OBJECTIVES: Previous reviews of cost-effectiveness analyses (CEAs) of varicella vaccination found that dynamic transmission models should be used to properly account for indirect effects of vaccination. This study reviews CEAs of varicella vaccination that used a dynamic model to identify parameters with the greatest impact on the CEA results. METHODS: A targeted search of MEDLINE was conducted to identify dynamic transmission models that used a varicella model. We assessed the structural assumptions and input parameters that had the greatest impact on the cost-effectiveness results and summarized the ranges of input values and primary data sources. RESULTS: For estimating the impact of a dynamic transmission model on the CEA, these results showed the most sensitivity to 2 structural assumptions: 1) inclusion of zoster and 2) inclusion of indirect costs. For example, whether or not zoster was included changed results from “cost saving” to exceeding country-specific thresholds for cost-effectiveness. These results depended on the assumed magnitude of the impact of varicella vaccination on zoster cases and the time horizon for the CEA. Three input parameter values were impacted: the risk of developing zoster on the day of varicella, 2) estimates of productivity loss per case of varicella (0.27 to 8.8 days for caregivers of children, 2.6 to 26.1 days for adults) and 3) estimates of QALY lost per case of natural varicella (0.0037 to 0.0044 [uncomplicated case], 0.0057 to 0.017 [complicated case]), per case of breakthrough varicella (20% to 50% of natural case value), and per case of zoster (0.01 to 0.12 [younger/less severe case], 0.201 to 0.52 [older/more severe case]). CONCLUSIONS: Future research should be prioritized for epidemic and economic parameters that contribute the most to these findings. However, there is large uncertainty and that impact the results and, consequently, decisions about varicella vaccination programs.

PMQ18 IMPLICATIONS OF THE INTER-RELATIONSHIP OF THE PROPORTIONAL AND ABSOLUTE QALY SHORTFALL MEASUREMENTS FOR DISEASE BURDEN
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OBJECTIVES: Health technology appraisal bodies such as NICE in the UK have shown a trend to use the absolute and proportional quality adjusted life year (QALY) shortfall to represent aspects of disease burden. NICE originally proposed in their value based assessment consultation paper that additive cost-effectiveness threshold weightings could be applied according to both the absolute and proportional QALY shortfall. This analysis sought to understand the relationship between the absolute and proportional shortfall and therefore whether the proposal by NICE was justified. METHODS: The conditions selected were identified from NICE single technology appraisals published between July 2011 and December 2014. The age that treatment commenced was taken from manufacturer manuals and combined with the gender-dependent average life expectancy and age- and gender-dependent utilities in the UK to calculate the discounted QALYs accrued by a lifetime. Sensitivity analysis was used to explore the impact of key assumptions. RESULTS: Absolute and proportional QALY shortfalls were calculated for each condition. The data were analysed using linear OLS regression, with the absolute shortfall being the dependent variable. Appraisals were excluded if the manufacturer submission was missing or if the time horizon was not lifetime. RESULTS: The absolute and proportional QALY shortfalls were calculated for 43 conditions. The regression line had a y-intercept of 0.005 and the r-squared value was 0.84, indicating that there is a strong positive correlation between absolute and proportional QALY shortfall. This is not surprising given that the variables are mathematically coupled. CONCLUSIONS: Absolute and proportional QALY shortfall are not independent variables, but are mathematically related, and therefore bodies such as NICE should avoid assigning additive weights to these measures. If additive weights were assigned, conditions where the QALY does not fully capture the benefits of new technologies would be particularly disadvantaged.

PMQ29 EXPLORING POTENTIAL DRIVERS OF THE SYSTEMATIC OVERUSE OF HEALTHCARE IN THE UNITED STATES USING THE JOHNS HOPKINS OVERUSE INDEX (JHOI)
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OBJECTIVES: The Johns Hopkins Overuse Index (JHOI) was designed as a composite measure of systematic overuse that was operational in claims data. Unlike measures and combined with the gender-dependent average life expectancy and age- and sex), chronic (ten groups) and risk factors. To estimate the function a multiple regression model was used to identify statistically significant variables that explain spending the best model, low goodness of fit and reporting criteria. Reliability tests on individual DCEs were not robustness tests for each variable and the model generally applied. Furthermore, deviations between different insurers were identified. RESULTS: The final linear function includes 18 different variables, all significant at 10%, with an R2 of 76%. The regression coefficients are spending for a group of men is lower than that of women. The differences in betas by age groups were not significant, but different in the groups with chronic diseases and comorbidity. Can be estimated average costs for patients with chronic diseases. When testing model fit on the same database, the goodness of fit, 99% of health care spending in real per capita was $447,370 versus estimated by the model equals $447,370. CONCLUSIONS: estimating a model that includes variables associated with the disease gives higher accuracy than when only demographic variables are used and allow a more equitable distribution of risk-based resources and could be a better alternative in defining the insurance premium for a country like Colombia.

PMQ30 SUGGESTION OF NEW METHODS TO CALCULATE CONFIDENCE INTERVAL FOR INCREMENTAL COST-EFFECTIVENESS RATIO WHICH SOLVE THE ISSUES WITH CONVENTIONAL METHOD
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OBJECTIVES: To review the issues in calculating confidence intervals (CIs) of the incremental cost-effectiveness ratio (ICER) with conventional methods and to propose new methods defining more appropriate ranges to evaluate the uncertainty of cost-effectiveness analysis. Conventional methods to calculate CIs first obtain the cost-effectiveness ratio through Monte Carlo simulation. Next, 95% of the distribution is surrounded with two lines that pass through the origin, and the slopes of these two lines will be assumed to be the upper and lower CI. In some situations, the upper CI are spending for a group of men is lower than that of women. The differences in betas by age groups were not significant, but different in the groups with chronic diseases and comorbidity. Can be estimated average costs for patients with chronic diseases. When testing model fit on the same database, the goodness of fit, 99% of health care spending in real per capita was $447,370 versus estimated by the model equals $447,370. CONCLUSIONS: estimating a model that includes variables associated with the disease gives higher accuracy than when only demographic variables are used and allow a more equitable distribution of risk-based resources and could be a better alternative in defining the insurance premium for a country like Colombia.

PMQ30 SHOULD DECISION MAKERS EMBRACE NON-CONSTANT DISCOUNTING?
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OBJECTIVES: Much recent debate has focused on the merits of differential discounting of costs and effects. Yet relatively little attention has been paid to the merits of using discount rates that are time-dependent (i.e. non-constant). Recent research shows that appropriate discount rates depend upon the real rate of borrowing. Since this is determined by the bond market, and since real yields differ on bonds of different maturity, this implies that discount rates ought to be non-constant. Recent research has also demonstrated that conventional objections to non-constant discounting, such as the risk of time-inconsistency, may no longer hold. Our research thus recommends that research into the effects of varying the rate of discount about the merits of non-constant discounting. METHODS: We review the theoretical and empirical literature around the use of non-constant discounting, consider whether non-constant discounting is appropriate for social decision making, and (if so) propose how decision makers can incorporate non-constant discounting in a way that is time-consistent and which accounts for intergenerational equity and other social value considerations. We also consider, and propose solutions to, technical hurdles associated with adopting non-constant discounting. RESULTS: The conventional approach to discounting (using a constant rate) is appropriate only in special cases where specific assumptions are adopted. In general, non-constant discounting is preferable. Recent work has overcome both the technical and technical objections to the adoption of non-constant discounting. CONCLUSIONS: Decision makers should reconsider their existing discounting methodology to ensure that it is compatible with their perspective on social choice, any budget constraints faced, and other considerations. Where non-constant discounting is found to be appropriate, it should be embraced by decision makers.