Consideration of the causes of variability and appropriate statistical analyses to generate unbiased estimators and reliable confidence intervals remains a challenge for these studies.

PRM28 WHAT ARE INDIRECT COSTS IN NEURODEGENERATIVE DISEASES? A METHODOLOGICAL REVIEW Costas N., Derouaux-Burel H., Molinier L.

OBJECTIVES: Neurodegenerative diseases (NDs) refer to a group of diseases that affect brain cells. Alzheimer disease (AD), Parkinson disease (PD), Amyotrophic Lateral Sclerosis (ALS) and Multiple Sclerosis (MS) are the most prevalent NDs. NDs cause substantial economic burden worldwide and indirect costs are an important component of total costs. This study aims to review relevant papers to characterize the different components of indirect costs and to identify the weight of indirect costs in total costs in different NDs. METHODS: A systematic bibliographic search was performed on an international medical literature database (MEDLINE). All studies which assessed the economic social burden and indirect costs of different NDs were selected. Indirect costs were characterized into several types (i.e. sick leave, cost-effectiveness of implemented vaccination programs) and compared with those obtained from GLM (multistate) and pseudo out-of sample (PSM) techniques.

Results: We conducted a narrative review of the literature on indirect costs of NDs. We identified 122 studies published between 2000 and 2014. The main indirect costs component in AD was informal care time and attributable to vaccination efforts, the hypothetical no vaccination comparator study. As of January 2014, there are 199 NASH studies posted on www.clinicaltrials.gov using search term “NASH”, and assess efficacy outcomes, related length of clinical programs, and research activities in relation to epidemiology. Objectives: To evaluate the economic impact of NASH on healthcare systems and to provide decisionmakers with useful information for formulating and implementing strategies to reduce the burden of NASH on healthcare systems.

Results: Our analysis of 113 NASH studies published between 2000 and 2014 showed that the mean cost of NASH per patient treated was $27,932, or $1,915 per year. The mean cost of NASH per patient year in the US was $23,250, or $1,500 per year. The mean cost of NASH per patient treated in the US was $27,932, or $1,915 per year.

Conclusions: Our analysis shows that NASH is a significant economic burden on healthcare systems and that policymakers should consider implementing strategies to reduce the burden of NASH on healthcare systems.}

PRM29 NOT AS EASY AS IT SOUNDS: CHALLENGES IN ASSESSING THE VALUE FOR MONEY OF IMPLEMENTED VACCINATION PROGRAMS Newall A.T., Reyes Y., Alpatov E.B., McIntyre P.B., Menzies L.B.

OBJECTIVES: In this study, we explore the methodological challenges in retrospective economic analyses of vaccine programs and offer direction for future evaluations in the area. Post-implementation evaluation should be an important part of assessing the success of public health programs, however relatively little attention has been focused on evaluating the value for money achieved by vaccination programs after they have been introduced. METHODS: We conducted a narrative review of the limited existing economic evaluation literature assessing the cost-effectiveness of implemented vaccination programs. We evaluated the alternative approaches to addressing the challenges that these retrospective evaluations present. These challenges were then contrasted and compared with those of prospective economic evaluations. RESULTS: The key challenges identified for retrospective evaluations include the estimation of disease changes attributable to vaccination efforts, the hypothetical no vaccination comparator and the full benefits likely to be achieved by implemented vaccination programs. We identified alternative approaches to addressing the key challenges that retrospective evaluations present. These challenges were then contrasted and compared with those of prospective economic evaluations.}

PRM30 ESTIMATING THE COST OF HEALTH CARE ASSOCIATED INFECTIONS CONTROLLING FOR BOTH PATIENT VARIABILITY AND TIME-DEPENDENT BIAS Shih W., Greco G., Gelijns A., Blackstone E., Moskowitz A., O’Gara P., Jeffries N., Beutels P.

OBJECTIVES: In the current healthcare environment, it is critical that we obtain better insights into the economic burden of major complications, such as healthcare-associated infections (HAIs). The use of propensity score matching (PSM) in studies can help to remove potential confounders and produce unbiased results. Model-based PSM outperforms other methods in terms of estimating sensitivity analysis. The careful selection of a matching algorithm can play a pivotal role in economic investigations for major complications. We conducted a systematic bibliographic search on an international medical literature database (MEDLINE). All studies which assessed the economic burden of HAIs were selected. The main indirect costs component in AD was informal care time and attributable to vaccination efforts, the hypothetical no vaccination comparator.

Results: We conducted a narrative review of the limited existing economic evaluation literature assessing the cost-effectiveness of implemented vaccination programs. We evaluated the alternative approaches to addressing the key challenges that retrospective evaluations present. These challenges were then contrasted and compared with those of prospective economic evaluations.

Conclusions: The key challenges identified for retrospective evaluations include the estimation of disease changes attributable to vaccination efforts, the hypothetical no vaccination comparator and the full benefits likely to be achieved by implemented vaccination programs. We identified alternative approaches to addressing the key challenges that retrospective evaluations present. These challenges were then contrasted and compared with those of prospective economic evaluations.

PRM31 PERFORMANCE COMPARISON OF DIFFERENT TYPES OF PROPENSITY SCORE MATCHING ALGORITHMS IN A STUDY OF RARE DISEASE TREATMENT COST-COMPARED USING REAL WORLD EVIDENCE Han Y., Iodovski N.

OBJECTIVES: It is well accepted that data pre-processing and the creation of matching sets can provide a more balanced assessment in real world evidence analysis. The objective of this study is to show that proper selection of a propensity score matching (PSM) algorithm can significantly enhance the sensitivity of treatment comparisons for rare disease using claims data. Five years of retrospective inpatient commercial insurance claims data from Truven MarketScan were used to compare the six-month drug cost of ‘Drug X’ to ‘Drug Y’ for a rare disease, with Drug Y being the market leader. Within this study, three different types of PSM techniques were used (naïve matching, logit and recursive partitioning) to determine the impact of matching algorithms on the sensitivity of final comparison. A 2:1 matching ratio was used to take advantage of much larger patient pool for Drug Y. RESULTS: Without PSM, the difference in cost of the two treatments was not statistically significant, although these results show that the spending for Drug X patients is approximately $220 less than Drug Y users over a 6 month period. In the naive matching method, the drug cost of treatment X was $294 lower than treatment Y, although the observed difference was not statistically significant. Using the logit regression algorithm, it was found that the mean cost of Drug X was approximately $368 lower than Drug Y (p<0.028). Lastly, with non-inventive partitioning the treatment cost savings of Drug X was $358 lower than Drug Y (p<0.045). CONCLUSIONS: The use of PSM in studies can help to remove potential confounders and produce unbiased results. Model-based PSM outperforms other methods in terms of estimating sensitivity analysis. The careful selection of a matching algorithm can play a pivotal role in economic investigations for rare diseases using real world evidence.

PRM32 NON-ALCOHOLIC STEATOHEPATITIS CLINICAL DEVELOPMENT: AN OPPORTUNITY FOR NON-INVASIVE SERUM OR IMAGING BIOMARKERS FROM A COST-EFFICIENCY PERSPECTIVE Amrani W., Rucic S., Liu S., Voody C., Cooreman M.

OBJECTIVES: Non-alcoholic Steatohepatitis (NASH) is the hepatic manifestation of metabolic syndrome and not related to viral infection. We estimated current development costs, spending for Drug X patients is approximately $220 less than Drug Y users over a 6 month period. In the naive matching method, the drug cost of treatment X was $294 lower than treatment Y, although the observed difference was not statistically significant. Using the logit regression algorithm, it was found that the mean cost of Drug X was approximately $368 lower than Drug Y (p<0.028). Lastly, with non-inventive partitioning the treatment cost savings of Drug X was $358 lower than Drug Y (p<0.045). CONCLUSIONS: The use of PSM in studies can help to remove potential confounders and produce unbiased results. Model-based PSM outperforms other methods in terms of estimating sensitivity analysis. The careful selection of a matching algorithm can play a pivotal role in economic investigations for rare diseases using real world evidence.

PRM33 ALCOHOL AND SUBSTANCE USE DISORDER COMORBIDITY MEASURES: WHO IS BEING COUNTED? Montejano L.B.

OBJECTIVES: Patients with comorbid alcohol use disorders (AUD) and substance use disorders (SUD) may be identified in administrative claims data using a range of codes (eg ICD-9 303-305), but it is not clear this yields a homogenous group. The objective of this study was to characterize patients with AUD/SUD to better understand the resulting comorbidity measures. METHODS: Patients with ≥1 claim indicative of AUD/SUD between 2005-2012 were identified in the Truven MarketScan database. Costs for each year were estimated and adjusted using the logit regression algorithm, it was found that the mean cost of Drug X was approximately $368 lower than Drug Y (p<0.028). Lastly, with non-inventive partitioning the treatment cost savings of Drug X was $358 lower than Drug Y (p<0.045). CONCLUSIONS: The use of PSM in studies can help to remove potential confounders and produce unbiased results. Model-based PSM outperforms other methods in terms of estimating sensitivity analysis. The careful selection of a matching algorithm can play a pivotal role in economic investigations for rare diseases using real world evidence.

PRM34 RESEARCH ON METHODS – Databases & Management Methods

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