HEALTH CARE USE & POLICY STUDIES – Health Care Costs & Management

PHP45

VARIABILITY OF FEES IN THE FIELD OF PHYSICAL THERAPY IN THE AUSTRIAN CONTRACT PHYSICIANS' AND INSTITUTES' SECTOR

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OBJECTIVES: Contracts with physicians or institutes that perform health care services can provide price advantages due to competition. The sickness funds of the Austrian Social Security signed different contracts concerning physical therapy with physicians or institutes. Claims data, respectively rendered fees suggest a possible savings potential in the fee for service system without reducing the scope of the procedures or the frequencies. We analyzed the variety of fees in the field of physical therapy including contracted physicians and institutes. This shows variability among the total amount of reimbursement in the Austrian outpatient sector consisting of contracted physicians, institutes, and outpatient clinics of hospitals and ambulatories. The outpatient sector is supplied with services by contracted physicians. Approximately 30% of the Austrian outpatient sector cannot be displayed since no data is available from outpatient clinics of hospitals. **METHODS:** Price differences for the same or similar procedures performed by different contracted physicians or institutes are evaluated. Different financial impacts (e.g. focusing on average or lowest value) are simulated. Values were rounded to two decimal points, however, calculated by 15 decimal points. The fee equals the division of turnover and frequency. **RESULTS:** Services in physical therapy were brought into account 13.412.401 times in the year 2006. Calculating all frequencies with the lowest paid fee (turnover/frequency) for each service would lead to a lower financial effort of 43% compared to the current turnover. Calculating all frequencies with the highest fee for service would lead to a higher effort of 82% compared to the current turnover. **CONCLUSIONS:** A current savings potential of 82%, contrasting the current fee with the most expensive one, indicates a well established fee negotiation. However, a savings potential of 43% is worth being considered for further evaluation and, if necessary, the adjustment of fees is advisable.

PHP46

EVALUATING COST DIFFERENCES AMONG OPERATIONAL TEAMS SUPPORTING THE INDIANA HEALTH INFORMATION EXCHANGE

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OBJECTIVES: Health Information Exchange (HIE) is emerging in health care markets across the US at an accelerating rate. However, one of the greatest barriers to building and sustaining HIE organizations is a clear understanding of the costs. We analyzed personnel costs for managing data connections in the Indiana health information exchange (IHIE). IHIE's data infrastructure is managed by project management (PM), system engineering (SE) and data mapping (DM) teams. Each team is involved in different tasks but to connect a hospital they coordinate overlapping tasks. To gage ongoing maintenance expenses we evaluated the cost differences among the teams. **METHODS:** We interviewed team members to gather level of effort data for implementing and maintaining IHIE data interfaces. Personnel costs were calculated by multiplying the level of effort by staff salaries. Annual personnel costs were determined by the total interfaces implemented per year. We projected personnel costs for years 2004–2008 by using a constant level of effort and an increasing number of hospitals and annual salary. We used one-way ANOVA to detect differences among the average cost per team for managing interfaces. **RESULTS:** The three teams (PM, SE, and DM) exhibited different average costs. The DM team produced the largest average cost and level of effort followed by SE and then PM. Using ANOVA and with critical value of 0.10, the cost differences were statistically significant ($p = 0.055$). **CONCLUSIONS:** Since the cost differences are significant, it suggests the differences are not due to chance but are largely due to level of effort variances. The level of effort differs because each team performs different tasks with varying degrees of complexity. Additional, difficult to quantify factors include size of hospitals, proficiency of hospital maintenance staff and adequate frequency of interactions; they appear in the average costs indirectly.

PHP47

PREDICTING HEALTH SERVICE UTILIZATION WITH THE PCS AND MCS OF THE SF-36

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OBJECTIVES: We aim to predict outpatient consultation and inpatient consultation with two summary scores of the SF-36, physical component summary (PCS) and mental component summary (MCS). **METHODS:** A retrospective cross-sectional design was carried out among primary care patients in mainland China. Health-related quality of life (HRQOL) was measured by two summary score of the SF-36, PCS and MCS, Either the electronic or the paper version of validated Chinese SF-36 was used in the survey. Outpatient consultation was calculated by the monthly outpatient consultation rate and inpatient consultation was calculated by the annual hospitalization rate. Binary logistic regression for consultation and inpatient consultation was adopted in the analyses. A total of 733 valid subjects were eventually recruited in this study. **RESULTS:** For the monthly outpatient consultation rate, the odds ratios (OR) and 95% confidence interval (CI) were 0.919 (0.891, 0.947) for PCS and 0.995 (0.970, 1.021) for MCS. For the annual hospitalization rate, OR and 95% CI were 0.907 (0.884, 0.930) for PCS and 0.951 (0.927, 0.975) for MCS. **CONCLUSIONS:** PCS of the SF-36 can predict both outpatient consultation and inpatient consultation, whereas MCS of the SF-36 can predict inpatient consultation among primary care patients in mainland China.

PHP48

LEGISLATIVE ASPECTS OF HEALTH TECHNOLOGY ASSESSMENT IN SLOVAKIA

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OBJECTIVES: Pharmaceutical expenditures in Slovakia accounts for a higher share of total health expenditures than it does in any other OECD country. Although health spending is well below the OECD average when considered as a share of GDP, Slovakias pharmaceutical expenditures accounts Thirty-two percent of total health care budget. The accessibility and availability of medicines, even the most innovative products is good. **METHODS:** We have analysed the relevant legislation and official reimbursement decisions and commentaries, published by the MoH in 2008 that are accessible either via internet or directly per request in MoH. **RESULTS:** Mandatory HTA (pharmacoeconomy) is incorporated in all relevant legislation. The main drug reimbursement body – Categorisation committee of the MoH – received a special advisory body "Working group for pharmacoeconomics and outcomes research". The working group consists of experts who evaluate all reimbursement applications for new drugs and prepare an assessment of the HTA part of the application. Recently, MoH refused reimbursement in several cases, including new indications in innovative oncology drugs. **CONCLUSIONS:** The focus of the MoH drug policy is on more rational spendings, especially on reference pricing and HTA. Where the reference pricing is effective from April 1, 2009, estimated savings for 2009 are up to 1 bil € ($1.34 billion), or 10% of the total drug bill. Referencing and the savings is a not repeatable issue, so the mandatory HTA is effective in practice (that means, not just legislation but also implementation) from January 1, 2009. There are first results of these new procedures, where the real impact of the HTA in the decision processes is demonstrated.

PHP49

THE CHANGING DYNAMICS IN HEALTH CARE FUNDING

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OBJECTIVES: Traditionally, the US can be broadly defined as having three sources of funding (private insurance, out-of-pocket funding and public funding through Medicare/Medicaid). This funding triangle can lead to varying degrees of inequality in the health care system. Meanwhile, European markets generally fund health care either through statutory health insurance schemes or by the government with very little being paid for directly by the patient. However, as governments consider how to meet their growing health care needs in a global recession, many will look towards a combination of cost reduction and new funding sources. This scramble to fund health care services will open markets to ideas once thought off-limits: just as the US starts moving towards universal care, some European markets, such as the UK, are considering the idea of supplemental, private provision of health care. **METHODS:** Review of US states that now require health insurance, literature regarding the impact of Medicare Part D and policy papers regarding potential federal level changes to the provision of health care. Review of changes to the EU5 (France, Germany, Italy, Spain and the UK), including changes in the size of the private insurance market, the amount paid through co-payments and policy announcements regarding greater reliance on out of pocket/private funding. Review of the amount of generic drug versus branded pharmaceuticals spend in each market. **RESULTS:** Despite growing utilization of generic drugs, health care systems are still struggling to fund the rising cost of health care. While the US system is moving towards a greater reliance on government funded health care, European markets are realizing necessity of additional funding sources. **CONCLUSIONS:** In order to stretch budgets to meet growing health care needs, the 6 major markets are moving to a more diverse funding matrix for health care and, along the way, will more closely resemble one another.

PHP50

INCREMENTAL SICK LEAVE COSTS AND LOST TIME AMONG EMPLOYEES WITH PSYCHIATRIC AND MEDICAL CONDITIONS

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OBJECTIVES: To compare the incremental costs and absences due to sick leave (SL) among employees with bipolar disorder (BPD), other mental disorders (OMD), chronic constipation (CC), functional dyspepsia (FD), gastroesophageal reflux disease (GERD), gout, and insomnia. **METHODS:** A 2001–2007 US employee database was used to identify subjects with BPD, OMD, CC, FD, GERD, gout, and insomnia. All studies used two-part regression models to control for differences between employees with the condition and control groups (employees without the condition). SL costs were based on payments made to the employee (adjusted to 2007 US dollars) and absences were based on reported hours missed. Controls (by study) used the average index date of the subjects with the condition. Incremental costs and absences were defined as adjusted differences between the condition cohort and controls and considered significant at $P \leq 0.05$. **RESULTS:** Numbers of employees with SL eligibility for

the condition/controls (employees without condition) were: BPD 239/85,420; OMD 5508/76,372; CC 920/143,287; FD 918/143,138; GERD 6172/133,466; gout 600/123,461; and insomnia 7951/134,094. All incremental SL cost differences were significant ($P < 0.05$). From highest to lowest, the incremental annual SL costs (condition-control) were: gout = $359(172.5% higher than controls), insomnia = $208(162.1%), OMD = $175(142.4%), GERD = $169(141.1%), CC = $127(133.8%), FD = $120(128.8%), BPD = $94(119.7%). From highest to lowest, the incremental annual absence days were: gout = 2.8(178.3% of control), OMD = 2.3(186.9%), BPD = 1.9(157.0%), insomnia = 1.6(175.4%), GERD = 1.3(141.5%), FD = 0.8(126.7%), and CC = 0.7(130.5%). **CONCLUSIONS:** Employees with insomnia, FD, GERD, gout, CC, BPD, and OMD incur more absences and costs than employees without these conditions, suggesting that management of these conditions should focus on both the workplace and health care settings. Because individual salaries were used to calculate the costs for each condition, the differences in the ordering of the incremental days and payments may be attributable to job-related differences between the diseases. Gout had the highest incremental costs and days of any of the studied conditions.

PHP51

DOES IMPROVING QUALITY OF CARE SAVE MONEY? ANALYSIS OF HEALTH CARE EFFECTIVENESS DATA AND INFORMATION SET (HEDIS) MEASURES

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OBJECTIVES: To determine whether improving quality of care saves money we examined costs and benefits of increasing compliance with the 2006 Healthcare Effectiveness Data and Information Set (HEDIS) measures. **METHODS:** We systematically reviewed English-language scientific literature (1998–2008) for US or Western European cost effectiveness analyses published as original articles that compared HEDIS-compliance to non-compliance and reported cost and benefits. We abstracted costs, effectiveness, and incremental cost effectiveness ratios (ICER). Using US Census data, we calculated the total annual cost and benefit associated with moving from 2006 HEDIS rates to 95% compliance. **RESULTS:** We screened 1641 articles, reviewed 222, and accepted 18 (relating to 19 of 25 measures). Greater compliance with 6 measures reduced costs. Increasing compliance with the remaining 13 measures increased costs but improved health; ICERs varied from $180/quality-adjusted-life-year (QALY) (initiation of alcohol/drug treatment) to $39,805/QALY (breast cancer screening). The number of people required to reach 95% compliance varied from 0 for beta-blocker use after MI (2006 compliance 96.6%) to 39 million for flu shots (2006 compliance 44.5%%). The most costly measure was comprehensive diabetes care ($7 billion/year) and the least costly were increasing childhood immunizations and reducing inappropriate imaging studies for back pain (each saving almost $400 million/year). 95% compliance on all measures would cost $13.2 billion annually, save $1 billion (net $12.2 billion), and add 7 million QALYs for a mean overall cost effectiveness of under $2000/QALY. **CONCLUSIONS:** Improving quality using a nationally accepted list of quality measures would increase, not reduce, costs. A published study estimated that recent medical advances have improved health at a cost of $30–$85,000/QALY; in comparison, improving compliance with HEDIS measures may be an attractive investment. If more HEDIS measures examined overuse (e.g. of treatments with inadequate evidence of effectiveness), improving compliance with the entire set might reduce costs.

PHP52

BUDGETARY POLICIES AND AVAILABLE ACTIONS: A GENERALISATION OF DECISION RULES FOR ALLOCATION AND RESEARCH DECISIONS

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OBJECTIVES: Uncertain decisions made using a cost-effectiveness threshold applied to each decision problem separately fail to identify the true opportunity costs of displacing other unrelated programmes. We show that the allocation problem can be characterised to provide a more general and comprehensive approach to informing adoption and research decisions. **METHODS:** A stochastic mathematical programming approach is used to solve the allocation problem. The formulation allows the characterisation of actual budgetary policies, including a strict budgetary rule where deficits are not possible and constraints must always be met. The opportunity costs (health forgone due to curtailing some programmes and treatments) of violating the budget constraint are incorporated directly. In addition, the value of acquiring new evidence to inform the allocation problem in light of its current uncertainty is considered simultaneously and consistently. **RESULTS:** The allocation and research decision problem depends on a number of considerations: 1) size of overall budget; 2) budgetary policy in place; 3) information that is revealed and its timing; 4) subsequent actions available to decision makers; and 5) costs of effectively monitoring ex-ante plans. Standard decision rules in cost-effectiveness analysis are only optimal under very special circumstances, which require budget constraints to be soft in addition to assumptions of perfect divisibility, constant returns and all costs and benefits occurring within the budgetary period. However, if the budget constraint is hard then technologies will need to be more cost-effective (an incremental cost-effectiveness ratio substantially below the threshold) before the decision maker should take the risk of an ex-ante decision to adopt them. **CONCLUSIONS:** Standard decision rules and measures of value are proxies for an uncertain and complex process. There are no simple ex-ante decision rules in most common circumstances and the value of information cannot be established for one programme independently of the rest of the allocation problem.

PHP54

EVALUATING DIFFERENCES IN DRUG REIMBURSEMENT BETWEEN MAIL-ORDER AND COMMUNITY PHARMACY

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OBJECTIVES: Reimbursement for the same drug may differ with respect to channel of distribution. The objective of this study was to assess differences in reimbursement per unit of product dispensed and to compare pharmaceutical expenditures between mail-order and community pharmacy. **METHODS:** Pharmacy claims from a retirement system for the period 2000–2005 were used in the analysis. Differences in reimbursement per unit of product dispensed and expenditures were estimated using a basket of drug items (i.e. unique combinations of drug products, formulations, strength, and generic status) dispensed in both channels. Rebates were not included in the analysis. Differences were assessed using bootstrapped 90% percentile and hybrid confidence intervals. **RESULTS:** The comparison basket contained 1,964 items and 4,001,243 claims. In 2005, 52.07% of the items had higher reimbursement per unit in community pharmacy, 35.80% had higher reimbursement in mail-order pharmacy and 13.31% had equal reimbursement. In 2005, estimated pharmaceutical expenditures of the comparison basket were $558.93 million using mail-order pharmacy prices and $623.66 million using community pharmacy prices. This difference was attributed to higher reimbursement of ingredient cost, administrative fees and dispensing fees in community pharmacy. The difference in estimated pharmaceutical expenditures of the comparison basket between community and mail-order pharmacy decreased from 12.8% in 2000 to 10.4% in 2005. Estimated pharmaceutical expenditures in both channels increased from 2000–2005. The difference in total expenditures, ingredient cost, dispensing, administration and other fees between channels decreased during the study period. **CONCLUSIONS:** Nearly one-half of all comparable items had higher reimbursement per unit in community pharmacy than mail-order pharmacy. Overall expenditures were significantly lower in mail-order pharmacy. Differences in pharmaceutical expenditures between community and mail-order pharmacy were explained by differences in acquisition costs and fees. Decision makers should carefully evaluate pharmaceutical reimbursement including discounts, fees and rebates when deciding the most efficient dispensing channel.

PHP55

TRENDS IN DESIGN CHARACTERISTICS OF BRIEF SUMMARY ON PRINT ADS OF PRESCRIPTION DRUGS: A FIVE YEAR STUDY

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OBJECTIVES: To evaluate and compare trends in design characteristics of brief-summary formats of prescription drug print ads. **METHODS:** The source for these ads include a consumer magazine – National Geographic (NG) and three medical journals – Annals of Internal Medicine (AIM), The Journal of the American Medical Association (JAMA) and The New England Journal of Medicine (NEJM). Each source was visually reviewed by research assistants to record information from brief summaries on ads from issues dated January 1, 2000 through December 31, 2004. The design characteristics evaluated were text font size, font consistency, presence of bullets, highlights, tables, graphs, format type (e.g.: question/answer format), warning box, spacing between lines, and number of columns used to present the material. Font size was measured using the Compugraphic scale. Data were coded and analyzed using SAS® 9.1. Descriptive statistics and comparisons using chi-square tests were performed to evaluate differences by year and source at a priori significance level of 0.05. **RESULTS:** A total of 7266 printed ads for 240 products manufactured by 90 pharmaceutical companies were evaluated from NG (95), AIM (1372), JAMA (1787), and NEJM (4012) respectively. There were significant differences ($p < 0.05$) in most design characteristics by year (2000–2004), namely font consistency, presence of bullets, highlights, tables, graphs, and warning box. These differences were also statistically significant ($p < 0.05$) across sources (magazine/journals). The question/answer format and presence of a warning box was mostly seen in ads obtained from the magazine. The mean (SD) font size of the text on these ads was small (5.7 ± 1.1) and consistent throughout these ads by year and source. **CONCLUSIONS:** Prescription drug print ads have changed over the years and are different based on the readership source. Further improvement in standardizing the format and increasing the text font may help the intended readers of these ads.

PHP56

COMPRISON OF NOTIFIABLE DISEASES SURVELLIANCE WEBSITES OF FOUR COUNTRIES

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OBJECTIVES: Globalization necessitates better co-ordination among countries to monitor disease outbreaks. The spread of SARS in 2003 highlights this need. Hence, this study compared the notifiable diseases surveillance websites of four countries. **METHODS:** Twenty-five countries were identified from literature that had published Human Development Index >0.9 and Quality-of-Life index >7. Four countries from this list were selected, namely, United States (US), Canada, Australia, and New Zealand. Fourteen European Union member countries were excluded, as they have a process to harmonize and consolidate their disease surveillance networks in place by