required to recoup the intervention cost sooner. In this study, we focused on persons at high risks for both hypertension and diabetes and assessed the cost-effectiveness of lifestyle interventions from a health plan perspective.

METHODS: We developed a Markov model to simulate the health and economic outcomes associated with lifestyle interventions compared with normal care over persons’ lifetime. The target population is U.S. adults with both prehypertension and a blood pressure of 139 mm Hg or less and prediabetes. Data on the effect and costs of the intervention were obtained from published clinical trials. Outcomes included the incidences of diabetes and cardiovascular diseases, quality adjusted life years (QALY), and cost per QALY. Costs were expressed in 2012 US dollar. Results: In persons aged 18-64, the intervention reduced the incidence of diabetes by 22% and major cardiovascular diseases by 7% over a lifetime. In persons aged 65-84, the corresponding reductions were 32% and 3% respectively. The intervention would save $3,500 and $1,500 per person among those aged 18-64 and 65-84 respectively. The intervention achieved cost-even in 10 years among those aged 18-64 and 15 years among those aged 65-84 since initiation. Conclusions: Lifestyle intervention, targeting to persons at a high risk for both hypertension and diabetes, would lead to a greater lifetime saving and sooner recovery of the intervention costs, compared with targeting to those at risk for diabetes alone.

PHS36 A COST-EFFECTIVENESS ANALYSIS OF VITAMIN D TESTING AND SUPPLEMENTATION STRATEGIES ON QUALITY-ADJUSTED LIFE-YEARS IN PEDIATRIC RENAL TRANSPLANT RECIPIENTS

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OBJECTIVES: Many children undergoing renal transplantation are vitamin D deficient, and hence, have an elevated risk of fracture, a costly event that can also reduce quality of life substantially. However, because testing a child’s vitamin D level is also costly, it makes sense to investigate whether universal vitamin D supplementation is more cost-effective than testing followed by supplementation for deficient patients only. The objective of this study was to determine the cost-effectiveness of (1) universal supplementation relative to (2) testing plus supplementation in patients with vitamin D deficiency and (3) neither testing nor supplementation. METHODS: A non-Markov decision model using Decision Maker (beta test version 2011.01.30b) was constructed to examine three strategies: universal supplementation, testing with supplementation as needed, and no testing/supplementation. A time horizon of five years was assumed, and analysis was done from the health-system’s perspective by including costs, and quality-of-life outcomes obtained from literature and health-system. A 3% discount rate was applied to costs and results were reported in 2011 US$. Sensitivity and threshold analyses were conducted. RESULTS: The least costly strategy was universal supplementation, which dominated no testing/supplementation. The ICER for testing was $1,188,622/QALY compared with universal supplementation. The only parameter in the model that demonstrated sensitivity was the cost of testing. If it were reduced to $39 90 (from present cost of $102 11), then testing would become the dominant strategy. CONCLUSIONS: This study showed that universal vitamin D supplementation was a cost-effective strategy for reducing fractures among the pediatric renal transplant population. This strategy is further supported by the observation that supratherapeutic doses of vitamin D are rarely associated with toxicity and only at very extreme doses, although watching for toxicity would require adequate monitoring. The pleiotropic effects, i.e., decreased reption of vitamin D supplementation may lower the cost per QALY and needs to be explored.

PHS37 ECONOMIC EVALUATION OF A SCHOOL CLINIC INTERVENTION TO PREVENT RHEUMATIC FEVER

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OBJECTIVES: To evaluate the cost effectiveness of ‘sore throat clinics’ (STCs) for prevention of acute rheumatic fever (ARF) in children in primary/intermediate schools. METHODS: A Markov model was developed to represent the lifetime impact of one year of primary prevention of ARF with STCs in high risk New Zealand (NZ) schools. It includes the incidence rate, natural history and costs of ARF and its sequelae, secondary prophylaxis, medical complications of carditis; cardiac valve repair/replacement, the overall efficacy of community interventions to prevent rheumatic fever, and the annual cost per child of STCs. The model has a cycle of one year and terminates at age 95. It takes a health and payer perspective but excludes costs to families. Future costs and health care benefits are discounted at 3.5% per annum. RESULTS: If STCs are 59% efficacious and cost on average NZ$235 per child per year, for schools at an incidence rate of 75 per 100,000, then expected per child cost is NZ$207 per year. In addition, NZ$219,000 per ARF case averted or NZ$2m per death averted. These figures are sensitive to the efficacy and annual cost of the intervention and the incidence of ARF and its sequelae in other settings. However, it is reasonable to assume that workers and laboratory culture and the main uncertainty is the efficacy of the intervention in NZ high risk schools. CONCLUSIONS: Sore throat clinics in high risk schools are likely to reduce the risk of acute rheumatic fever and thereby improve public health. The data available are adequate for the cost-effectiveness from a NZ government perspective. Their cost effectiveness could be improved by containing staffing costs and/or reducing the cost of laboratory diagnosis. The intervention would reduce the striking disparity between Māori/Pacific and others.

PHS38 GENERATING AN ECONOMIC MODEL TO ESTIMATE THE COST-EFFECTIVENESS OF A DELIRIUM PREVENTION INTERVENTION FOR ELDERLY HOSPITALISED PATIENTS

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OBJECTIVES: Delirium is common in hospitalised older patients and leads to poor long term outcomes. An ageing population means it is important to find cost-effective methods for both treatment and prevention. However, few economic evaluations of delirium interventions exist. This study generated an economic model to estimate the cost-effectiveness of an integrated, multi-component targeted intervention (MTI) versus usual care for the prevention of delirium in elderly hospitalised patients. METHODS: A cohort Markov model was developed to calculate expected lifetime costs and quality adjusted life years (QALYs). Model face validity was checked with clinical experts and internal validity via secondary researchers. Health states were: dead, hospitalised, discharge location (home vs. institution). Utility values (SF-6D) were taken from a previous quality of life study. There was longer hospital stay, higher mortality rates and institutionalisation and lower utility values post delirium. Deterministic and probabilistic sensitivity analyses assessed uncertainty surrounding the incremental cost-effectiveness ratio (ICER). Value of information analysis was also conducted. RESULTS: With the MTI reducing delirium probability by one third, the deterministic ICER was just over $1000 per incremental QALY versus usual care. Probabilistic sensitivity analysis suggests there 100% probability of cost-effectiveness when the QALY threshold is $30,000. At this threshold there is no expected value of perfect information (EVPI). Results were robust to one-way sensitivity analysis. A reduction in the annual cost of the intervention was found by almost 25% of the maximum ICER, $110,000 and this is not compatible with the model. Conclusions: The model is highly cost-effective compared to usual care. Further research should focus on probabilistic sensitivity analysis to fully understand cost-effectiveness.

PHS39 COST-EFFECTIVENESS ANALYSIS OF HOME HAEMODIALYSIS FOR DIABETES MELLITUS POPULATION IN TAIWAN

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OBJECTIVES: The number of patients with end-stage renal disease (ESRD) has increased due to the aging population, and more patients are being treated with ESRD in Taiwan. As a result, the national health insurance rate exceeds 95% in Taiwan. In the past, the main treatment for patients with diabetes mellitus (DM) in Taiwan was to use hospital-based haemodialysis in the hospital. However, universal health care was implemented in Taiwan in 2000, and universal health care has been used commonly for ESRD patients in most countries, including Taiwan. Since Taiwan has a universal health care system, costs per patient need to be controlled. The objective of this study was to assess the feasibility of home haemodialysis. The incremental cost-effectiveness ratios (ICER) were calculated, and the model was run with different parameters to obtain results. Sensitivity analyses were implemented based on different costs of haemodialysis machines and transition rates. RESULTS: The most economic choice in the initial stages of treatment was treatment in the hospital. However, home haemodialysis becomes the most cost-effective option after the twenty-sixth month. The ICER is $1262/quality adjusted life year. This study showed that a model that includes transition rates can help to determine the best choice for patients. CONCLUSIONS: Although the cost for home haemodialysis is higher than that for hospital-based haemodialysis in the initial stage, it can be considered the best choice in the long-term stage.

PHS40 COST-UTILITY OF HPV FOR PREVENTION OF CERVICAL CANCER IN THE BORAIMA (BRAZILIAN AMAZONIC REGION): A MARKOV MODEL APPROACH

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OBJECTIVES: To assess cost-utility of the prophylactic HPV vaccination on the prevention of cervical cancer (ICC) in Brazil. ICC is a major public health concern in the Brazilian amazonic region (ICC remains an important public health problem, particularly in developing countries. The Brazilian amazonic region is an high incidence area of ICC, concerning the low low- to middle income countries. What is more, the efficiency of cervical cancer (ICC) remains an important public health problem, particularly in developing countries. The Brazilian amazonic region is an high incidence area of ICC, concerning the low low- to middle income countries. What is more, the efficiency of the current primary prevention program is still an open question. METHODS: A Markov model was developed as an analytic tool to simulate the natural history of HPV and its progression to ICC, considering the current preventive strategies. Transition probabilities were estimated based on local and national studies. The model evaluated the addition of vaccine to 3 cervical cancer screening scenarios (0, 3 or 10 exams throughout life). RESULTS: The scenario of three Pap tests resulted in satisfactory calibration (base case). The addition of HPV vaccination would reduce by 35% the incidence