assumption of impractical unlimited vaccine supply, we developed a generalized methodology based on dynamic stochastic model using the flow of limited vaccine supply to the individuals between two mutually exclusive subgroups (e.g. different age groups or different risk groups) in order to examine the long term impact of different vaccination strategies on overall health outcomes from the whole population. In this model, both age dependency and seasonality in FOI were explicitly considered. This study aims to answer two key questions: 1) what is the best vaccination strategy to obtain maximal quantitative post-vaccination health benefits among two subpopulations? and 2) how different structures of age-specific FOIs influence our selection on the vaccinated population? Most of the time, one needs to have various parameter values in the models targeting spreading of infectious diseases in populations which cannot be estimated accurately. Therefore, a series of scenarios with different FOIs, demographic structures, vaccine efficacy and other model parameters were used in our simulation studies using this stochastic age-structured framework. In summary, our study dynamically acquired both important biomedical and mathematical implications by successfully analyzing the current mass vaccination strategy, evaluating the impact of different prevention and intervention options, and served as an accurate basis for outcome research that may facilitate further cost-effectiveness analysis.

CONCEPTUAL PAPERS & RESEARCH ON METHODS – Patient-Reported Outcomes Studies

PMCG4

SENSITIVITY OF EQ-5D, EQ-SD AND SF-6D TO DIABETES COMPLICATIONS: THE CASE OF CORONARY HEART DISEASE
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OBJECTIVES: Diabetes Mellitus (DM) patients typically suffer from comorbid conditions. The aim of the present study was to identify specific QoL measurement modes to complete the assessments using EQ-5D, EQ-SD and SF-6D utilities than DM patients without: 15D, 0.740 vs. 0.841; EQ-5D, 0.627 vs. 0.756; SF-6D, 0.708 vs. 0.775. The mean utility of EQ-5D was lower for DM patients with CHD (N = 113, 61.7% female, mean age of 71.0 years) compared to CHD patients without DM (N = 110, 62.3% female, mean age 65.3) were surveyed with the 15D, EQ-5D, SF-36 and the Diabetes Treatment Satisfaction Questionnaire (DTSQ). Independent variables including gender, age, years with diabetes, BMI, HbA1c, treatment satisfaction, and existence of complications associated with diabetes (e.g. hyperglycemia, COPD, arthropathy, vascular disease, diabetic foot, retinopathy, neuropathy and nephropathy) were introduced in univariate regression models to identify significant predictors of 15D, EQ-SD and SF-6D utilities. RESULTS: DM patients with CHD (N = 107, 61.7% female, mean age 71.0) reported lower utilities than DM patients without: 15D, 0.740 vs. 0.841; EQ-SD, 0.627 vs. 0.756; SF-6D, 0.708 vs. 0.775, (P < 0.001 throughout). The regression models explained 51.1%, 39.6% and 28.0% of 15D, EQ-SD and SF-6D variance respectively. Five common significant predictors (gender, age, treatment satisfaction, arthropathy and diabetic foot), and five others significant in at least one model were identified. Values were controlled for with ANCOVA. The respective results (CHD, yes vs. no) were: 15D, 0.787 vs. 0.817, P < 0.05; EQ-SD, 0.702 vs. 0.718, P = 0.389; SF-6D, 0.737 vs. 0.761, P = 0.084. CONCLUSIONS: After correcting for the confounding effect of comorbid conditions, only the 15D produced a statistically significant HRQoL differences between DM patients with and without CHD, most likely due to its richer descriptive system. This increased sensitivity is perhaps evidence in favour of the 15D being more sensitive to the common complication of diabetes, i.e. coronary heart disease (CHD).

PMCG5

MEASUREMENT OF OUTPATIENT REHABILITATION OUTCOMES WITH EQ-SD
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OBJECTIVES: Experiences with generic health-related quality of life (HRQoL) instruments in German rehabilitation facilities are very limited. The goal of this study was to assess the applicability of EQ-SD as part of the quality management system in a sample of neurological and orthopaedic patients. METHODS: The assessment was implemented as part of the regular optional patient satisfaction evaluation at the outpatient rehabilitation facility in Bielefeld (Germany). Neurological and orthopaedic patients were surveyed by questionnaire at the beginning (T1) and the end (T2) of rehabilitation treatment. The survey period was September to December of 2008. HRQoL was determined by the German version of EQ-SD self-report questionnaire (European tariff) and EQ-VAS (visual analogue scale). Wilcoxon signed rank test was used for comparison of T1 and T2. RESULTS: In total, 99 patient cases (mean age of 52 years, 58% orthopaedic and 32% female) were included in the study. The mean of EQ-SD index score improved from 0.66 (SD = 0.18) to 0.74 (SD = 0.18) at the end of the rehabilitation (statistically significant with p < 0.001). Mean VAS utility value improved significantly (p < 0.001) from 0.57 (SD = 0.21) at T1 to 0.69 (SD = 0.19) at T2. The percentage of patients with any problems decreased for all five dimensions (mobility: 49% to 32%; self-care: 21% to 12%; usual activities: 66% to 48%; pain/discomfort: 82% to 63%; anxiety/depression: 29% to 24%). CONCLUSIONS: EQ-SD showed good sensitivity and practicability for generic measurement of rehabilitation outcomes and could supplement existing compulsory quality management systems. A comparable and widely accepted assessment of outcome quality also would be of interest for payers (statutory health insurance and pension insurance), owners and patients.

PMCS1

PATIENT COMPLETION OF EPROS, TO PHONE OR TO WEB?
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OBJECTIVES: To identify trends in patient completion patterns between two modes of administration for electronic patient reported outcome measurement systems (EPROS).

METHODS: Retrospective review of eleven clinical research projects in which the patients were offered the option of completing daily questionnaires with one of two modes: an interactive voice response (IVR) system or a web-based response (WIR) system. Both systems were available to the patient at every assessment, independent of the mode used in prior assessment. RESULTS: In the 11 studies, data were available for 29,078 patients from 15 countries. On average patients completed 42 (min, max 14/2) assessments during their study participation. Across the studies 2.6% of patients completed all assessments using only IVR and 64.5% of patients completed all assessments using only WIR. Of those patients using both modes (N = 8408), only 12.3% completed an IVR questionnaire more often than they completed an IVR questionnaire and fewer than 1% completed an equal number of IVR and WIR questionnaires. Younger patients (<25 years) completed more IVR (35.0% of their assessments) compared to older patients. Patients between 46-65 years completed the fewest questionnaires using WIR (6.1% of their assessments). Patients in Serbia (N = 37) completed the most questionnaire using WIR (46.6% of their assessments). Patients in Czech Republic (N = 28), Finland (N = 7491), Italy (N = 32), and New Zealand (N = 7) completed the fewest questionnaires using WIR (<5.0% of their assessments). CONCLUSIONS: Most patients completed their assessments using the IVR. Despite having the option, most patients did not alternate between modes. Younger patients were more likely to complete the assessments using IVR. Further work is needed to evaluate whether the completion patterns are due to patient preference or driven by access to the chosen mode, particularly in some geographic regions.