PRM29
COMPARISON OF DISCRETE DISCOUNTING AND NON-CONSTANT EXPONENTIAL DISCOUNTING APPROACHES TO CALCULATE FUTURE GAINS IN QUALITY-ADJUSTED LIFE-YEARS
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OBJECTIVES: Several large scale surveys conducted to measure time-preferences of people in various fields, other than those in the health outcomes, have shown that time-preference adherence to current exponential discounting. In pharmacoeconomic studies, however, all outcomes measures including quality-adjusted life-years (QALYs) use discrete discounting. Disability-adjusted life-years (DALYs) is an exception that is discounted using the non-constant exponential discounting approach. The objective of this paper is to present the current literature on time-preferences specific to health outcomes and compare the differences between QALY’s obtained through discrete discounting and non-constant exponential discounting approaches. METHODS: We searched PubMed and EconLit for methodological studies examining time-preferences specific to health outcomes. We projected gains of 0.1 QALY/person/year over 1 to 75 years in a hypothetical dataset of 100 persons. We calculated differences in present values of QALY’s obtained through discrete discounting and non-constant exponential discounting approaches, i.e. QALYs from discrete discounting subtracted by QALYs from non-constant discounting for reimbursement decision. The differences were calculated at 15%, 3%, 5%, and 7%, from 1 to 75 years.
RESULTS: We found no studies that examined discounting approaches specific to health outcomes. The differences in present values of QALY’s at 25, 50, and 75 years, respectively, were: 1) 0.3%, 0.55%, and 0.83%, using a 1.5% discount rate; 2) 1.1%, 2.2%, and 3.3%, using a 3% discount rate; 3) 3.5%, 5.9%, and 8.7%, using a 5% discount rate; and 4) 5.7%, 11.1%, and 16.1%, using a 7% discount rate.
CONCLUSIONS: We found no published research comparing discrete discounting to non-constant exponential discounting approaches for QALYs. Over long time horizon, we found that the differences are significantly important differences between QALY’s estimated by these approaches. Therefore, we recommend future studies to address time-preferences specific to determine if non-constant exponential discounting is relevant to health outcomes such as QALYs.

PRM30
A MULTI-STATE MODEL TO PREDICT RISK OF NON-ADHERENCE TO MEDICATIONS HIGHLIGHTED IN CMS STAR-RATINGS
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OBJECTIVES: The Center for Medicare and Medicaid Services (CMS) has created plan Star ratings that indicate the quality of Medicare plans. In 2012, CMS added rating medication categories are included. Patients included in the model have a plan Star rating of 3 stars or more which is calculated using prescription drug and medical claims from a large managed care database. Medicare and commercially insured patients over age 55 from 2008-2010 who are new to the Star rating medication categories are included. Patients included in the model have a full year of continuous enrollment in a Part D prescription drug plan, at least 180 days of drug use, and have a non-responding (responding) patients with 12, 18 and 24 months minimum survival time guaranteed scenarios, respectively.
RESULTS: To define an operational modelling framework intended to help the CMS payers’ aspiration to performance-based risk-sharing operations (PBRS) schemes. A time-to-event end-point is used as a performance criterion. Such survival endpoints are commonly used in clinical studies, notably in oncology where PBRS schemes are gaining momentum. METHODS: The framework is based on an open population model that is run and compared in terms of their operational and financial implications. Additions, and the effect of potential revisions of a PBRS scheme terms and conditions, can also be examined as real-life information becomes available following scheme implementation (i.e. Bayesian updating). RESULTS: For example, assuming 1,000 patients enrolled in a PBRS scheme, with a monthly dosing schedule and given discounting parameter (λ = 5.0, β = 0.4) and survival (Weibull α = 0.7, β = 27.0) assumptions, the model predicts that 1937 (6970), 4050 (7861) and 9282 (4420) doses will be given to non-responding (responding) patients with 12, 18 and 24 months minimum survival time guaranteed scenarios, respectively. CONCLUSIONS: This framework provides a platform for payers and manufacturers with valuable insight into the operational and financial dimensions of the potential PBRS schemes they may contemplate as they negotiate patient access conditions. Both parties can better anticipate the implications of the schemes and better plan resources, logistics and financial arrangements accordingly.

PRM33
VALIDATING A WEB-BASED, INCREMENTAL COST-EFFECTIVENESS SOFTWARE PROGRAM THAT IMPLEMENTS A MARKOV CHAIN MONTE CARLO (MCMC) ANALYSIS MODEL
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OBJECTIVES: To evaluate a web-based software program which incorporates Markov Chain Monte Carlo (MCMC) analysis to compare the cost-effectiveness of any two treatments, allowing modifiable inputs of key variables. METHODS: A web-based software program was developed, which incorporates Markov Chain Monte Carlo (MCMC) analysis to compare the cost-effectiveness of any two treatments. The online software program was based on calculation methods described in “Decision Making in Health and Medicine” textbook from Hunink et al. The MCMC calculations were performed using the R statistical language which is available as freeware at www.r-project.org. RESULTS: The web-based tool creates plots of incremental costs versus incremental utilities, in cost-effectiveness quadrant. MCMC has advantages over other analytical approaches. The differences in present values of QALYs, at 25, 50, and 75 years, respectively, were: 1) 0.3%, 0.55%, and 0.83%, using a 1.5% discount rate; 2) 1.1%, 2.2%, and 3.3%, using a 3% discount rate; 3) 3.5%, 5.9%, and 8.7%, using a 5% discount rate; and 4) 5.7%, 11.1%, and 16.1%, using a 7% discount rate.
CONCLUSIONS: We found no published research comparing discrete discounting to non-constant exponential discounting approaches for QALYs. Over long time horizon, we found that the differences are significantly important differences between QALY’s estimated by these approaches. Therefore, we recommend future studies to address time-preferences specific to determine if non-constant exponential discounting is relevant to health outcomes such as QALYs.

PRM31
EVALUATION OF DECISION ANALYTIC MODELS IN COST-EFFECTIVENESS ANALYSIS IN KOREA: FROM GUIDELINE TO PRACTICE
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OBJECTIVES: Korea’s Health Insurance Review and Assessment Service (HIRA) has been in charge of formulating economic evaluation guideline and evaluating submissio-