

was 0.14% and 0.10% at 5 years, and 0.74% and 2.55% at 20 years, respectively. When using the HK equations, incremental incidences were -0.08% and 0.10% at 5 years and -0.27% and -0.18% at 20 years, respectively. **CONCLUSIONS:** Cost-effectiveness analyses require accurate estimates of the incremental benefit associated with comparator treatments. The UKPDS68 and HK equations did not predict consistent incremental event incidences, potentially due to the inclusion of different clinical variables as estimators of risk. This highlights the importance of understanding the effects of specific risk factors upon the estimation of event incidence, especially with respect to different populations.

PRM22

ECONOMIC EVALUATION OF DIABETES CARE INTERVENTIONS IN CHINA: A SYSTEM SCIENCE APPROACH

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OBJECTIVES: Despite the existence of many cost-effective medical and public health interventions in prevention and treatment of diabetes, prevalence and cost of diabetes are growing in China as well as the rest of world. In order to integrate and allocate health system resources to control diabetes successfully, it is necessary to develop dynamic economic evaluation for patient-centered diabetes care from a system perspective. **METHODS:** Based on system dynamic (SD) modeling, this study develops a framework to depict the structure and feedback loops that generate nonlinear relationship between cause and effect in diabetes management. It also uses multichannel datasets in China to validate the model and simulate the costs and effectiveness of different diabetes management interventions and the impact of health insurance policies. Specifically, the framework illustrates a patient's decision making process in physical activities and medication choices and their related cost, clinical outcome, and quality of life over time. It also illustrates how an individual's budget constraint, time constraints and health insurance policy influence their behaviors. The key stock and flow variables in the model are, direct and indirect costs of care, real and perceived risk of diabetes complication, quality of life (QoL), financial burdens, and exercise time. **RESULTS AND CONCLUSIONS:** The study provides insights on how to evaluate cost and effectiveness of type 2 diabetes interventions under the complex scenarios of multi-drug taking, switching drug, and lifestyle changing simultaneously. It suggests that systemic dynamic simulations on cost-effectiveness analysis based on real world data can be a new vehicle for economic analysis along with RTC trails for decision making. The study also builds up a foundation to identify key factors and obstacles in changing patient behavior and providing efficient interventions.

PRM23

SINGLE-ARM STUDIES TO SUPPORT DRUG REIMBURSEMENT IN AUSTRALIA

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OBJECTIVES: Comparative effectiveness, safety and pharmacoeconomic data are required by many health technology assessment agencies to evaluate the relative benefits and costs of drugs seeking public reimbursement. Generally, direct head-to-head trials are considered the best evidence, whilst non-randomised evidence including comparisons of single-arm studies is considered weaker. In Australia, Public Summary Documents (PSDs) report the Pharmaceutical Benefits Advisory Committee's (PBAC) decision-making processes for government reimbursement of medicines. PSDs were reviewed to explore the extent to which single-arm studies have been used as primary evidence for comparative benefits, their success and PBAC's main concerns with this approach, in Australia. **METHODS:** All PSDs published between July 2005 and December 2013 where the primary evidence was reported to be single-arm study(s) were reviewed. Information on the comparator(s), data source(s), clinical claim, economic analysis, PBAC concerns and recommendations were analysed. **RESULTS:** Thirteen product submissions met the inclusion criteria. Two were for modifications of formulations already reimbursed based on comparative evidence, and were excluded. In another nine submissions, a single arm of a comparative trial was compared with external sources, due to the trial comparator not being relevant to the clinical setting. Of the 11 submissions included for review, nine used published data to estimate the comparator's effectiveness and safety. One of these submission also used data from a local observational study. Three presented no comparator data. Ten submissions claimed superior efficacy and/or safety over the comparator. Six of the 11 products were recommended for reimbursement, of which five claimed superiority. Of the five products not recommended, four claimed superiority. Factors associated with a positive recommendation were high clinical need or evidence of effectiveness in other indications. **CONCLUSIONS:** While presenting methodological challenges, single arm studies can be used to demonstrate robust evidence of superior effectiveness and support recommendations for public reimbursement of drugs in Australia.

PRM24

A SINGLE MODEL FOR DETERMINING SOCIOECONOMIC STATUS IN HEALTH STUDIES; A CRUCIAL STEP TO MAKE THE RESULTS MORE COMPARABLE

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OBJECTIVES: Socioeconomic status (SES) is a multidimensional theoretical construct that covers a variety of social and financial circumstances. The selection of indicators and their ranking for individual's classification are of the challenging issues in socioeconomic studies. Also integrating different indicators in determining SES is usually complex and multidimensional. The aim of this study was to develop a model for measuring SES independent of time and place of study. **METHODS:** In order to identify proper indicators for determining the SES of individuals, a wide-spread search was conducted on Pubmed, Embase and Google Scholar. The relevant

indicators were selected based on literature review and concept-focused group. Also, experts' opinions considered for scoring these indicators. These indicators were weighted by Stepwise Adoption of Weights and were used to develop a model for measuring SES. **RESULTS:** Five indicators were selected for determining SES of individuals. These indicators include income, occupation, education, home status and family size. A model for income classification based on city poverty line (CPL) was established. The experts' opinions were integrated in order to reach a degree of consensus on the given scores to different occupation groups. A model for home status ranking based on national minimum wage (NMW) was introduced. A single model was developed to score homeowners and tenants at the same time. **CONCLUSIONS:** Four important findings emerged from this study. These include: 1. the average weight and the percentage of the impact of each socioeconomic indicator on the socioeconomic status of individuals are suggested. 2. A model based on CPL is introduced for income classification. 3. A model based on NMW is developed for rent ranking. 4. A single model is accomplished for comparing homeowners and tenants. These findings may help researchers to apply a single model for determining SES, by which the results of various studies could be compared more directly; particularly in middle-income countries.

RESEARCH ON METHODS – Patient-Reported Outcomes Studies

PRM25

THE RELIABILITY AND VALIDITY OF THE CHINESE VERSION OF THE EIGHT-ITEM MORISKY MEDICATION ADHERENCE SCALE

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OBJECTIVES: The aim of this study was to translate and construct the Chinese version of the eight-item Morisky Medication Adherence Scale (MMAS-8) among Taiwanese patients with hypertension. **METHODS:** 604 outpatients with established chronic hypertension at a regional hospital in eastern Taiwan were enrolled. Using a cross-sectional study, blood pressure (BP) was measured for and structured questionnaires were answered by all participants. Standard forward and backward translation, proofreading and joint discussion procedures were used to translate the MMAS-8. Internal consistency was assessed using Cronbach's α coefficient, construct validity using factor analyses, and concurrent validity using correlation analysis. All data were analyzed using SPSS 20.0 statistical analysis software. **RESULTS:** The mean of MMAS-8 scores was 2.6. Adherence and poor adherence of patients accounted for 57.5% and 42.5%, respectively. Cronbach's α was found to be 0.83 (0.81-0.85) with 95% CI. Factor analysis was found R² (46%), and all factor loadings of the MMAS-8 was greater than 0.30. Adherence was positively correlated with attitude ($r=0.24, p=0.00$), subjective norm ($r=0.33, p=0.00$), perceived behavior control ($r=0.51, p=0.00$), and intention ($r=0.49, p=0.00$). Adherence was positively correlated with the SBP ($r=0.11, p=0.01$), DBP ($r=0.16, p=0.00$) and the MAP ($r=0.15, p=0.00$). When SBP and DBP were considered independently, adherence was significantly different between good and poor controls of SBP and DBP. The two groups were positively correlated with SBP control ($r=0.09, p=0.02$) and DBP control ($r=0.10, p=0.01$). **CONCLUSIONS:** the Chinese version of the MMAS-8 is a reliable and valid measure of medication adherence in Taiwanese patients with hypertension.

PRM26

HbA1c CONTROL PREDICTIVE VALIDITY OF FOUR SELF-REPORTED MEASURES OF ANTIDIABETES MEDICATION ADHERENCE

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OBJECTIVES: The aim of this study was to assess the predictive validity of four self-reported measures of adherence on glycemic control measured with HbA1c. **METHODS:** A survey conducted to assess factors associated with adherence to non-insulin antidiabetes drugs in the Canadian province of Quebec serves as the background for the present study. Participants completed an on-line questionnaire in which adherence to their treatment was assessed using four self-report instruments: the 4-item and 8-item Morisky Medication Adherence Scales (MMAS-4/8), an adaptation of a 5-item scale previously developed to be used with HIV patients and a 5-point Likert single item scale developed by our team. A sample of those who completed the questionnaire was then asked between 3 and 6 months later to measure their HbA1c. We plotted a receiver operating characteristics (ROC) curve for each adherence measure and glycemic control (HbA1c $\leq 7\%$ - $>7\%$). The predictive performance of each instrument was assessed using the area under the ROC curve (AUC). AUC ranges from 0 to 1, with 0.5 indicating a no better than chance prediction. **RESULTS:** A total of 117 participants were studied. Non-stratified analyses yielded an AUC of 0.515 (95% CI: 0.423-0.606) for the MMAS-4, 0.532 (0.431-0.633) for the MMAS-8, 0.541 (0.452-0.629) for the HIV-adapted scale, and 0.524 (0.441-0.607) for our scale. **CONCLUSIONS:** Overall all 4 self-reported measures of adherence exhibited a poor validity at predicting glycemic control.

PRM27

CONSTRUCT VALIDITY OF SF-6D HEALTH STATE UTILITY VALUES IN AN EMPLOYED POPULATION

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A valid utility-based self-report measure is essential for evaluating health changes in employees. Health utility values permit cost utility analysis to be performed, an analytical technique rarely utilised in economic evaluations of workplace health promotion. There is no validated health utility measure in working populations. **OBJECTIVES:** To investigate the construct validity of SF-6D health utility instrument in a public service workforce. **METHODS:** The SF-12v2 Health Survey was administered to 3409 randomly selected public service employees in Australia in 2010. SF-12 scores were converted to SF-6D health utility values using Brazier's