View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by Elsevier - Publisher Connector

cation utilization and overall health care service use. **METHODS:** A prospective longitudinal cohort study employing robust multiple regression analyses was conducted over a 2-year post-enrollment period in 762 managed care enrolled diabetic older adults, for whom complete prescription refill data were available. Patients completed a comprehensive health risk screen measuring self-reported health perception, falls, lifestyle, depressive symptomatology, and pre-enrollment health care service use at time of enrollment in the plan. We used the medication possession ratio and total annual health care charges as measures of post-enrollment antidiabetic medication and health care service use. **RESULTS:** We found that in this population, annual medication possession rates were nearly 57% for oral hypoglycemics, as compared to approximately 40% for both insulin as well as insulin sensitizers. Among antidiabetic medications, only insulin possession decreased across time ($P < 0.05$). Older adults with increased number of diabetic medications, as well as reporting to have had falls under utilized all antidiabetic medications ($P < 0.05$). Patients with increased age and comorbidity under utilized insulin sensitizers ($P < 0.001$). Self-reported health status was predictive of total health care service utilization in this population, but not antidiabetic medication use. After controlling for the significant effects of health status, comorbidity severity, and number of medications, a 10% increase in the use of oral hypoglycemics was associated with a 3.5% decrease in total annual non-prescription related health care charges ($P < 0.001$). **CONCLUSION:** There seem to be significant differences in utilization patterns of different antidiabetic medications in this older adult population, with a clear decrease in health care service use associated with increased utilization of oral hypoglycemics. Improving medication adherence could potentially reduce avoidable medical costs in similar populations.

PDB2

COST-EFFECTIVENESS OF A NEW HUMAN DERMAL REPLACEMENT FOR THE TREATMENT OF DIABETIC FOOT ULCERS: THE CASE OF FRANCE

Parée F[1], Allenet B[1,2], Possnett J[3], Carr L[3]
[1]CRESGE-LABORES, Université Catholique de Lille, Lille, France; [2]Faculté de Pharmacie, Université Catholique de Lille, Lille, France; [3]York Health Economics Consortium, University of York, York, UK

OBJECTIVE: To assess the cost-effectiveness of a new human dermal replacement (Dermagraft–D) compared with current practice (CP). **METHODS:** A Markov model was developed, to simulate the health status of a cohort of 100 patients with a diabetic foot ulcer, during 52 weeks. The health states considered are: healed, same site recurrence, unhealed not infected, cellulitis, osteomyelitis, amputation and death. The set of transition probabilities is derived directly from the US clinical trial. The costs of each health state were estimated by a Delphi panel of diabetologists (direct costs only in a societal perspective). **RESULTS:** The total number or ulcers healed is first ulcers healed (D: 76,38; median time to heal—MTH: 14–15 weeks vs CP: 69,35, MTH: 28–29 weeks) plus recurrences which are subsequently healed within the 52-week period (D: 25,24; MTH 3–4 weeks; CP: 14,29 MTH: 5–6 weeks) are significantly different. The average expected cost per patient (C/E) with CP for the 52 weeks period considered is 47,418 French Francs (FF) vs 54,384 FF for D group (including 18.200 FF for D treatment and 36,184 FF of conventional treatment). Because D heals more ulcers, the average cost per ulcer healed is lower (53,522 FF vs 56,687 FF). The incremental cost-effectiveness ratio of D ($\Delta C/\Delta E$) equals 387.84 FF. **CONCLUSION:** Human dermal replacement is cost-effective because it offers an opportunity to heal ulcers for less than the price that is already paid by the collectivity, using standard practice (56,687 FF).

PDB3

USE OF BOOTSTRAP IN A COST-OF-ILLNESS STUDY TO DERIVE ACCURACY OF ESTIMATES

Wagenpfeil S[1], Stammer H[2], Neiss A[1], Reitberger U[3], Goertz A[2]
[1]Institute for Medical Statistics and Epidemiology, Technical University Munich, Munich, Germany; [2]SmithKline Beecham Pharmaceuticals, Munich, Germany; [3]Kendle International Inc., Munich, Germany

OBJECTIVE: The CODE-2 study provided costs for patients with diabetes mellitus type 2 in Germany. The aim of this analysis is to assess the accuracy of these estimates. **METHODS:** The German arm of CODE-2 was based on a representative sample of 809 diabetic patients. Treatment strategies, resource use and costs were investigated for the year 1998. Patients were grouped in 5 strata based on their complication status, which was assumed to be the main cost factor. Rare cost driver groups were over-represented in order to obtain higher accuracy of estimates. For extrapolation on a population level, the results were weighted according to real prevalence data on complications estimated in a pre-study. Results were calculated as a weighted average from the mean in each stratum. Because the degree of precision of these estimates was not measurable with the usual statistical methods, bootstrap estimates were computed for lower and upper bounds of 95% confidence intervals taking 10,000 independent bootstrap samples. **RESULTS:** Bootstrap estimates were stable after 10,000 replicate samples. **CONCLUSION:** Bootstrap confidence intervals show a remarkable accuracy of estimations performed in this study. So combination of a weighted stratification by cost factor followed by bootstrapping estimation is an appropriate method for analysing the average of highly variable parameters such as costs of diabetes.

	Average	Bootstrapping 95% confidence level
Total costs per patient and year [DM]	5,539	5,184–5,894
Total costs for Germany [DM]	21 billion	19,5–22,5 billion
HbA1c	7.84	7.63–8.07
Treatment type [%]		
Diet	19.4	16.7–22.1
OAD	53.0	49.6–56.4
Insulin	27.6	24.5–30.7

PDB4

EFFECT OF A POLICY CHANGE ON USE OF BLOOD GLUCOSE MONITORS BY DIABETICS WITH MEDICARE COVERAGE

Silverman BG
Health Care Financing Administration, Baltimore, MD, USA

OBJECTIVE: To study the impact of a Medicare policy change, effective July 1998, extending coverage for glucose test equipment to all diabetics, including those not using insulin. **METHODS:** Using a file of 5% of Medicare beneficiaries, we identified those with continuous fee-for-service coverage from 1996-1998 and a diabetes diagnosis on inpatient or physician claims in 1997. Monitor and test strip use was determined by allowed claims in the durable medical equipment claim files. **RESULTS:** We identified 163,990 diabetic subjects (estimated prevalence among Medicare beneficiaries, 14%). Fourteen percent of diabetics were estimated to have used glucose monitors prior to January 1997; an additional 6.1% had new monitor claim(s) between January 1997 and December 1998. From July through December 1998, mean number of new monitor users per month was nearly triple that observed prior to July 1998. Nearly all of those beginning monitor use between January 1997 and June 1998 had claim modifiers indicating insulin dependence, compared to 59% of new users between July and December 1998. The proportion of subjects with test strip or monitor claims in 1999 did not differ significantly between those who commenced use prior to July 1998, and those who did so between July 1998 and December 1998; among new users of monitors, insulin users and non-users were equally likely to have monitor or strip claims in 1999. Insulin users had a higher number of claims per person. **CONCLUSIONS:** Although extended coverage increased new glucose monitor use in insulin users and non-users, overall use by diabetics remained relatively low. New and established users were equally likely to sustain use in 1999. As new technology becomes available for glucose monitoring, claims data offer a method of identifying the potential target population and estimating the likely impact of coverage policy changes on utilization and costs.

PDB5

THE ECONOMIC BURDEN OF TYPE 2 DIABETES ON THE INDIVIDUAL

Holmes J[1], Bottomley J[2], Gillam S[3], Murphy M[4]
[1]Economists Advisory Group (EAG), London, UK; [2]SmithKline Beecham Pharmaceuticals, Hertfordshire, UK, [3]The King's Fund, London, UK, [4]British Diabetic Association, London, UK

OBJECTIVE: To estimate the personal expenditure and lost earnings borne by individuals as a result of Type 2 Diabetes. **METHOD:** A postal questionnaire was sent to a random sample of 750 Type 2 Diabetes patients and their informal carers at each of 4 UK clinical centres as part of the T[2]ARDIS cost of illness survey. The samples were drawn from registers including patients receiving only primary care as well as those receiving hospital care. Personal expenditure data were collected from the questionnaire. Lost earnings were estimated for working age respondents who reported that they were not working full time because of their diabetes or because of the demands of caring for someone with Type 2 Diabetes. Age and gender specific average earnings were then applied, adjusted downwards for national unemployment. **RESULTS:** A total of 1578 patients (52.6%) and 500 regular informal carers responded to the survey. There was no significant response bias amongst the patients, based on checks of non-respondent demographics and treatment regimes. The patients (n = 1578) reported average personal expenditure of £234 per year (SD 1486), but those with an informal carer (n = 500) reported higher average expenditure at £384 per year (SD 2195). A wide range of expenditure items was reported but the largest single category of expenditure was private healthcare and OTC medication. Carers themselves (n = 500) reported an average of £161 (SD 549) personal expenditure per year. The lost earnings of patients and carers combined were estimated at £568 (SD 3463) per patient (n = 1578), and £1441(SD 5620) per patient with a carer (n = 500). **CONCLUSION:** People with Type 2 Diabetes and their informal carers incur a substantial economic burden, before consideration of the impact on their quality of life. This burden includes significant personal expenditure, particularly on private healthcare, and significant lost earnings as a result of the condition.

PDB6

THE FINANCIAL EFFECTS OF INTERFACE AGREEMENTS FOR DIABETES MELLITUS: SOCIOECONOMIC RELEVANCE OF INTENSIVE CONTROLLED INSULIN THERAPY WITH INSULIN LISPRO COMPARED TO REGULAR HUMAN INSULIN

Kilburg A[1], Clouth J[2], Daniel D[1], Kirchhoff D[1], Rychlik R[1]
[1]Institute of Empirical Health Economics, Burscheid, Germany; [2]Lilly Deutschland GmbH, Bad Homburg, Germany

OBJECTIVES: To assess the costs of intensive controlled therapy with insulin lispro compared to regular human