(friction cost method) were considered at 1998 price levels. Future costs were always discounted at 4% while future effects (QALYs and LYG) were only discounted for computing cost-effectiveness ratios. The study time horizon was 77 years. RESULTS: The vaccination program would prevent 228 deaths, 92 severe sequelae (amputations and neurological sequelae) and render 11,330 life years and 13,470 QALYs (no discounting). It would cost €75.6 million and avert €27.5 million direct costs and €0.4 million indirect costs. The cost-effectiveness ratio is €11,830/QALY or €14,070/LYG, when indirect costs are excluded. Considering indirect costs leads to slightly better ratios: €11,730/QALY or €13,950/LYG. These results are sensitive to the incidence of meningococcal C infections, the discount rate of health effects and the vaccine’s protection duration. CONCLUSIONS: The vaccination program renders a significant health gain and is cost-effective as its cost-effectiveness ratios lie significantly below the Dutch cut-off point for vaccines. These results played an important role in the Dutch government’s decision to implement this vaccination program in June 2002.

**MIGRAINE/COPD STUDIES**

**MC1**

**DEVELOPMENT OF A FUNCTIONAL ASSESSMENT IN MIGRAINEURS MEASUREMENT TOOL BASED ON THE WHO’S ICIDH2 CLASSIFICATION**

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OBJECTIVES: As new medications for migraine are introduced, it is imperative that valid tools exist to measure their impact on patient reported outcomes. The objective of this project was to develop a Migraine Impact on Functioning (MIF) Tool based on the “body and mind functioning (BMF)” and “activity and participation (AP)” framework presented in the ICIDH2. METHODS: The tool was developed using a multi-step process first proposed by Guyatt. 1) Researchers generated an extensive list of potential items based on focus groups in Germany and the US and on review of literature. An item reduction survey was designed including 71 BMF items and 50 AP items. 2) The item reduction survey assessing the frequency and importance of each item was administered to samples of migraineurs in Germany (n = 153) and the US (n = 148). 3) Item reduction was completed by selecting items with high frequency-weighted importance and by further analyzing these items using Principal Component analysis. Differences between items selected in the two populations were compared to determine if one tool could meet the needs of both. RESULTS: While results from the German and US populations identified BMF items as important, principal components analysis found similarity in the nature of the factors identified. In the US, a four-factor, 13-item model was identified, including: “energy”, “intolerance to stimulus”, “emotional impact”, and “attention/psychomotor issues”. In Germany, a 3-factor, 12-item model was found including “attention/cognition”, “intolerance to stimulus”, and “emotional issues”. CONCLUSION: Given the notable overlap in the factors identified in the two nations, we believe that the difference in individual item selection is a product of small translational or interpretational difference rather than an

**IN6**

**PRIMARY CARE PRESCRIBING AND ANTIBIOTIC RESISTANCE: WHAT IS THE ADDED VALUE OF PERSON SPECIFIC DATA ABOUT ANTIBIOTIC PRESCRIBING COMPARED WITH EXISTING, PRACTICE LEVEL INFORMATION?**

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OBJECTIVE: Antibiotic resistance is a major public health problem. In the UK prescribing data are currently routinely available at the level of a primary care practice. There are both financial and data protection barriers to analysis of data about individuals. The aim of this study was to test the null hypothesis that, in comparison with practice level data, there is no added value to patient level data for measurement of the association between antibiotic prescribing and resistance. METHODS: We performed a cross sectional study that linked data about resistance to trimethoprim in bacteria isolated from urine samples to prescribing of trimethoprim and other antibiotics. We used a random coefficient model with random and fixed effects, effectively a multi-level model with two levels: primary care practice and individual patient. RESULTS: The study included 31 practices with a total study population of approximately 179,000 people. The population of a single practice ranged from 1386 to 10,479. There was considerable variation between practices in both the prevalence of trimethoprim resistance (from 15% to 50% of bacteria isolated) and trimethoprim prescribing (from 71 prescriptions to 312 prescriptions per 100 people in the practice). Nonetheless, in a multivariate analysis there was no relationship between variation in prescribing and resistance (p = 0.2717). In contrast, at the patient level there was a highly significant relationship between trimethoprim resistance and prior exposure to trimethoprim (p < 0.0001) and antibiotics other than trimethoprim (p = 0.0128). CONCLUSIONS: Analysis of practice level data obscures important relationships between antibiotic prescribing and resistance. This is an example of the ecological fallacy, which assumes that differences in exposure at the population level indicate similar differences in exposure to the individuals within the population. Our results are an important demonstration of the added value of individual patient data for research on the outcomes of prescribing.