

epidemiology of the specific disease, the adoption and diffusion rate of new drug, etc. Drug cost is expressed as the monthly cost of new and/or existing drugs. Treatment duration is the average months of patient remained on new and/or existing drugs which could be derived from clinical trials or clinical observations. Person-time on treatment is calculated by multiplying (1) and (2) and be allocated to respective budget year, then multiple (3) to obtain the annual cost of new and/or existing treatment. The net financial impact is the annual cost difference between new and existing treatment. **CONCLUSIONS:** The framework is simple and flexible, feasible for most new drug applications to estimate likely financial impact. It has been adopted by recently revised new drug reimbursement application form of NHI. The working tool is freely available as an option for calculation.

DEVELOPMENT OF STANDARD COST LIST FOR ECONOMIC EVALUATION IN THAILAND

Riewpaiboon A¹, Koopitakajorn T¹, Kumluang S¹, Chaikledkaew U², Khiaocharoen O³
¹Mahidol University Faculty of Pharmacy, Bangkok, Thailand; ²Division of Social and Administrative Pharmacy, Bangkok, Thailand; ³Naresuan University Faculty of Medicine, Pitsanuloke, Thailand

OBJECTIVES: The objectives of this study were to develop the relative value units (RVUs) and unit costs of hospital health services employing the RVU method for economic evaluation in Thailand. **METHODS:** The RVUs were developed by using the objective data method based on the reimbursable price list of the Civil Service Medical Benefit Scheme. For non-reimbursable health promotion and prevention services, unit costs were calculated at a selected hospital for RVU development. To test the RVUs, the unit costs calculated by RVU method were compared to those computed by conventional micro-costing method. Then, the RVUs were used to calculate standard unit costs of health services. Three district hospitals and three provincial hospitals where met the developed efficiency criteria were selected for the calculation. Total hospital cost including labor, material and capital costs and excluding pharmacy cost was calculated. Total RVUs were calculated by the summation of the multiplication of number of health services provided and its RVU. Total cost was divided by the total RVUs resulting in cost per RVU. Finally, unit cost of each service was calculated by the multiplication of number of RVUs and cost per RVU. **RESULTS:** This study results in RVUs of 3091 health service items which were classified into 12 groups. Unit cost of each service classified by types of hospitals was provided. A web-based standard unit cost list was created and could be accessible to the public. **CONCLUSIONS:** This study developed the first list of standard unit cost of health services of district and provincial hospitals in Thailand. The standard unit cost list is an important tool for providing cost inputs when performing economic evaluation of health interventions and it helps standardize and improve the quality of economic evaluation studies in Thailand.

PODIUM SESSION II: CARDIOVASCULAR DISEASE STUDIES

USING REAL WORLD DATA TO CALCULATE THE COST-EFFECTIVENESS OF STATIN AMONG PARTICIPANTS WITH ATHEROTHROMBOTIC DISEASE IN AUSTRALIAN GENERAL PRACTICE

Ademi Z¹, Liew D², Hollingsworth B¹, Steg PG³, Bhatt D⁴, Reid C¹

¹Monash University, Melbourne, Australia; ²The University of Melbourne, Fitzroy, Victoria, Australia; ³Université Paris VII—Denis Diderot, Paris, France; ⁴Harvard Medical School, Boston, MA, USA

OBJECTIVES: The use of statin has been shown to be cost effective in the secondary prevention of coronary heart disease and cerebrovascular disease. However, a “treatment gap” exists, whereby many eligible patients do not receive statin therapy. We sought to determine the cost-effectiveness of closing this treatment gap in the Australian healthcare setting. **METHODS:** Analysis was based on 4-year follow-up data from Australian participants of the Reduction of Atherothrombosis for Continued Health (REACH) Registry. Subjects were aged ³45 years and had established atherothrombotic disease, comprising coronary artery disease (CAD), and cerebrovascular (CerVD) disease. Decision analysis was applied to compare current coverage with statin against a hypothetical situation whereby all subjects were assumed to be treated. Outcomes of interest were nonfatal stroke, nonfatal myocardial infarction (MI), and cardiovascular deaths. The relative changes to the risks of these outcomes conferred by statin were derived from published meta-analysis. Costs were based on government-reimbursed data for 2009. **RESULTS:** Among the sample of 2768 participants, coverage with statin therapy was between 63% and 82%, depending on age group. Over the 4-year period, 89, 101, and 146 nonfatal strokes, nonfatal MIs, and cardiovascular deaths were observed, respectively. Assuming that all subjects had taken statin, the predicted equivalent numbers were 85, 96, and 137 respectively. The estimated incremental cost-effectiveness ratio (ICER) for CAD subjects was AUD \$45,274 per life-year gained (LYG). For CerVD subjects, the ICERs were AUD \$40,738. Equating to numbers needed to treat of 136 and 99.5. Sensitivity analysis showed that the results were robust. **CONCLUSIONS:** The results of this model suggest that for subjects with atherothrombotic disease, maximizing coverage with statin, in line with evidence-based recommendations, represents a cost-effective means of secondary prevention.

ATTRIBUTABLE COST AND LENGTH OF STAY FOR PATIENTS WITH ENOXAPARIN-ASSOCIATED BLEEDING

Khaisombat N¹, Saokaew S², Chaiyakunapruk N³, Nathisuwan S¹

¹Mahidol University, Bangkok, Thailand; ²Naresuan University Phayao, Muang, Phayao, Thailand; ³Naresuan University, Muang, Phitsanulok, Thailand

OBJECTIVES: Patients receiving enoxaparin are at risk of bleeding. However, the study of the financial impact of enoxaparin-associated bleeding is limited. This study aims to estimate the attributable costs and length of stay (LOS) of patients with enoxaparin-associated bleeding (EAB) compared with non-bleeding patients (NB). **METHODS:** We conducted a retrospective cohort study of hospitalized acute coronary syndrome patients who received enoxaparin since January 2006 to February 2009 in a large University-affiliated hospital. Cost and LOS were compared between patients with and without EAB on both univariable and multivariable analyses. In multivariable analysis, the attributable cost and LOS were estimated using a multiple linear regression with log-transformed model and adjusted by propensity score (PS), which was predicted by patient characteristics including age, gender, history of bleeding, hypertension, stroke, diabetes, creatinine clearance, and congestive heart failure (CHF) at admission. The adjusted means of cost and LOS estimates were retransformed to their natural values using Duan's smearing estimator. The differences of costs and LOS were presented as mean with 95% confidence intervals. **RESULTS:** Out of 346 patients, 134 (38.7%) experienced enoxaparin-associated bleeding. The average age and comorbidities in both groups were similar. However, in EAB group had more male than NB group (42% vs. 30%). Based on univariable analyses, the attributable cost and LOS of patients with EAB were 68,875 THB (\$2152) and 4.2 days, respectively. Based on PS-adjusted multivariable regression analyses, the cost and LOS attributable to EAB was 80,644 THB (\$2520) (95% CI: 69,879 (\$2184) to 91,408 (\$2857)) and 3.4 days (95% CI: 3.0 to 3.7), respectively. **CONCLUSIONS:** Bleeding is associated with increased cost and LOS among enoxaparin users. These findings suggest that strategies that reduce the risk of bleeding have the potential important reductions in costs of care for enoxaparin users.

COST-EFFECTIVENESS OF RIVAROXABAN VERSUS ENOXAPARIN FOR PREVENTION OF VENOUS THROMBOEMBOLISM (VTE) AFTER TOTAL KNEE REPLACEMENT (TKR) IN CHINA

Chen XB¹, Wang CY², Eggington S³, Zhu M⁴

¹School of Public Health, Fudan University, Shanghai, China; ²IMS China, Beijing, China; ³IMS Health, London, UK; ⁴Bayer Healthcare Company Ltd., Beijing, China

OBJECTIVES: To evaluate the cost-effectiveness of rivaroxaban against enoxaparin for prevention of venous thromboembolism (VTE) following total knee replacement (TKR) in China. **METHODS:** An economic model was developed, consisting of three modules: prophylaxis, post-prophylaxis, and long-term complications. The first two modules were represented using a decision tree while the third module used a Markov process. Safety and efficacy data during prophylaxis were derived from a Phase III international multi-regional registration trial (RECORD 3). Utility outcomes and the probability of long-term events were based on systematic review and published data. Resource use related to VTE prevention, treatment and complications was based on clinical guidelines, product labels, and interviews conducted in six Tier 3 hospitals in Beijing, Shanghai and Guangzhou City. Unit cost data were collected from government pricing bureau and presented in 2009 CNY from the health-care system perspective. Costs and outcomes were discounted at 3% per annum. Extensive one-way probabilistic sensitivity analyses were undertaken. **RESULTS:** In the base case analyses, rivaroxaban was shown to be dominant compared with enoxaparin. Rivaroxaban was associated with 0.0019 additional QALYs per patient while saving an average of CNY 242 per patient over 5 years. Costs associated with VTE clinical events were lower in rivaroxaban group (CNY 581) compared with the enoxaparin group (CNY 1059). Probabilistic sensitivity analyses estimated that rivaroxaban had a probability of >90% of being cost-effective compared with enoxaparin at a low willingness-to-pay threshold of CNY 20,000 per QALY gained. **CONCLUSIONS:** Compared with enoxaparin, rivaroxaban improved patients' health outcomes and produced overall cost savings in VTE prevention after TKR in China.

THE CLINICAL EFFECTIVENESS OF 64-SLICE OR HIGHER COMPUTED TOMOGRAPHY ANGIOGRAPHY AS AN ALTERNATIVE TO INVASIVE CORONARY ANGIOGRAPHY IN THE INVESTIGATION OF SUSPECTED CORONARY ARTERY DISEASE

Paech D, Weston A

Health Technology Analysts Pty Ltd, Sydney, NSW, Australia

OBJECTIVES: This systematic review was conducted for The New Zealand Ministry of Health to summarize recent evidence pertaining to the clinical effectiveness of 64-slice or higher computed tomography angiography (CTA) in patients with suspected coronary artery disease (CAD). If CTA proves to be a successful diagnostic performance measure, it could prevent the application of invasive diagnostic procedures in some patients. This would provide multiple health and cost benefits, particularly for under resourced District Health Boards where invasive coronary angiography is not always available. **METHODS:** A systematic method of literature searching and selection was employed with searches limited to December 2006 to March 2009. Included studies were quality assessed using NHMRC diagnostic levels of evidence and a modified QUADAS tool. Individual and pooled diagnostic performance measures (i.e., sensitivity, specificity, positive predictive value (PPV), negative predictive