Quality Of Reporting And Analysis Of Trial-Based Cost Efectiveness Evaluations In Obstetrics And Gynaecology; A Systematic Review

El Alili, M.; van Dongen, J. M.; Huirne, J.; van Tulder, M. W.; Bosmans, J. E.

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PRM211
CHANGES IN PRIVATE FINANCING OF THE GREEK HEALTH SYSTEM DURING THE ECONOMIC CRISIS
Yfantopoulos J[1], Chantzaras A[1], Ollandezos M[2]
[1]*University of Athens, ATHENS, Greece,* [2]*Panhellenic Association Of Pharmaceutical Industry, Athens, Greece*
OBJECTIVES: Several reforms have been implemented during the recent years to curtail public health spending in Greece. The aim of this study was to explore the impact of the recent reforms and economic crisis on out-of-pocket (OOP) payments. **METHODS:** Data for 26.941 households were derived from the Household Budget Surveys for the period 2008-2014. Expenditure data were deflated (2008=100) with the price index and were also equivalised with respect to the economy scale of household consumption. Households were disaggregated into five consumption expenditure quantiles. **RESULTS:** Both mean annual equivalised total consumption and OOP payments demonstrated a downward trend during 2008-2014, albeit for consumption the relative change was larger at the end of the period of observation, i.e. -32.3% (from 18402.00 € to 12459.73 €) vs. -21.7% (from 1016.00 € to 795.76 €), respectively; the share of OOP outlays to total consumption increased from 5.5% to 6.4% between 2008 and 2014. In the lowest expenditure quintile, although the share of OOP was reduced from 6.6% to 5.8%, an ascending trend is recorded following 2012. Spending for medical products and inpatient care increased by 25.8% (from 248.60 € to 312.85 €) and 48.45% (from 149.51 € to 222.08 €) respectively, while for outpatient care it decreased by -57.80% (from 617.89 € to 260.84 €). The poorest quintile devoted the chunk of their health spending to medical products across all years, and a 14% rise (from 51% to 66%) is recorded between 2008 and 2014. **CONCLUSIONS:** The recent reforms have shifted part of the Greek health system's financing to health consumers, for pharmaceutical and hospital care in particular. However, the increase in OOP inpatient spending is mainly driven by the higher socioeconomic strata. Promotion of the prescription and dispense of generic medicines may lessen the financial burden related to co-payments for poorer citizens.

PRM212
IMPACT OF NON-RANDOMISED DROP-OUT ON TREATMENT SWITCHING ADJUSTMENT IN THE RELAPSING-REMITTING MULTIPLE SCLEROSIS CLARITY TRIAL AND THE CLARITY EXTENSION STUDY
Bell Gorrod H[1], Latimer N[1], Damian D[2], Hettle R[3], Harty GT[4], Wong SL[2]
[1]*University of Sheffield, Sheffield, UK,* [2]*EMD Serono, Inc., Billerica, MA, USA,* [3]*PAREXEL International, London, UK,* [4]*Merck Serono, London, UK*
OBJECTIVES: The rank preserving structural failure time model (RPSFTM) can be used to adjust time-to-event efficacy estimates for treatment switching. The RPSFTM relies on two key assumptions (1) common treatment effect (CTE) assumption, which assumes that the effect of treatment was equal regardless of when it is received and (2) randomisation assumption, which can be violated if non-random drop out occurs during follow-up. The aim of this analysis was to assess the sensitivity of the RPFSTM results to these assumptions when applied to time to 6-month confirmed disability progression in the CLARITY and CLARITY Extension study. **METHODS:** We applied the rank preserving structural failure time model (RPSFTM) to adjust for treatment switching from placebo to low-dose cladribine. A propensity score matching (PSM) method was used to test the sensitivity of the RPSFTM to the CTE assumption. The PSM method does not rely on the CTE, however estimation of an unbiased HR still requires that the randomization assumption holds. To overcome this issue, the PSM method was combined with inverse probability of censoring weights (IPCW) to adjust for potential selection bias from non-enrolment into the extension study. The PSM method and IPCW require all relevant confounders are included in the estimation procedure. **RESULTS:** During CLARITY, the cladribine tablets (3.5 mg/kg) vs placebo HR was 0.58 (95% CI 0.40-0.83). During CLARITY+ CLARITY Extension, the unadjusted HR was 0.67 (95% CI 0.50-0.90), the RPSFTM HR was 0.62 (95% CI 0.44-0.88), the PSM was 0.62 (95% CI 0.40-0.84), and the PSM+IPCW HR was 0.63 (95% CI 0.40-0.87). **CONCLUSIONS:** The adjustment methods produced consistent results. The addition of IPCW to the PSM made little difference. Provided the assumption of no unmeasured confounders holds, these results indicate no significant bias in the RPSFTM cladribine efficacy outcomes due to participant non-enrolment into the extension study or violation of the CTE assumption.

PRM213
QUALITY OF REPORTING AND ANALYSIS OF TRIAL-BASED COST EFECTIVENESS EVALUATIONS IN OBSTETRICS AND GYNAECOLOGY; A SYSTEMATIC REVIEW
El Alili M[1], van Dongen JM[1], Huirne J[2], van Tulder MW[1], Bosmans JE[1]
[1]*Vrije Universiteit Amsterdam, Amsterdam, The Netherlands,* [2]*VU University Medical Centre, Amsterdam, The Netherlands*
OBJECTIVES: This systematic review aimed to assess whether the reporting and analysis of trial-based economic evaluations in obstetrics and gynaecology comply with existing guidelines and recommendations, and whether this has improved over time. **METHODS:** A literature search was performed in MEDLINE, NHS Economic Evaluation Database and Health Technology Assessment to identify trial-based economic evaluations in obstetrics and gynaecology published between January, 2000 and May, 2017. Studies performed in middle and low income countries, and studies related to prevention, midwifery and reproduction were excluded. Reporting quality was assessed using the Consolidated Health Economic Evaluation Reporting Standard statement and the statistical quality using a literature-based list of criteria. Exploratory regression analyses were performed to assess the association between reporting and statistical quality and publication year. **RESULTS:** The electronic search resulted in 5,482 potentially eligible studies. Forty-five studies fulfilled the inclusion criteria, 22 in obstetrics and 23 in gynaecology. Twenty-seven (60%) studies adhered to less than 50% (n=10) of the reporting quality items and 32 studies (76%) met less than 50% (n=4) of the statistical quality items. As for the statistical quality, none of the studies used appropriate methods to evaluate cost differences, to deal with missing data, and clustering of data. No significant improvements over time were found in reporting or statistical quality in gynaecology, whereas in obstetrics a significant improvement in reporting and statistical quality was found over time. **CONCLUSIONS:** The reporting and analysis of trial-based economic evaluations in gynaecology and obstetrics is generally poor. Poor reporting and analysis of trial-based economic evaluations can result in biased results, leading to incorrect conclusions, and inappropriate healthcare decisions. Therefore, there is an urgent need to improve in the methods of economic evaluations in this field. Further research is needed to explore whether results from this review are generalizable to other medical disciplines than obstetrics and gynaecology.

PRM214
COMPARATIVE EFFECTIVENESS STUDY OF A NEW BAYESIAN'S CAUSAL INFERENCE METHOD
Huang B[1], Liu J[1], Chen C[1], Sivaganisan S[2]
[1]*Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA,* [2]*University of Cincinnati, Cincinnati, OH, USA*
OBJECTIVES: We present a Bayesian's semi-parametric causal inference method using Gaussian Process (GP) Prior that is designed to evaluate the averaged causal treatment effect. The method is compared with other commonly used causal inference methods under simulation studies where the true functional form of the model is unknown. The case study applied the method to a comparative effectiveness research (CER) to evaluate the effectiveness of early initiation of biologic treatment for children with newly diagnosed Juvenile idiopathic arthritis (JIA). **METHODS:** The proposed Bayesian GP model can incorporate prior information about covariate matching, thus offers a natural way for Bayesian causal inference to address the treatment selection bias as part of the outcome modeling. Simulation studies compared the performances of different statistics causal inference methods, including propensity score sub-classification, inverse treatment probability weighting (IPTW), regression adjustment, Bayesian additive regression tree (BART) and the newly proposed Bayesian GP causal inference method. Finally, we applied the methods to a prospective inception cohort CER study that followed 98 children with JIA and treated on DMARDs at baseline. The study endpoint was Juvenile Arthritis Disease Activity Score (JADAS) at the 6 months of follow up visit. **RESULTS:** Our simulation study demonstrates the proposed method clearly outperform the existing methods in terms of bias, coverage rate and root mean square error, and is well calibrated in Frequentist properties. Bayesian GP method find children treated with early aggressive biologic DMARDs show 3.83 points improvement (95% confidence interval of 0.14-7.53) in JADAS than those treated with non-biologic DMARDs at 6 month. Other causal inference methods suggested improved JADAS but varying in estimated averaged treatment effect and with wider confidence intervals. **CONCLUSIONS:** The proposed method offers more efficient and robust Bayesian's approach to causal inference, and is particularly useful for CER with rare disease and/or small sample size.

PRM215
MAXIMUM DIFFERENCE SCALING TO ENHANCE INSIGHT IN QUALITATIVE PAYER RESEARCH
Jones-Phillips DL, Bradshaw SE
Valid Insight, London, UK
OBJECTIVES: Multiple-Criteria Decision Analysis (MCDA) considers multiple criteria in complex decision-making environments, helping to understand needs and preferences in healthcare. Here we assess the benefits of MCDA vs Likert preference scales to understand payer preferences. **METHODS:** Multiple MCDA methods can be applied. Qualitative payer research often has restricted sample sizes and interview duration does not permit using lengthy assessments. Maximum Difference scaling has been validated for small sample sizes. From an online platform, respondents select and weight attributes and criteria relevant to their decision-making context. Payers from national, regional and local levels from France, Germany, Spain, Sweden the UK (n=5 per country) and US (n=15) underwent in-depth interviews to understand their opinions on the attributes of a novel product profile. Likert (7-point scale) and Maximum Difference exercises were completed. Median Likert scores were calculated, and hierarchical Bayesian analyses were performed on the Maximum Difference data. **RESULTS:** Likert scale results show that respondents tended to avoid extreme scores, known as 'central tendency bias', resulting in a restricted score range of 3-6. Thus, although interview findings provided more granularity, isolated scores were not sufficiently spread to confidently state any one attribute was preferred over another. With Maximum Difference, total score differentiation was more pronounced, with a 12 point spread between maximum and minimum values. **CONCLUSIONS:** Payer research is a key pre-market step to understand opportunities for pricing, reimbursement and market access. Unlike market research, the aim for market access research is robust insight. While Likert scales are frequently used, easy to construct and implement, validity and reproducibility are among their weaknesses. In our comparison of approaches to capturing payer preferences for product attributes, we have demonstrated that a short, well designed Maximum Difference exercise can produce clearer and less biased preference data than a Likert scale, even with a small sample size.

PRM216
THE USE OF MATCHING ADJUSTED INDIRECT COMPARISON (MAIC) AND SIMULATED TREATMENT COMPARISON (STC) IN HTA SUBMISSIONS; LEARNINGS FROM RECENT SUBMISSIONS
Pooley N, Papageorgakopoulou C, Adkins E, Payne R
PHMR Ltd, London, UK
OBJECTIVES: It is increasingly common for health technology assessment (HTA) submissions to be prepared based on evidence from single arm trials or in situations where comparisons cannot be made between randomised controlled trials (RCTs). Manufacturers are using increasingly complex statistical approaches to fulfil the requests of HTA bodies for robust comparisons between drugs of interest in these situations of data paucity. In this study we evaluate the use of two of the main approaches used in recent oncology HTA submissions, "Matching Adjusted Treatment Comparison" (MAIC) and "Simulated Treatment Comparison"