incremental cost-effectiveness ratios (ICERs) were reported with one-way and probabilistic sensitivity analyses performed to assess robustness of results. A priori sub-group analyses were carried out by baseline Karnofsky Performance Scores (KPS). RESULTS: Among all patients (KPS 60–100), the ICERs comparing CsRT to RT were $19,740/QALY (95% CI: $11,122 to $69,295) among platinum ineligible patients and for CsRT vs. CsRT, $99,147/QALY (95% CI: $75,998 to $148,931) among platinum eligible patients. ICERs decreased with increasing KPS scores. At a willingness-to-pay of $50,000 among platinum-ineligible patients and $100,000 among platinum eligible patients, the likelihood that CsRT is cost-effective is 90% and 45% respectively. Sensitivity analyses indicated that time horizon and assumptions about CsRT effectiveness had the largest impact on results. CONCLUSIONS: Cetuximab is an economically attractive option for SCCHN patients.

Cost-effectiveness of Cetuximab (ERBITUX®) for the First-line Treatment of Squamous Cell Carcinoma of the Head and Neck (SCCHN) in Canada

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OBJECTIVES: Squamous cell carcinoma of the head and neck (SCCHN) can be a devastating disease. Cetuximab has recently been shown to improve locoregional control (LRC) and reduce mortality in locally and regionally advanced disease. The objective of the study is to estimate the incremental cost-utility of cetuximab plus radiotherapy (CsRT) versus cisplatin plus radiotherapy (CsRT) among platinum eligible patients and versus RT alone in platinum ineligible patients in Canada. METHODS: A lifetime transition model was developed with four health states: 1) acute treatment phase; 2) LRC; 3) disease progression and 4) death. Adverse events were accounted for in the first two states. Efficiency of treatment (LRC and overall survival) was obtained from the literature. Based on the network meta-analysis, CsRT and CsRT were assumed to have equal efficacy. Resource use was obtained from published literature and clinical expert opinion. The perspective adopted was that of a provincial ministry of health or cancer agency. Utilities were obtained from a previous study of UK oncology nurses. Costs (ICERs) were estimated and outputs were discounted at 5% annually. Incremental cost-effectiveness ratios (ICERs) were reported with one-way and probabilistic sensitivity analyses performed to assess robustness of results. A priori sub-group analyses were carried out by baseline Karnofsky Performance Scores (KPS). RESULTS: Among all patients (KPS 60–100), the ICERs comparing CsRT to RT were $19,740/QALY (95% CI: $11,122 to $69,295) among platinum ineligible patients and for CsRT vs. CsRT, $99,147/QALY (95% CI: $75,998 to $148,931) among platinum eligible patients. ICERs decreased with increasing KPS scores. At a willingness-to-pay of $50,000 among platinum-ineligible patients and $100,000 among platinum eligible patients, the likelihood that CsRT is cost-effective is 90% and 45% respectively. Sensitivity analyses indicated that time horizon and assumptions about CsRT effectiveness had the largest impact on results. CONCLUSIONS: Cetuximab is an economically attractive option for SCCHN patients.

Cost-effectiveness of First-line Combination Treatment with Bevacizumab Plus FOLFIRI versus FOLFIRI in Patients with Metastatic Colorectal Cancer: A UK Perspective

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OBJECTIVES: To determine incremental costs and life expectancy of adding bevacizumab (bev) to an irinotecan plus infusional 5-fluorouracil/leucovorin (5-FU/LV) regimen (FOLFIRI) for the first-line treatment of patients with metastatic colorectal cancer (MCRC) in the UK. METHODS: We performed a decision analysis with a THREE-health-state area under the curve model to explore the effects of adding bev treatment to an existing FOLFIRI-based regimen. The model structure was based on a published model by National Institute of Technology Excellence (NICE), UK. Progression-free (PFS) and overall survival (OS) data were derived from clinical trials comparing bev+irinotecan and 5-FU/LV (IFL) with IFL alone. The impact on OS for bev+FOLFIRI was included through an indirect comparison of hazard ratios (HRs) between bev+IFL versus bev+FOLFIRI (HR for death: 1.79; 95% CI: 1.12–2.88). Treatment effect for bev+FOLFIRI was maintained during the 40-month clinical follow-up. The FOLFIRI PFS was created by applying the HR from IFL versus FOLFIRI (HR for progression or death: 1.51, 95% CI: 1.16–1.97) to the IFL PFS. OS included life years, QALYs, direct costs and incremental cost-effectiveness ratios (ICERs). A life-time horizon (eight years) was used. Cost and outcomes were discounted by 3.5% per annum. Both deterministic and probabilistic sensitivity analyses were performed. RESULTS: The estimated discounted life expectancy for bev+FOLFIRI-treated patients was 2.62 years (undiscounted: 2.77 years) versus 1.58 years (undiscounted: 1.63 years) in the FOLFIRI arm. The discounted costs in the 2 arms were $49,798 and $52,698, respectively. The discounted ICER was $25,045 per life-year gained and $40,532 per QALY gained. Sensitivity analysis on key variables showed that assumptions of size (HR) and duration of treatment effect were the most influential factors for the ICER. CONCLUSIONS: Bev+FOLFIRI versus current FOLFIRI-based treatment regimens for MCRC increases survival for these patients and is a cost effective treatment option.
non-small-cell lung cancer (NSCLC) using gefitinib or docetaxel. Probability distributions for adverse events and life expectancy were obtained from the INTEREST study. We used a docetaxel chemotherapy cost study at SSSTTE and for gefitinib we used the drug's institutional price. Health state utility values for calculating QALYs were derived from a recently published study done with UK patients. A 3% annual discount rate was applied on a monthly basis to all costs. Finally, a probabilistic sensitivity analysis was made varying the cost of chemotherapy. The model was run 25 times with 500 patients in each arm. Results are presented in US dollars with an exchange rate of $1.35/MXN pesos for 1 US dollar.

RESULTS: There was no clinical difference in life expectancy between gefitinib (10.25 months) and docetaxel (10.14 months). Average QALY for gefitinib cohort was 0.487 (95% CI, 0.437 – 0.537) and for chemotherapy cohort was 0.438 (95% CI, 0.388 – 0.487). The average cost per patient treated with gefitinib was $12,103 (95% CI, $11,916 – $12,290) and with docetaxel was $20,076 (95% CI, $19,866 – $20,286). The acceptability curve shows a 100% dominance of gefitinib over docetaxel, after a chemotherapy price of $1,133. CONCLUSIONS: Gefitinib is an alternative therapy for second line treatment of NSCLC that does not reduce docetaxel chemotherapy, thus improving quality of life related to reduced presence of adverse events, at a lesser cost to the institution.

**PCN73**

**USING SHORT-TERM RESPONSE TO PREDICT LONG-TERM OUTCOMES IN PATIENTS WITH IMATINIB-RESISTENT OR IMATINIB-INTOLERANT CHRONIC MYELOID LEUKAEMIA**

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**OBJECTIVES:** Chronic myelogenous leukaemia (CML) is a progressive disease associated with a significant burden on both the patient and the health care provider. Although imatinib is considered the cornerstone of therapy initially, there is a factor that is often missed in this approach, which is the development of resistance or intolerance. In these patients, other tyrosine kinase inhibitors (TKIs), such as dasatinib and nilotinib are treatment options. This study uses outputs from recent clinical trials evaluating TKIs to predict the long-term economic and cost outcomes associated with different levels of best response.

METHODOLOGY: A Markov model was developed to estimate the costs and health outcomes associated with chronic, accelerated and blast phase CML. Short-term response was defined as ‘no response’ (NR), ‘complete haematological response’ (CHR), partial cytogenetic response (PCR) and complete cytogenetic response (CCR). Resource use and quality-adjusted life year (QALY) scores were stratified according to the patient’s current health status and response level. RESULTS: Patients in the chronic phase who achieve no response are estimated to experience a total of 1.5 QALYs and incur costs of $57,201 per their lifetime. Those who achieve CHR, PCR and CCR experience 3.47, 7.31 and 10.17 QALYs, and costs of $62,617, $66,499 and $67,177 respectively. In the accelerated phase, the total number of QALYs for the NR, CHR, PCR and CCR groups were 0.71, 1.70, 1.57 and 4.10 respectively. For the same groups, the lifetime costs were $35,273, $35,830, $35,886 and $31,693. In the blast phase, the QALY outcomes for the four groups were 0.18, 0.41, 0.63 and 1.46, whilst the costs were $31,252, $7,109, $10,993 and $25,501 respectively. CONCLUSIONS: There is a strong apparent relationship between short-term response to treatment and long-term outcomes in CML. These findings are likely to be useful in assessing the cost-effectiveness of existing treatments, whose short-term response is known, but where long-term data are currently unavailable.

**PCN74**

**COST UTILITY OF POSACONAZOLE VERSUS FLUCONAZOLE/ITRACONAZOLE THERAPY IN THE PROPHYLAXIS AGAINST INVASIVE FUNGAL INFECTIONS AMONG HIGH-RISK NEUTROPENIC PATIENTS IN MEXICO**

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**OBJECTIVES:** To estimate the cost effectiveness of posaconazole versus fluconazole/itraconazole therapy in the prophylaxis against invasive fungal infections among high-risk neutropenic patients in Mexico. **METHODOLOGY:** A previously validated Markov model was used to compare the projected lifetime costs and effects of two theoretical groups of patients, one receiving posaconazole and the other receiving fluconazole/itraconazole. The model estimates total costs, numbers of IFIs, and QALY per patient in each prophylaxis group. The model was extended with one-month Markov cycles in which mortality is specific to the underlying cause of death. The effects on the probability of IFI were obtained from Study Protocol PO1899. Drug costs were taken from average wholesale drug reports for 2008. Cost and health effects were discounted at 5%. The analysis was conducted from the Mexican health care perspective using 2008 unit cost prices. **RESULTS:** Our model projected an accumulated cost to the Mexican health care system per patient receiving the posaconazole regimen of US$7463 compared to US$5634 for the fluconazole/itraconazole regimen. This results in an incremental cost of (~US$1829) per patient. The accumulated discounted effect is 3.13 life years or 2.20 quality-adjusted life years (QALYs) per patient receiving posaconazole, compared to 3.13 life years or 2.13 QALYs per patient receiving fluconazole/itraconazole. This translates into an incremental effect of posaconazole over fluconazole/itraconazole of 0.17 life years gained (LYG) or 0.12 QALYs gained. The corresponding incremental cost effectiveness ratio (iCERs) is (~US$13,125) per QALY. Probabilistic sensitivity analysis tested numerous assumptions about the model cost and efficacy parameters and found that the results were robust to most changes. **CONCLUSION:** The use of posaconazole in place of fluconazole/itraconazole for the prophylaxis against invasive fungal infections among high-risk neutropenic patients is likely to be cost saving. These conclusions are supported by the use of conservative assumptions and sensitivity analyses.

**PCN75**

**THE IMPACT OF NEUTROPENIC COMPLICATIONS ON SHORT-TERM DISABILITY IN PATIENTS WITH CANCER RECEIVING CHEMOTHERAPY**

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**OBJECTIVES:** Patients receiving myelosuppressive chemotherapy are at risk for chemotherapy-induced neutropenic complications (CINC). The study objective was to examine the impact of CINC, defined as neutropenia with fever or infection, on short-term disability (STD) among cancer patients receiving chemotherapy. **METHODS:** Patients with cancer undergoing chemotherapy were extracted from Thomson Reuters MarketScan® Commercial Database and Health and Productivity Management Database. Patients were required to have at least 6 months continuous enrollment before the index date (first chemotherapy claim) and at least 30 days continuous enrollment post-index date, full-time employment and eligibility for STD. Patients with ICD-9 codes for neutropenia and fever or infection and that had evidence of chemotherapy within 30 days prior were defined as having CINC. Propensity score (PS) matching was conducted for “CINC” and “non-CINC” patients based on demographic and clinical characteristics, including chemotherapy class and use of highly myelosuppressive chemotherapeutic agents. Subsequent multivariate regressions were conducted on PS-matched cohorts to estimate the marginal impact of CINC: an Ordinary Least Squares Model on STD days per month. Results were adjusted for baseline characteristics and a logistic regression model on whether a patient used any STD during a month. **RESULTS:** A total of 280 CINC and 280 non-CINC patients were PS-matched. Compared with matched non-CINC patients, CINC patients on average had 0.9 more STD days (2.2 vs. 3.1, p = 0.046) which led to $156 more in indirect costs ($549 vs. $394, p = 0.050) per month. After multivariate adjustment, CINC patients were 35% (p = 0.121) more likely to experience at least one STD day, experienced 1.0 more STD day (p = 0.029), and incurred $200 more in indirect cost ($246 vs. $64 per month). **CONCLUSIONS:** Patients with CINC experience significantly greater STD days than patients with no neutropenic complications from cancer chemotherapy. Efforts that may prevent CINC could potentially have a beneficial impact on work absenteeism.