0.05) on the SF-12. Properly monitored patients spent significantly more on total health care services ($5243), outpatient visits ($1023), and medications ($1204), respectively (all P-values<0.05). CONCLUSIONS: In the US, nearly 40% patients with diabetes do not receive the proper diabetes monitoring controlling for race and socioeconomic disparities. Anti-diabetic/insulin use, mental/cognitive status, physical health status, and health care expenditure may also interact with performing monitoring. Barriers and cost-benefit for long-term monitoring should be studied.

IMPROVING PATIENT CARE: RESULTS FROM THE TEXAS NEWBORN SCREENING PERFORMANCE MEASURES PROJECT

Twna S1, Tankley S2, Williams D3, Douglas M4

Health Partners, Bloomington, MN USA; Texas Department of State Health Services, Austin, TX, USA

BACKGROUND: Advances in screening technology have led to rapid expansion of newborn screening as a public health initiative in the United States. Due to variation across states in program implementation, there is a lack of standardization and accessibility, which can affect quality of care. Texas currently screens for 28 disorders.

OBJECTIVES: The Texas Newborn Screening Performance Measures Project was initiated with the objective of developing evidence-based performance measures to improve quality, accountability and uniformity in the care. METHODS: A three step approach was used for identification and development of key measures for seven most critical newborn screening disorders. Evidence-based clinical practice guidelines and human resources need, overall cost, and time constraints. RESULTS: A total of 50 performance measures were supported by scientific evidence. Impact and feasibility assessments led to the approval of 33/50 measures. “Time to initiate treatment” received the highest score on potential impact on patient outcomes (mean impact score 86.67/100, SD 1.5). Other measures with potentially high impact (score >80/100) were: compliance with oral prophylactic medication and age at first Pneumovax® vaccination in sickle cell disease; screening of at-risk family members in fatty acid disorders; frequency of growth assessments in congenital adrenal hyperplasia and phenylalanine levels in phenylketonuria. “Time to treatment” for individual disorders was also ranked very high on feasibility (mean feasibility score 88.67/100, SD 3.88). CONCLUSIONS: This is one of the first efforts to identify and develop evidence-based performance measures in newborn screening and can pave the way for system wide changes and development of national guidelines.

TREATMENT PATTERNS AND ACHIEVEMENT OF THERAPEUTIC GOALS IN A COHORT OF TYPE 2 DIABETES MELLITUS PATIENTS TREATED IN THE BRAZILIAN PRIVATE HEALTH CARE SYSTEM (PHCS): INITIAL REPORTS OF DIAPS 79 STUDY

Levin R1, Papademetriou E2, Aubert RE2

Medco Health Solutions, Franklin Lakes, NJ, USA

OBJECTIVES: Using a large, US administrative pharmacy claims database, calculate the reliability of days covered (PDC) actual days supply coverage, and correlate estimates of PDC (ePDC) using days supply derived from drug-specific Defined Daily Dose (DDD) criteria. METHODS: Continuously eligible patients filling non-insulin anti-diabetic medication were targeted from a large sample of pharmacy claims during 2008 and 2009. Medications were grouped into ATC diabetes drug classes. Proportion of days covered (PDC) was calculated as the number of days a patient had medication in their possession divided by the number of days in the period. PDC was first calculated using actual days supply, then ePDC was calculated using an estimated days supply from DDD, strength, and pill quantity. The percent of patients adherent to therapy was defined by a PDC > 0.80. The reliability of each method was assessed by Pearson correlation coefficients and agreement above chance was assessed using Kappa statistics. RESULTS: Adherence was calculated for 163,750 patients taking non-insulin antidiabetics. Overall, the PDC and ePDC were highly and significantly correlated (r = 0.73; P < 0.0001). The percent adherent was 48.8% (PDC) and 34.4% (ePDC), (Kappa = 0.50; P < 0.0001). At the medication class level, differences in PDC and ePDC ranged from 0.01 to 0.35, with correlation coefficients ranging from 0.40 to 0.74. Differences in the percent adherent metric ranged from -2.3 to 23.2, and kappa values from 0.22 to 0.89. CONCLUSIONS: Applying DDD estimates for the purposes of diabetes adherence estimation when lacking days supply values may provide reasonable estimates of adherence based on results presented here. At the medication class level there is greater variability in the reliability measures. Including claims from the US only is a limitation of this analysis, as local treatment patterns may vary, and DDD values were not available for all U.S. medications.

DIABETES/ENDOCRINE DISORDERS – Conceptual Papers & Research on Methods

CLINICAL AND ECONOMIC CONSEQUENCES OF THE PHARMACOLOGICAL HYPOGLYCEMIC TREATMENT OF TYPE 2 DIABETES IN CROATIA

Sarić T1, Benkovic V2, Poljančin T2, Sekurina N2

Pomerani sazivavanje d.o.o., Zagreb, Croatia; Croatian Society for Pharmacoeconomics, Zagreb, Croatia; Vuk-Vrhovac University Clinic, Zagreb, Croatia

OBJECTIVES: Diabetes mellitus type 2 (T2DM) is a chronically progressive disease and the treatment must be selected according to the pathophysiological phase of the disease. In the time the treatment is begun. The Croatian public diabetology sector takes care of approximately 150,000 adults treated with oral hypoglycemic agents (OHA) alone or in combination with insulin. Our objective was assessment of the clinical and economic consequences of OHA treatment in T2DM from a Croatian health care system perspective. METHODS: The target population defined for the study was diabetic patients treated with OHA alone. Medication consumption was quantified by using Pharma and CroDiab data, a clinical expert panel provided resource-use information not available in published literature or health care databases. RESULTS: Current consumption data is showing that 62.8% patients are using OHA as monotherapy. Within this group, majority is using either biguanides or sulphonyl- ureas. Patients treated with sulphonylureas are represented with almost the same percentage as those treated with biguanides (25% vs. 29%). Combination of two OHA is used in 34.2% while 3% of patients are treated by triple therapy. The most often mentioned drug in dual therapy is combination of biguanides and sulphonylureas while biguanides, sulphonylureas and thiazolidinediones in combination is the most favour- able treatment option in triple therapy. Biguanides are used as a one of OHA in 61% of patients. CONCLUSIONS: Considering current clinical guidelines, lifetime benefits of biguanides and facts that they are low-cost agent, relatively small proportion of T2DM patients are treated with this agent in Croatia. Findings of this investigation revealed real life pattern of T2DM treatment, which enables directing in better treatment and more cost-effective management in Croatia.

The RELIABILITY OF PROPORTION OF DAYS COVERED CALCULATIONS USING DEFINED DAILY DOSE ESTIMATES

Dieland LE1, Brownell SE1, Davis RA2

1University of Maryland, Baltimore, MD, USA; 2State of Illinois, Chicago, IL, USA

OBJECTIVES: Calculate the reliability of days covered (PDC) actual days supply coverage, and correlate estimates of PDC (ePDC) using days supply derived from drug-specific Defined Daily Dose (DDD) criteria. METHODS: Continuously eligible patients filling non-insulin anti-diabetic medication were targeted from a large sample of pharmacy claims during 2008 and 2009. Medications were grouped into ATC diabetes drug classes. Proportion of days covered (PDC) was calculated as the number of days a patient had medication in their possession divided by the number of days in the period. PDC was first calculated using actual days supply, then ePDC was calculated using an estimated days supply from DDD, strength, and pill quantity. The percent of patients adherent to therapy was defined by a PDC > 0.80. The reliability of each method was assessed by Pearson correlation coefficients and agreement above chance was assessed using Kappa statistics. RESULTS: Adherence was calculated for 163,750 patients taking non-insulin antidiabetics. Overall, the PDC and ePDC were highly and significantly correlated (r = 0.73; P < 0.0001). The percent adherent was 48.8% (PDC) and 34.4% (ePDC), (Kappa = 0.50; P < 0.0001). At the medication class level, differences in PDC and ePDC ranged from 0.01 to 0.35, with correlation coefficients ranging from 0.40 to 0.74. Differences in the percent adherent metric ranged from -2.3 to 23.2, and kappa values from 0.22 to 0.89. CONCLUSIONS: Applying DDD estimates for the purposes of diabetes adherence estimation when lacking days supply values may provide reasonable estimates of adherence based on results presented here. At the medication class level there is greater variability in the reliability measures. Including claims from the U.S. only is a limitation of this analysis, as local treatment patterns may vary, and DDD values were not available for all U.S. medications.

DIABETES/METABOLIC DISEASES – Conceptual Papers & Research on Methods

MARKOV AND MONTE-CARLO MODELS IN THE PROGRESSION OF DIABETES MELLITUS: A LITERATURE REVIEW TO IDENTIFY THE FACTORS INFLUENCING THE CHOICE OF THE TYPE OF MODEL

Renard L1, Borget P2

1GPI Santé, Strasbourg, Luxembourg; 2Institut Gustave Roussy, Villejuif, France

OBJECTIVES: Markov and Monte-Carlo (MC) models are often used to simulate Diabetes Mellitus (DM) and its complications over time, but reasons to choose the model type are poorly documented. A systematic literature review was performed to identify factors influencing the choice of the model type. METHODS: Models simulating the progression of DM and its complications were selected from Medline and Embase databases. Literature reviews, methodological articles and non original models were excluded. Each full-paper selected went through a 31-item checklist via a double-reading process. A qualitative analysis was performed to evaluate the accuracy of the model with the study question. RESULTS: Sixty-one models were selected, including...
SIMPLIFICATION OF PATIENT LEVEL SIMULATIONS TO COHORT MODEL FOR SCENARIO ANALYSIS
de Nigris E, Graham Roberts GR
Double Helix Consulting Group, London, UK
OBJECTIVES: In the last 13 years, models built to appraise health technologies have grown in complexity to accurately reflect the natural history of disease and calculate costs and benefits accordingly. The advantage of using patient level simulation models (PSM) over cohort models (CM) is that CM may become unwieldy with thousands of branches. This usually happens if the patient characteristics influence the risks of complications and these vary over time, or if there are many comorbidities to take into account and the risk of each complication is time dependent. In this case, a typical Markov model may be unusable. However a PSM can take a long time to run in order to produce results. Aim of this research is to present a case study where a PSM is simplified with a Markov structure and to compare the results of the two models. METHODS: We describe how a PSM for diabetes may be adapted to a CM, stating all the limitations. RESULTS: Provided that the PSM gives similar answers to the CM, the CM may be used as a surrogate for conducting complex sensitivity analysis (e.g., 3-way analysis or tornado diagrams). The advantage is that this model would produce results “instantaneously.” CONCLUSIONS: The adaptation of a PSM model to a cohort model may be a desirable feature if the model is required by a non technical audience. This is the case for “due diligence” models that are increasingly required by investors to assess the value of assets that a pharmaceutical company considers to buy or sell. Further research is needed to have a powerful test to assess whether the difference in results between a simplified CM model and the PSM are statistically significant.

MUSCULAR-SKELETAL DISORDERS – Clinical Outcomes Studies

Pandya BJ, Zhu Y, Choi H
Takeda Pharmaceuticals International, Inc, Deerfield, IL; USA; *Boston University School of Medicine, Boston, MA, USA
OBJECTIVES: While the comorbidity burden of gout in the US has been considered substantial and may have been rising over the past decade, no contemporary national data are available. We estimated the prevalence of major comorbidities in patients with gout compared with those without gout based on a recent, nationally representative sample of US men and women (National Health and Nutrition Examination Survey [NHANES] 2007–2008). METHODS: Using data from 5707 participants in NHANES 2007–2008 (2797 men and 2910 women) aged 20 years and older, we determined the prevalence of major comorbidities among individuals with gout, including hypertension, renal impairment, nephrolithiasis, diabetes, myocardial infarction, heart failure, stroke, and obesity. We also compared the prevalence with those without gout using age- and sex-adjusted logistic regressions. Case definitions of comorbidities were based on an affirmative answer to a question asking if a physician or a health professional had diagnosed the corresponding condition. RESULTS: Among US adults with gout, 74% had hypertension, 53% obesity, 26% diabetes, 24% nephrolithiasis, 14% myocardial infarction, 11% heart failure, 10% stroke, and 9% renal impairment (Table). Prevalence of these comorbidities among individuals with gout was substantially higher than among individuals without gout. Age- and sex-adjusted odds ratios (95% confidence interval [CI]) were 4.19 (2.75–6.39) for hypertension, 2.35 (1.55–3.57) for obesity, 2.36 (1.49–3.73) for diabetes, 2.10 (1.39–3.18) for nephrolithiasis, 2.37 (1.54–3.65) for myocardial infarction, 2.68 (1.88–3.83) for heart failure, 2.02 (0.98 to 4.19) for stroke, and 3.50 (2.05–5.98) for renal impairment.

CONCLUSIONS: These findings from the latest nationally representative sample of US adults in NHANES 2007–2008 confirm that the prevalence of comorbidities among individuals with gout is substantial and considerably higher than among individuals without gout.

DISABILITY OUTCOMES AND DOSE ESCALATION IN RHEUMATOID ARTHRITIS PATIENTS TREATED WITH TUMOR NECROSIS FACTOR BLOCKERS: A COMPARATIVE EFFECTIVENESS ANALYSIS
PMS2
Stanford University, Portola Valley, CA, USA; Karolinska University Hospital, Stockholm, Sweden; University of Oslo, Oslo, Norway; Hospital Lapatyn, Montpellier, France; University of California, Los Angeles, CA, USA; Charity University Hospital, Berlin, Germany; UCIB, Brussels, Belgium; Medical University of Vienna and Hietzing Hospital, Vienna, Austria; University of Colorado School of Medicine, Denver, CO, USA
OBJECTIVES: To determine in patients with RA the number needed to treat (NNT) to achieve minimum clinically important differences (MCID) in multiple patient