level dynamic Bayesian inhomogeneous Markov model with quarterly time-step was then developed to jointly describe prescriptions and outcomes over time in relation with adherence proxy using medication possession ratio, adjusting for patients demographics and seasonality. Internal and external validation was performed. **RESULTS:** . Such Bayesian model could be fitted to the available data with different parameters informed by one or another data source. Treatment switches were associated with severity at the previous quarter while adherence was significantly improved when patients are switched and when they are less controlled in the previous quarter. Risk of exacerbations was depending on the control score and season at the present quarter and on the risk of exacerbation at the previous quarter. Control was significantly improved by a better adherence and to a lesser extent by a treatment escalation and improved severity at the previous quarter. **CONCLUSIONS:** This Bayesian dynamic model allowed quantifying the most important interactions between drug uses and effects on control and exacerbations over time, hence providing a powerful tool for real-world outcomes predictions in asthma patients.

PRM113
UNCERTAINTY QUANTIFICATION OF LARGE-SCALE HEALTH ECONOMIC SIMULATION MODELS
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OBJECTIVES: Large scale simulation models (e.g. Archimedes Model, MISCAN) are increasingly used to predict cost-effectiveness of medical interventions and to drive reimbursement decisions. These models are complex and involve hundreds of parameters and inputs. Quantification of parameter uncertainties using traditional sampling-based approaches (e.g., Monte Carlo sampling and its variants) can be prohibitively expensive for these models. **METHODS:** We overcome the limitations of traditional probabilistic sensitivity analysis through a 4-step process. First, we conduct a thorough survey of all parameters and their confidence intervals. Second, we use local sensitivity analysis to evaluate the effects of each parameter on the outcome of interest. Third, based on results from single-parameter sensitivity analysis, we rank and identify a group of parameters that have the largest effects on the outcome. We then employ response surface (RS) approximation methods to create a mathematical model of the model predictions for these parameters. We use Latin Hypercube sampling (LHS) to generate data points and multivariate adaptive regression splines (MARS) to build the response surface approximations. Fourth, we sample parameters from their joint distributions, and then use the constructed response surface to calculate the probability distribution of the predicted outcomes. **RESULTS:** We apply the above methodology to quantify uncertainties in predictions of the Archimedes Model for effectiveness of colorectal cancer (CRC) screening by colonoscopy (COLO) and fecal immunological test (FIT). We started out with 200 parameters and identified 20 parameters that have significant influences on predicted effectiveness of CRC screening. We conclude that there is a 89% chance that COLO will save more life years FIT, after accounting for parameter uncertainties. Similarly we estimate that there is a 61% probability that FIT is more cost effective than colonoscopy. **CONCLUSIONS:** We have developed a robust and efficient methodology for quantifying parameter uncertainties of large-scale simulation models used for cost-effectiveness analysis.

RESEARCH ON METHODS – Patient-Reported Outcomes Studies

PRM114
CATALOGUE OF EQ-5D SCORES FOR CHRONIC CONDITIONS IN DENMARK
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OBJECTIVES: EQ-5D catalogues have been developed and tested in US and UK. The current study aims to develop a Danish preference-based EQ-5D 3L scores catalogue for around a hundred of the most common monitored chronic conditions. The development is based on experiences from the US and UK, but adding new factors of importance such as health habits, BMI, social networks and stress. **METHODS:** The marginal disutility estimates will be calculated using CLAD and OLS regression on a single source population from a random sample: the National Danish Health Survey Data from 2010 which is a self-administrated survey with approx. 38.000 respondents age ≥16. The survey data is combined with data from national registers containing individual health data e.g. diagnosed chronic conditions during hospitalization, medication, use of hospitals as well as socio-economic data. The catalogue differs from UK and US catalogues' by adding new health habits information and by using ICD-10 classifications from registers as well as it is based on Danish EQ-5D tariffs. The marginal disutility is calculated for each chronic condition controlling for age, gender, ethnicity, income, education and comorbidity etc. **RESULTS:** Marginal disutility estimates (EQ-5D) for around a hundred ICD-10 chronic conditions are presented and compared. It is expected that this new knowledge will contribute and qualify prioritization debate, when results are published and combined with knowledge of for example factors of importance and burden of disease in costs. **CONCLUSIONS:** The catalogue will provide scientist with an "off-the-shelf" tool for use in health economic evaluations. Marginal disutilities estimates can be used to estimate QALY's in CEA for a wide variety of conditions in Denmark.

PRM115
PATIENT PREFERENCES ON TREATMENTS FOR ERECTIL DYSFUNCTION DEFINED BY MEANS OF DIFFERENT ATTRIBUTE GROUPS: THE METHOD OF ADMINISTRATION IS THE MOST VALUED ATTRIBUTE AND THE ORODISPERSIBLE TABLET IS THE MOST PREFERRED LEVEL
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OBJECTIVES: Phosphodiesterase type 5 inhibitors (PDE5i) for the treatment of erectile dysfunction (ED) have similar pharmacologic profile. Patient preferences may

influence the outcome of treatment. The objective was to assess patient preferences on treatments for ED by applying Conjoint Analysis. **METHODS:** Seven attributes were selected through a literature review and a consultation with 25 patients treated of ED and 5 experts: effectiveness (E), rapidity of onset (R), duration of effect (D), adverse events (AE), methods of administration (MA), price (P) and interaction with alcohol and food (I). 3 groups of scenarios were selected using "Orthogonal Design": Phase 1, 9 scenarios with 4 attributes (R, D, MA, I); Phase 2, 16 scenarios with the 7 attributes; Phase 3, 9 scenarios with 4 attributes (E, MA, P, I). It was applied the "Order of simulated preference" method by using cards with symbols and text. Interactions of age, comorbidity and frequency of sexual intercourses with preferences were studied. **RESULTS:** The set of 16 scenarios was very difficult for patients. A total of 314 patients participated in Phase 1, 99 in Phase 2 and 178 in Phase 3. Order of preferred attributes: Phase 1: MA (57.99%), D (16.68%), I (14.57%) y R (10.76%); Phase 2: MA (40.53%),E (21.98%), R (8.98%), P (8.11%), D (7.46%), AE (6.67%),I (6.25%); Phase 3: MA (53.9%), I (22.45%), P (12.50%), E (11.14%). The preferred MA in the 3 phases was the orodispersible tablet with reference to pill and injectable. No statistically significant associations were found with age, comorbidity and frequency of sexual intercourse. **CONCLUSIONS:** . Patients gave more importance to the attribute "method of administration" in any of the three phases performed. The preferred MA was orodispersible tablet over pill and injectable.

PRM116
CHOOSING HEALTH STATES FOR ELICITATION OF POPULATION PREFERENCES FOR THE EQ-5D
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OBJECTIVES: The EQ-5D-3L descriptive classification defines a total of 243 health states which presents a problem when seeking to establish social preferences. As it would be challenging to value all 243 health states, a subset is chosen but the basis for this selection varies across national valuation studies. The aim of this study was to choose health states based on the most commonly found health states experienced by the Irish population. **METHODS:** EQ-5D data from four different datasets were combined to determine what health states are prevalent in Ireland. Data from a general population study of health (SLAN), an over 70 population cohort, a rheumatoid arthritis and psoriatic arthritis cohort. The most commonly experienced health states were determined and these were arranged on a 5 dimensional lattice. Health states were chosen using the Manhattan distance metric. **RESULTS:** A total of 12,520 ratings of self-reported EQ-5D health states were included. Fifty two per cent of the cohort had perfect health (11111). Ninety five per cent of states include at least one '1' and no '3'. 126/243 health states were not experienced in these datasets. The Manhattan distance between health states was measured. The imposition of such a metric facilitated the identification of clusters of states and associated centroids. Distance sampling was used to identify states within the clusters. A simple random sampling strategy was also used across the lattice to ensure coverage of health states outside of the cluster **CONCLUSIONS:** Previous population preference elicitation studies have used theoretical approaches to health states elicitation, which could lead to health states being directly valued which are rarely experienced in the population. The approach presented here uses the information already known about the population, to inform choice of health states for population valuation of health using the EQ-5D.

PRM117
HEALTH UTILITIES INDEX (HUI®): POPULATION REFERENCE STATISTICS
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OBJECTIVES: To describe HUI reference statistics available from clinical and general population health studies. **METHODS:** Reviews of published literature, unpublished reports and corporate databases were used to identify summary statistics or data available for calculation of summary statistics. Published examples illustrate the use of HUI reference statistics for health-related quality of life (HRQL) scores to assess the health of patients relative to general populations and of general populations between countries. **RESULTS:** Summary statistics of HRQL scores were compiled from published clinical studies (n=5), population health surveys (n=6), or provided by investigators of individual studies (n=3). Statistics from four sets of published results were used to identify health problems among patients treated for acute lymphoblastic leukemia in childhood in a recently published study. Results from the Joint Canada/US Survey of Health (JCUSH), conducted at the same time in both countries using the same survey methodology are presented here in brief. The mean HUI3 score in Canada (0.88) was slightly higher than in the US (0.87) (p<0.05). However, the mean HUI3 score for those with less than a high school education in Canada (0.81) was much higher than the mean for the same group in the US (0.74) (p<0.05). HUI Mark2 (HUI2) and HUI Mark3 (HUI3) summary statistics by country, gender, race and age groups are presented in 43 tables on the HUI web-site (www.healthutilities.com). **CONCLUSIONS:** The results highlight the usefulness of continuous preference-based measures of population health such as the HUI3. Population reference data enable international comparisons of population health and provide normative data with which to interpret results from clinical studies. The publicly available summary statistics of interval-scale preference-based measures for the HRQL of reference populations provide valid, reliable and cost-effective results for clinical and general population studies.

PRM118
PATIENT PREFERENCES IN THE CHOICE OF DISEASE MODIFYING DRUGS FOR MULTIPLE SCLEROSIS
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