analysis highlighted methodological drivers. **RESULTS:** CMS initially proposed four methods of computing practice expense in 2007. Three potential data sources were identified: the Socioeconomic Monitoring System (SMS); the Medicare Economic Index (MEI); and the Clinical Practice Expert Panel (CPEP). The four proposed methods utilized various combinations of these sources. Each proposed formula was based upon a series of allocations that resulted in different percentages assigned to different subcomponents of the relevant methodology. Comparative analysis revealed significant differentials. Payments for drug administration in the physician's office would be reduced by all four proposed methods. Two primary methodological drivers were identified: allocation between direct expense and indirect expense within each formula and the volume-based allocation method, whereby specialty impacts are recognized but are then weighted by specialty-specific volume. **CONCLUSIONS:** Many physician fee schedule payment rates in 2007, including drug administration procedures, may be significantly impacted by proposed changes to the practice expense computation methods. It is vital for service provider decision-makers to monitor and understand relevant CMS proposals. Otherwise, if significant underpayment occurs in 2007, patient access may be negatively affected.

PMC17

MONITORING OF PHARMACEUTICAL COST OF REIMBURSED MEDICINES BY COMBINING OFFICIAL PHARMACY INVOICE DATA WITH COMMERCIAL IMS SALES DATA

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OBJECTIVES: In Belgium reimbursement submissions must contain scientific and financial elements. The financial part relies on budget impact (BI) estimates from the payer's perspective for the next 3 years. Real cost monitoring is difficult because official cost data become available with a substantial delay while commercial IMS data measure total sales. Our aim was to develop a method to monitor pharmaceutical expenses in Belgium and compare the outcome with the expected costs of the BI- estimation: a method combining both data sources allowed to monitor in a timely manner only the reimbursed pharmaceutical cost. **METHODS:** The method was applied on the class of cholesterol lowering drugs representing 9% of ambulatory expenses. BI-estimations were provided in the applicant's dossier. Monthly IMS-sales data (=S, IMS-Health) and official cost data (=C, Riziv) were extracted from the respective databases. **RESULTS:** All correlations between historical monthly product data from both sources yielded an $R^2 > 0.75$ which was considered as a cut-off to apply the method (minimal $R^2 = 0.8164$). Expected reimbursement pharmaceutical cost was calculated as: Expected C = S/k where k is the average monthly ratio of S to C during a common 12 month period. The expected C calculation extends real C data by 6 months. Quality control of the method was assessed by comparing the expected C and real C yielding a mean monthly error lower than 5% with a 3 month cumulated error of less than 2%. BI-estimates were inferior to expected and real C. **CONCLUSIONS:** A method was developed to predict 3rd payer's pharmaceutical cost combining recent commercial sales data and official but less recent cost data ensuring reliable application of this method for control of estimates of BI.

PMC18

USING DISTANCE LEARNING TO UNDERSTAND DISCRETE EVENT SIMULATION

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OBJECTIVES: The many benefits of pharmacoeconomic modeling using Discrete Event Simulation (DES) have increased interest in this methodology. A paucity of courses applied to medical problems however, combined with busy schedules prohibit many professionals from familiarizing themselves with the technique. Meeting these needs requires training that can be conducted over the internet. **METHODS:** A distance learning course was developed to provide a basic understanding of DES. Using Flash technology, an internationally accepted web standard, learning materials were organized into discrete Lessons of online information. Each Lesson is a collection of video, narration, and text explaining a particular aspect of DES such as its theoretical underpinnings, examples of implemented DES solutions, and in-depth explanations of model logic. While Lessons are grouped together in Modules which address a specific range of concepts, each Lesson can also stand on its own. This allows the student to approach the course at their own pace and navigate the curriculum according to personal interest and experience level. This granular organizational method also enables individual lessons to serve as reference materials. **RESULTS:** The interactive course allows students to manipulate flowchart exercises, self-certify their knowledge through instantly processed quizzes, and contact course administrators with questions. Accessing the course requires only a broadband internet connection, a standard web browser and the Flash player plug-in. **CONCLUSIONS:** When considering the time and expense of attending geographically dispersed educational seminars, as well as the difficulties associated with participating in large group lectures, the advantages of a tailored, interactive online course become clear. Combining an interactive multimedia presentation approach with a deep curriculum and an at-your-own-pace learning process, the online DES course provides students with an effective and convenient solution for learning about DES in the pharmacoeconomic field.

CANCER

PCN1

THE EPIDEMIOLOGIC, HEALTH-RELATED QUALITY OF LIFE, AND ECONOMIC BURDEN OF GASTROINTESTINAL STROMAL TUMORS

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OBJECTIVES: Gastrointestinal stromal tumors (GIST) is the relatively new term for gastric and intestinal smooth muscle tumors arising from mesenchymal or connective tissue. Knowledge of the epidemiologic, health-related quality of life (HRQL), and economic burden of GIST is important from payer, provider, and patient perspectives and may help guide coverage and treatment decisions for treatments recently available. **METHODS:** PubMed and six scientific meeting databases were searched for studies of GIST and epidemiology, HRQL, or economics. Relevant publications were assessed as to whether they provided original empirical research. **RESULTS:** Eleven publications met the review criteria: eight provided data on GIST incidence, and one each on prevalence, HRQL, and cost. Incident cases were identified by medical record review or through extant databases with prospective confirmation by immunohistochemical staining in six studies. The annualized incidence of GIST (cases per million) was: United States (U.S.) (6.8), Iceland (11.0), The Netherlands (12.7), Italy (13), Taiwan (13.7) Sweden (14.5), Finland (10–20), and France (20.4). Prevalence was estimated at 129 cases per million in Sweden. On the Functional Illness of Chronic Therapy-fatigue instrument, GIST patients scored 40.0 compared to 23.9, 37.6, and 43.6 in anemic cancer, non-anemic

cancer, and the general population, respectively (0 = worst; 52 = least fatigue). Ten-year total per patient costs (drug, monitoring, physician visits, adverse events) for managing GIST patients with molecularly targeted treatment were estimated at £47,086–£70,811 compared to £3674–£4230 with best supportive care. **CONCLUSIONS:** Data suggest the incidence of GIST is similar across countries; lower incidence in one study is likely explained by differences in method of case ascertainment. Although patients with GIST present with fatigue comparable to other cancers, additional research is needed to comprehensively understand its HRQL burden. The increased cost associated with new therapies must be balanced against their expected benefits.

PCN2

INCIDENCE AND SURVIVAL STUDY BY STAGE AND ESTIMATED PREVALENCE OF RENAL PARENCHYMA CANCER IN FRANCE

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OBJECTIVES: To determine incidence and five years survival rate of renal parenchyma tumours by TNM stage using cases recorded in seven French departments cancer registries. To estimate overall and with metastasis cancer prevalence, at the end of 2004, when diagnosed over the period 2000–2004. **METHODS:** Identification of patients using the databases of seven cancer registries. Data collected trough medical records and administrative data (vital states). Assessment of raw global survival rate using Kaplan Meier curves. Determination of global prevalence by summing 2000–2004 annual incident cases for which corresponding global survival data have been applied. Same method for the estimation of prevalence without metastases. Prevalence with metastases is global prevalence minus prevalence without metastases. **RESULTS:** A total of 597 cases were identified and analized. 84% of cases consisted of clear cell adenocarcinoma. Thus, the standardised levels of incidence (worldwide reference population) are estimated to be 9.91 per 100,000 men and 3.75 per 100,000 women. Stages I, II, III and IV had specific incidences respectively of 4.7, 1.1, 1.9 and 2.7 per 100,000 subjects. The 5 years survival rate in men and women was respectively 55% (CI95: 50–60) and 65% (CI95: 58–71). Survival decreased with age and with stage extension. The national number of cases is estimated to be 6,482 cases. Accordingly, the estimated partial global prevalence is 29,300 cases, including 4,860 with metastasis (16.6%), this rate increases with age: from 11% for patients aged less than 60 years to 29% for patients aged 80 years and over. **CONCLUSIONS:** This study is the first one to give an estimation of specific parenchyma cancer by stage incidence, on a population base. On this base, this study also provides prevalence estimations for evolutive cancers.

PCN3

EPIDEMIOLOGIC, HUMANISTIC AND ECONOMIC BURDEN OF PATIENTS WITH METASTATIC RENAL CELL CARCINOMA (MRCC)

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OBJECTIVE: Renal cell carcinoma has an asymptomatic course and 25–30% of patients present with metastatic disease at time of diagnosis. Molecularly targeted therapies (MTTs) represent a breakthrough in treatment of mRCC, prolonging life, reducing toxicity and the negative impact of treatment on health-related quality of life (HRQOL), and offering viable therapeutic options to a broader patient population relative to immunotherapy. The objective of this study was to explore the burden of mRCC and the potential clinical, economic and humanistic value of MTTs. **METHODS:** PubMed, scientific meeting and online databases were searched for articles relating to the epidemiologic, humanistic and economic burden of mRCC. Thirty-five articles were selected. Epidemiology and economic statistics for mRCC were estimated from international registries and published data sources. **RESULTS:** Approximately 1500–8600 new mRCC cases occur annually in major European and North American countries, and Japan. Standard immunotherapy is largely ineffective (less than 10% response rates; no benefit in most patients, especially the elderly) despite a high annual cost of treatment (e.g., $15,500–$82,000 across countries). In the absence of effective treatment, mRCC is rapidly fatal with 13% or fewer patients surviving and a median survival of less than 1 year. Two-year costs of care for mRCC have been estimated at $35,735/year (US$). HRQOL of mRCC patients is comparable to congestive heart failure, diabetes and other cancer patients and may be further diminished by systemic immunotherapy. Recent studies show that MTTs produce marked improvements in response rates/survival, and tolerability without negative impact on HRQL. **CONCLUSIONS:** The need for MTTs for mRCC is characterized by the lack of effective treatment for the vast majority of patients, high mortality, and considerable humanistic and economic burden. Meaningful improvements in effectiveness and tolerability in this patient population suggest that MTTs offer economic and humanistic value in the treatment of mRCC.

PCN4

A COMPARATIVE BUDGET IMPACT (BI) ANALYSIS OF ARANESP® (DARBEPOETIN ALFA) 500 µG Q3W VERSUS OTHER ERYTHROPOIESIS STIMULATING PROTEINS (ESP) IN CHEMOTHERAPY-INDUCED ANEMIA (CIA) IN SPAIN

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ESP are standard treatment options for CIA. In this setting, both Epoetin (EPO) alfa and EPObeta are administered three times/week (TIW) or once/week (QW), while darbepoetin alfa (DA) is the only ESP approved to be administered as once every three weeks (Q3W). For ESP administered TIW or QW the SPCs states to double the dose if hemoglobine increases <1 g/dL after 4 weeks. Doubling the dose is not needed with starting dose DA 500 µg Q3W. These administration differences might result in different treatment costs for each agent. **OBJECTIVE:** Estimate BI (mean cost/patient) of administering the different ESP in the treatment of CIA in Spain. **METHODS:** The following variables were considered in the economic model: ESP ex-manufacturer price in Spain, administration pattern, weeks of treatment (12 weeks), weeks of evaluation before increments of dose (4 weeks), dose increases, and overall cost of one administration (€59.72). In addition, a two-way sensitivity analysis was performed to test the robustness of the results, considering the following variables: 1) administration cost from a minimum of 0 to +25%, and 2) the lowest and highest percentage of patients needing to increase dose for EPOalfa and EPObeta from six studies found in the literature where this data was reported. **RESULTS:** In the base case scenario, assuming an incidence of doubling the dose with both EPOalfa and EPObeta of 29.60%, which was the mean value