

estimated. Model variables included insurer's type, age, gender, Charlson comorbidity index, year. Odds ratios (OR) and 95% confidence intervals (CI) were used to investigate the impact of Medicaid expansion on PH trend. The PH was defined as a class of admission believed to be preventable in most cases by standard ambulatory health care before admission. The marker admissions were determined such as appendicitis and gastrointestinal obstruction, remaining relatively constant across populations. **RESULTS:** Among newly enrolled 140,366 Medicaid population, 62.1% were female, mean age was 52 years old. These percentages of female and mean age among 280,301 NHI population were 53.1% and 39 years old, respectively. The biennial ratio of PH relative to marker admission in Medicaid population increased after eligibility expansion, from an average of 6.05 to 9.04 (OR = 1.50). This rise was small compared with the NHI populations, who experienced from 1.96 to 3.22 (OR = 1.64). After adjusting for confounding variables, the OR for after Medicaid expansion among Medicaid population and NHI population were 1.48 (95% CI = 1.29–1.69) and 1.71 (95% CI = 1.53–1.91), respectively. **CONCLUSIONS:** Current findings suggest that the Medicaid PH trend was less likely to rise than NHI PH trend after implementing Medicaid expansion.

#### PODIUM SESSION IV: OUTCOMES RESEARCH ISSUES

ORI

##### EXAMINING ASSOCIATION BETWEEN PATIENT-REPORTED OUTCOMES AND CLINICAL OUTCOMES USING PROBIT REGRESSION ANALYSIS

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**OBJECTIVES:** The purpose of this study is to examine the impact of visual acuity (VA) on bilateral neovascular age-related macular degeneration (nvAMD) patients' general quality of life (QOL). Instead of the traditional correlation/linear regression analysis, a novel approach using PROBIT regression on cumulative QOL rates was employed. **METHODS:** Data from a cross-sectional, multi-country (France, Germany, Spain, UK and Canada) burden of nvAMD was examined (n = 401 nvAMD patients). As part of the telephone interview, patients completed EQ-5D as the assessment of general quality of life (QOL). Associations between VA and EQ-5D were examined using traditional Pearson correlation, analysis of variance (ANOVA) test of EQ-5D score as a function of VA level (normal, mild, moderate, severe, and near blindness), and PROBIT regression. In the PROBIT regression, the decimal VA was ordinalized into categories centered at 0.02, 0.04, 0.06, etc., and cumulative QOL rates were calculated at each of these levels. **RESULTS:** Pearson correlation and one-way analysis of variance tests showed no significant association between VA and EQ-5D. From the PROBIT regression, the inflection points were determined and the mean and standard deviation of the underlying normal distribution were estimated. The inflection points identify the VA levels at which association between QOL and VA may be expected and at what level no association would occur. The mean and SD demonstrate where the relationship was linear. While the Pearson correlation showed a 0.01 correlation coefficient between EQ-5D and VA, PROBIT regression showed a 0.89 correlation coefficient, with the association being linear between VA range of 0.02 and 0.40. **CONCLUSIONS:** The association of VA levels and EQ-5D is affected by many extraneous variables that make it difficult to identify the strength of the association. The use of PROBIT regression gives researchers an important methodological tool to strengthen their understanding of such associations.

#### INCORPORATING DIFFUSION OF NEW MEDICINES IN A BUDGET IMPACT ANALYSIS

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**OBJECTIVES:** When a budget impact analysis is performed for the introduction of a new drug, the diffusion of the drug needs to be forecasted. Such forecast should be as evidence-based as possible if it is to be useful for health care decision makers. We assessed the usefulness of several models for predicting the diffusion of new drugs on the Dutch market. **METHODS:** Several diffusion models were assessed, and the most useful in the context of a new drug entering the market was selected. Next, historical diffusion was analysed based on Farminform and IMS data. This data provides sales (volume) at the level of the active substance for the total Dutch market each month. Data was available from January 1993 until October 2006. We included data on 22 products divided over 6 ATC 2 categories (ATC = Anatomical Therapeutic Chemical). **RESULTS:** We found that the Hahn model is most applicable for new drugs. The Hahn model was capable of describing diffusion retrospectively of the 22 drugs studied. The results provide insight in the diffusion pattern which can be used to forecast diffusion of new interventions. Based on these empirically derived descriptors of diffusion some findings were: The biggest growth (relative to the previous period) of a product is achieved between roughly 12 and 36 months; No products are observed with a market (ATC2) penetration of more than 45%; In less than a fifth of the introductions, a market share of more than 20% at the ATC 2 level is achieved within 60 months; In less than a tenth of the introductions, a market share of more than 35% at the ATC 2 level is achieved within 60 months. **CONCLUSIONS:** The assumptions about market diffusions currently made in budget impact analyses can be greatly improved if formal models are used to predict diffusion.

OR3

#### ADJUSTING ICERS FOR FUTURE UNRELATED MEDICAL COSTS: DEVELOPMENT AND APPLICATION OF A TOOLKIT

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**OBJECTIVES:** Most international pharmacoeconomic guidelines advise not to include future unrelated medical costs in economic evaluations. Recently, arguments in favor of inclusion of such costs are gaining support in health economic literature. However, correct estimations of these costs do not yet exist. This paper describes the methodology with which we developed a toolkit to adjust incremental cost-effectiveness ratios (ICER) for future unrelated medical costs, and presents an application of the toolkit by adjusting the ICER of universal hepatitis B vaccination of newborns. **METHODS:** We defined three variables that predict individual health care expenditure best: age, sex and time to death. However, the relation between health care expenditure and these three variables depends on the lethality of diseases and on health care setting. For the development of the toolkit, different cross-sectional and longitudinal databases were used. First, the 2003 Dutch Cost of Illness study has been employed. Furthermore, insurance claims data and longitudinal record linkage data were used. This allowed us to estimate how the relation between time to death and health care costs is altered if costs of related diseases are excluded. To apply the toolkit, survivor curves for the intervention and control groups are needed. For hepatitis B vaccination of newborns, future unrelated medical costs (i.e. all costs not related to hepatitis B infection and