sions have been reached. This study sought to assess the relationship between Body Mass Index (BMI) and health care costs using 2006-2010 data from the Medical Expenditure Panel Survey (MEPS). **METHODS:** Eligible patients were ≥18 years, with a diabetes diagnosis (CCC-250) and on at least one oral antidiabetic medication. Primary outcomes were: 1) *diabetes-related* direct medical costs, 2) *all-cause* direct medical costs, and 3) indirect costs. Costs were inflated to 2010 US dollars using the medical consumer price index. The main independent variable was BMI, categorized as normal weight BMI: 18.0-24.9; overweight BMI: 25.0-29.9; obese BMI: 30.0-40.0; and morbidly obese BMI: >40.0 kg/m^2. Covariates included demographic and clinical variables. Generalized linear models with gamma distribution and log link function were conducted. **RESULTS:** A final unweighted sample size of 7,003 patients was obtained (14.6 million weighted), with a mean age (±SE) = 61.2 (±0.2) years, mean BMI (±SE) = 32.2 (±0.1), and 50.4% were males. After controlling for covariates, *diabetes-related* direct medical costs of normal-weight patients ($1,622) were lower than their overweight ($1,955; p=0.031), obese ($2,259; p=0.001) and morbidly obese ($2,636; p=0.003) peers. But direct *all-cause* medical costs of overweight patients were less ($9,715; p=0.021) compared to normal weight ($11,623) patients. *All-cause* direct costs for obese ($11,419) and morbidly obese ($13,043) patients were not statistically different than costs for normal weight peers. Indirect costs (estimated as lost productivity) were similar between all 4 cohorts ($532-$535). **CONCLUSIONS:** Being overweight (BMI = 25.0 to 29.9 kg/m^2) was associated with higher *diabetes-related* direct medical costs, but lower *all-cause* direct medical costs compared to their normal weight peers.

PRM23

THE LONG-TERM ECONOMIC VALUE OF A NEW-BORN CHILD COMPARISON OF THE HUMAN CAPITAL AND THE LIFETIME INVESTMENT APPROACHES

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OBJECTIVES: The aim of the study is to assess the long-term economic value of one additional child born in Hungary, Italy, Spain, Sweden and the UK. **METHODS:** Two different methodologies are applied. The Human Capital Approach representing the perspective of the society is used to estimate the potential loss in production for every unborn child. It is calculated by summing up the discounted value of all expected future gross earnings of the individual, including an imputed value for household production. The Lifetime Investment Approach representing the point of view of the government is used to calculate the impact of an additional child on the fiscal balance. Expected revenues from taxes and social contributions and expected public expenditures (e.g. education, health, pension, etc.) for the lifetime of average person are calculated. The net balance is discounted to obtain the present value. Input data is obtained from the statistical databases of the OECD and EUROSTAT and from own calculations. Results are presented as a percentage of GDP per capita for 2012. **RESULTS:** Preliminary results indicate that there is great heterogeneity between countries in the values of one additional child born. The present value of future earnings according to the Human Capital Approach indicates that a child will produce 11 to 21 times the 2012 GDP per capita during his lifetime. According to the Lifetime Investment Approach, an average child will contribute 3.4 and 6.0 times the GDP per capita of government revenues by the end of his lifetime. **CONCLUSIONS:** The two methods used present gains (or losses) of an additional child from the perspective of the society as well as from the point of view of the sustainability of public finances. Results vary by country. Therefore, it is essential that such calculations are performed on a country-by-country bases.

PRM24

HOW TO DEAL WITH MISSING LONGITUDINAL DATA IN COST OF ILLNESS MODELS IN ALZHEIMER'S DISEASE – SUGGESTIONS FROM THE GERAS STUDY RESULTS

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OBJECTIVES: To use baseline results from a prospective observational study in Alzheimer's disease (AD) to evaluate methods for dealing with missing longitudinal AD cost data. **METHODS:** GERAS is an 18-month observational study of costs associated with AD. Total societal costs included patient health care costs (including hospitalizations, outpatient visits, and medication) and social care costs (including home-care and day-center sessions), and caregiver informal care costs (from time spend on informal care). Missing longitudinal cost data due to patient death/institutionalization was classified as not missing at random (NMAR). Cost data missing for other reasons was classified as missing at random (MAR) or missing completely at random (MCAR). To assess the impact of imputing missing longitudinal cost data, patterns of missing data during follow-up were simulated based on baseline GERAS data to generate 10%, 20%, 30% and 40% missing data for MCAR, MAR and NMAR classifications. Naïve methods (including complete case analysis, mean imputation and regression models), multiple imputation (MI) and a fixed cost were applied to each dataset and %bias assessed using (estimated-actual)/actual cost*100. **RESULTS:** Total baseline societal costs were available for 1488 (99.4%) of enrolled patients, with a mean monthly cost of €2101(95% CI: €1980-€2222). For MCAR datasets, naïve methods performed as well as MI (20% missing data: 0.6-10.9% bias naïve methods vs 0.2-6.1% MI). For MAR data, MI methods performed better (-3.2% to -14.3% bias) than naïve methods (6.6%-18.0% bias). All approaches were consistently poor with NMAR data (bias range -31.4% to -38.6%); the best performing approach was to impute a fixed value (monthly cost of institutionalisation) with -22.6% bias. For all approaches %bias increased with missing data volume. **CONCLUSIONS:** Methods used to impute missing cost data in AD should be tailored depending on the type of missing data, using sensitivity analysis to assess the impact of any assumptions.

PRM25

IN SEARCH OF LOST COSTS: THE IMPLICATIONS FOR COST-EFFECTIVENESS RESEARCH WHEN THE PRICE ISN'T RIGHT

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OBJECTIVES: Analyses of drug cost-effectiveness have traditionally been based on two key components: effectiveness measured by clinical endpoints reported in product label or biomedical literature, and cost obtained from available pricing sources. While the former is a relatively well-defined value derived from pivotal trials and subsequent studies, the latter has often not been well-described or rigorously assessed, and may be based upon manufacturer-reported pricing information that has been shown to be inaccurate and unreliable. This study examines existing benchmarks against newly available sources of pharmaceutical pricing, describes their interrelationships and assesses their stability over time. **METHODS:** Using publicly available cost data for wholesale acquisition cost (WAC), average manufacturer price (AMP), national average drug acquisition cost (NADAC), AMP-based federal upper limit (FUL), and a composite of six states' average acquisition cost (AAC), mean, median, and standard deviation values were calculated for a broad range of pharmaceuticals and trade classes (brand vs. generic) and analyzed temporally for trend and consistency patterns. **RESULTS:** Available pricing data reflects an extremely high degree of variability and inconsistent relationships, both between equivalent products and from one price type to another. Generic drug prices demonstrated the greatest irregularity, and although the ratio of NADAC or AMP to WAC for branded drugs showed correlations overall, for given products those relationships could be substantially at variance. **CONCLUSIONS:** Continuing review and analysis of all available price types is needed to identify a reliable drug pricing benchmark that permits reviewers and clinicians to determine the optimal course of treatment. Since reported ratios may shift over time, future reports of cost-effectiveness must explicitly identify the cost basis employed and its reliability for the products at issue.

PRM26

A REVIEW OF NICE TECHNOLOGY APPRAISALS USING SINGLE-ARM TRIALS

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OBJECTIVES: Head-to-head randomized controlled trials (RCTs) remain the gold standard for establishing relative treatment efficacy and for use in cost-effectiveness (CE) models. However, in some cases, such as rare diseases, only single-arm trials may be available. We identified health technology appraisals (HTAs) published by the National Institute for Health and Care Excellence (NICE) that included evidence from single-arm trials and reviewed the use of the single-arm trial data in accompanying CE models. **METHODS:** We searched the NICE website for published technology appraisals using the term "single-arm". We reviewed HTAs in which single-arm trials were used and recorded the date of the appraisal, disease area, use of the single-arm trial data, the NICE recommendation, and NICE's comments on the use of the single-arm trials. **RESULTS:** Twenty-two HTAs included a reference to one or more single-arm trials. Fourteen provided the single-arm trial data only as supporting evidence to at least one RCT. Of the eight that used single-arm trial data, all also used the data in a model; four used the data as the primary evidence of efficacy, two used the data to extend an RCT, and two used the data for other inputs. Only one of the four using the data for evidence of efficacy resulted in a positive recommendation from NICE. In this case, evidence was from seven single arm trials; two manufacturer models and the assessment group model all demonstrated the intervention to be dominant over standard care, and several other factors may have contributed to a positive recommendation. In the three HTAs resulting in a negative recommendation, NICE expressed concerns over the efficacy data. **CONCLUSIONS:** Although RCTs are preferred for relative efficacy data for use in cost-effectiveness analyses in NICE HTAs, there is one case of a positive NICE recommendation despite efficacy evidence being based on single-arm trials.

PRM27

QUANTIFYING THE EFFICIENCY OF HEALTH CARE INTERVENTIONS: A REVIEW OF TIME AND MOTION STUDIES PRESENTED AT ISPOR CONFERENCES BETWEEN 2008 AND 2013

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OBJECTIVES: Efficiency may be crucial to a health technology's value proposition. Measuring time endpoints prospectively is subject to variability and bias that makes Time and Motion (T&M) methodology complex. The aim was to investigate key design characteristics of T&M studies recently presented at ISPOR conferences. **METHODS:** A search was performed in ScienceDirect, using "time and motion" as key term, restricted to 'Value in Health' journal for the years 2008-2013 to identify all ISPOR conference presentations during that period. Presentations were excluded based on the following criteria: (1) not a T&M study; (2) not presenting T&M results. **RESULTS:** Of 116 abstracts, 29 complied with inclusion criteria; 8 presentations could not be obtained; 7 were later excluded; 14 were retained for detailed assessment: 11 were observational studies, 2 reported survey data, and 1 was a simulation study. Distribution of interventions being studied was: drug (43%), medical supply (29%), device (14%), and procedure (14%). 64% were conducted in Europe and 43% were multi-country. Primary objective of 13 studies was measuring process time (one only focused on cost); 57% also reported cost results. 13 studies measured time for tasks composing a process in a hospital setting with number of tasks ranging from 2 to 8; one study measured HCP workload. 85% investigated two processes (15% 3-4), but none were comparative studies powered to test a hypotheses of time differences between groups. 43% reported inferential statistics (e.g. covariance analyses, 95% CIs). One study applied a multilevel model to test centre clustering. **CONCLUSIONS:** This T&M study review reveals a clear choice for descriptive non-hypotheses testing designs; some employ inferential statistics. In multi-centre studies, multilevel models to account for "centre clustering" are scarce.