**OBJECTIVES:** To compare the direct medical costs associated with two different regimens for the treatment of Helicobacter pylori-related peptic ulcer disease (PUD) from a hospital perspective. The efficacy of a new regimen, including ranitidine bismuth citrate, amoxycillin and clarithromycin (RAC), was recently compared in a study at a local teaching hospital with that of a regimen consisting of omeprazole, amoxycillin and clarithromycin (OAC). The study results showed no significant difference in the efficacy of the two regimens, but the cost implication of the two regimens was not examined. The drug cost of OAC (HK$364, $US = 7.8HK) was 20% more than that of RAC (HK$304) for a 7-day therapy.
**METHOD:** Data from a controlled, randomized clinical trial conducted in Hong Kong was reanalyzed. The records of 100 patients with Helicobacter pylori-related PUD, who were previously randomized to receive either RAC or OAC, were reviewed. The hospital resources consumed during the period of PUD treatment were retrieved and studied. The total cost associated with each regimen per ulcer-healed patient was calculated and analyzed.
**RESULTS:** Twelve of the 100 patients were excluded from the analysis because of incomplete documentation or noncompliance with the protocol of the clinical trial. Forty-one inpatients and 47 outpatients were included in the analysis. In the inpatient group, there was no significant difference between the median direct cost associated with OAC and RAC ($13,042 and $11,622, respectively; P = 0.168). In the outpatient group, the median direct cost associated with RAC was significantly lower than that of OAC ($4,096 and $3,839, respectively; P = 0.003).
**CONCLUSION:** The direct medical costs associated with OAC and RAC were similar for inpatient treatment of Helicobacter pylori-related PUD but RAC was less costly in the outpatient setting.

**TPC3**

## COST OF AML TREATMENT IN BELGIUM: RESULTS OF A RANDOMIZED TRIAL WITH AND WITHOUT FILGRASTIM USE

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**INTRODUCTION:** A randomised multi-centre phase III trial using Filgrastim (5 μg/kg/day until neutrophil recovery) in induction and consolidation therapy for 'de novo' adult acute myeloid leukaemia (AML) patients showed safety and efficacy of the drug with significant reduction in hospital duration and IV anti-infective drug therapy (Heil et al, Blood, 1997, 90, 4710–4718).
**OBJECTIVE:** Considering the Belgium patients enrolled in the trial to estimate the financial impact of Filgrastim use in the treatment of AML for that country.
**METHODS:** Retrospective data collection of resource use was obtained from the 36 Belgian patients (20 cases and 16 controls) enrolled through 3 hospitals. The data were retrieved from Case Report Forms and hospital bills. The cost perspective considered is the reimbursement authority of Belgium. A cost-minimisation model is developed including the following resource items: hospital duration, IV anti-infective drug days, lab test days, blood transfusion units, vials of Filgrastim, other drug use excluding chemotherapy, and use of other diagnostic tests (Rx, Scans). Unit costs in 1998 BEF are retrieved from the reimbursement authority (RIZIV/INAMI), the Red Cross Blood Bank, the database of the Belgium Pharmaceutical Association (APB), and a private database on cost of health care in Belgium hospitals (CECODI).
**RESULTS:** The cost model shows an average cost decrease of 73.31 BEF (5,7%) per patient for induction and consolidation therapy with Filgrastim. Sensitivity analysis on hospital day costs that may widely vary, shows a break-even point reached at a cost per day much lower than the minimum reimbursement cost (break-even point = 952 BEF).
**CONCLUSIONS:** Filgrastim use in the treatment of AML patients in Belgium is likely to induce cost savings. The cost results are conservative estimates that do not include indirect cost evaluations and quality of life improvement of the patient due to earlier hospital discharge.

**TPC4**

## AN ECONOMIC EVALUATION OF AMLODIPINE FOR THE TREATMENT OF NONISCHEMIC DILATED CARDIOMYOPATHY: THE PROSPECTIVE RANDOMIZED AMLODIPINE SURVIVAL EVALUATION (PRAISE)

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**OBJECTIVE:** To evaluate the economic implications of amlodipine therapy in patients with advanced left ventricular dysfunction due to nonischemic dilated cardiomyopathy by using data from the Prospective Randomized Amlodipine Survival Evaluation (PRAISE).
**METHODS:** By using a decision analytic model, costs and effects were estimated for the first 2 years of observation in PRAISE and were projected for 30 years after initiation of therapy (referred to as the lifetime projection).
**RESULTS:** While statistical tests of the survival curves indicated that amlodipine significantly improved survival ($P < 0.001$), differences in life expectancy (amlodipine, +0.19 years (95% CI, −0.03 to 0.41 years during the first 2 years of the trial; +2.89 years, 95% CI, −0.37 to 6.14 years projected for the patient's lifetime) were not significant. The ratios of cost per year of life saved were <$8000; those of cost per quality-adjusted year of life saved were <$14,300. The confidence intervals for the cost-effectiveness ratios indicated that for the first 2 years of the trial, amlodipine was unlikely to have ratios

>$58,000 per year of life saved and $124,000 per quality-adjusted year of life saved. For the lifetime projection, it was unlikely to have ratios >$28,000 per year of life saved and $54,000 per quality-adjusted year of life saved.
**CONCLUSIONS:** Among patients whose heart failure was due to nonischemic dilated cardiomyopathy, amlodipine therapy was good value for the cost. An economic evaluation should be repeated when the second PRAISE study—which was designed to evaluate the mortality effects in heart failure of nonischemic etiology—is completed.

## ECONOMIC EVALUATION METHODOLOGICAL ISSUES

**TPL1**

### STATE OF THE ART IN PHARMACOECONOMIC EVALUATION: A REVIEW OF METHODS AND PRACTICE

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**OBJECTIVES:** An international review of cost-effectiveness studies of pharmaceuticals published in the last 5 years in peer reviewed journals was undertaken to identify the extent to which "state of the art" methodology and analytical techniques had been employed.
**METHODS:** Three main approaches were taken for this review: (1) A literature search for cost-effectiveness analyses of pharmaceuticals 1994–99 was undertaken using MEDLINE and other databases; (2) A list of "state of the art" methods and analytical techniques (defined as new and innovative, rather than established) were drawn from "methods" papers published in leading health economics journals in the past 10 years, and peer opinion; (3) Application of a simple quality scoring system to assess the quality of the reviewed papers.
**RESULTS:** 30 (currently) economic evaluations of pharmaceuticals have to date been identified, originating from several countries. The "state of the art" methods list included developments in a several main areas: data collection and modelling approaches (e.g., RCTs, meta analysis and scenario analysis), cost measurement, analysis and handling uncertainty (e.g., confidence intervals for ICERs, Monte Carlo simulations, Bayesian approaches to sensitivity analysis). The quality scoring system is still in development (although pilot results hopefully due soon). The main finding was that only a few of the studies reviewed used "state of the art" methods, relying mostly on established approaches to CEA.
**CONCLUSIONS:** The development of new state of the art methods in CEA in recent years, in particular with new developments in statistical applications, has increased potential quality and rigour of CEA results. However, these methods are not yet routinely used in actual pharmacoeconomic evaluations and may not be until more fully integrated into the growing number of pharmacoeconomic guidelines (linked to drug reimbursement) being produced in different countries.

**TPL2**

### MULTINATIONAL ECONOMIC EVALUATIONS: A REVIEW OF PUBLISHED STUDIES, METHODOLOGICAL ISSUES AND PRACTICE

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**OBJECTIVES:** There is growing interest in the economic evaluation of pharmaceuticals at the multinational level. The purpose of these evaluations is to inform healthcare decision-makers about the cost-effectiveness of pharmaceuticals, whose interests are largely specific to their own countries. The objective of this research is to identify and critically appraise multinational economic evaluations relating to pharmaceuticals in a number of disease areas, to produce a comprehensive list of the methodological considerations and to demonstrate how previous work can inform and ensure optimal design and analysis of future multinational economic evaluations.
**METHODS:** A systematic review involving databases (including MEDLINE, OHE, NHS) and hand-searches of journals was conducted for multinational economic evaluations. Each economic evaluation was assessed using a 70-point checklist specifically developed for multinational economic evaluations, which evaluated design issues (study question, study bias, outcomes) and analysis issues (data pooling, data presentation, data robustness and data generalisability) and also scored against a previously developed 35 point generic checklist based on the BMJ guidelines. Simultaneously a review was performed on the literature on generalisability and a survey was conducted in a number of countries to ascertain attitudes to generalisability of data from multinational clinical trials.
**RESULTS:** 16 economic evaluations met the criteria for inclusion, which were based on a variety of frameworks and all took the form of cost-effectiveness analyses (5 = multinational clinical-economic trials, 7 = adaptation of single country clinical-economic trials and 4 = multinational decision-analytic models) With the 70-point checklist, it was found that the studies addressed different subsections of the checklist adequately and the quality of the studies showed further variation using the 35-point checklist. There were very few papers on generalisability, but the results of the survey demonstrated a degree of convergence.
**CONCLUSIONS:** Worldwide, the issue of multinational economic evaluations is generating huge interest and is one of the biggest challenges facing health economics today. However this area has not been extensively researched and there is an urgent need for additional methodological work. This research is a first step towards developing a set of guidelines for use in future studies relating to the design, analysis and presentation of multinational economic evaluations with the purpose of maximizing the generalisability of these studies and hence their value to decision-makers.