PHP3

ASSESSING FRACTURE RISK WITH PRESCRIPTION DRUGS IN MEDICARE-ELIGIBLE PLAN MEMBERS OF A TELECOMMUNICATIONS COMPANY

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Seniors are heavy users of medications. Despite strong evidence that some medications are associated with an increased risk of serious adverse consequences in seniors, physicians prescribe, pharmacists dispense, plans pay and seniors suffer. One such adverse consequence is a fall secondary to dizziness or instability of gait. A fall with a resulting fracture is a leading cause of hospitalizations and deaths of seniors.

OBJECTIVES: To advance the quality of its prescription drug benefit, a telecommunications company studied whether taking prescription drugs both known or suspected of causing dizziness or instability of gait in seniors increase the likelihood of fractures. The prescription drugs studied included: propoxyphene and combinations; hydantoin anticonvulsants; benzodiazepines; selective serotonin reuptake inhibitors; and tricyclic antidepressants.

METHODS: This analysis studied the rate of hip fractures in a group of 35,264 members over a five-year period from 1996 to 2000. Each member in the study reached the age of 65 by January 1, 1996. Parametric duration regression models were used to quantify the impact of taking certain prescription drugs on the likelihood of subsequently having a hip fracture and to control for differences between study members with hip fractures and those without.

RESULTS: Nearly 4% of the study population experienced a hip fracture during the time period. Each additional year of age increased the likelihood of having a hip fracture by 10.5%. Females were 73 percent more likely than males to have a hip fracture. Members who took amitriptyline were 48 percent more likely, and members who took temazepam were 27 percent more likely to have a subsequent hip fracture during the study period.

CONCLUSIONS: Amitriptyline and temazepam increased the likelihood of hip fracture among Medicare-eligible plan members. The telecommunications company will use this evidence to reduce the use of these medications, when appropriate, by its members.

PHP4

GENERIC NARROW THERAPEUTIC INDEX DRUG USE: 1996–1998

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The FDA has designated 23 pharmaceutical entities as Narrow Therapeutic Index (NTI) drugs based on the range between therapeutic and toxic dose levels. The generic substitution of NTI drugs has been controversial due to perceived bioequivalence problems.

OBJECTIVES: We examined the ambulatory generic NTI drug use and cost from 1996 through 1998 and compared NTI drugs with non-NTI drugs in generic use. The relationship between generic use and retail pricing was explored.

METHODS: This study examined secondary data using 1996–1998 Medical Expenditure Panel Survey (MEPS) data. MEPS provides nationally representative estimates of health care use, expenditures, sources of payment, and insurance coverage for the U.S. civilian non-institutionalized population.

RESULTS: NTI drugs represent 7.0%, 6.3%, and 5.9% of total annual prescriptions from 1996 to 1998, respectively, which correspond to 6.1%, 5.2%, and 4.9% of total prescription expenditures. Among multiple-sources drugs, NTI drugs are more likely than non-NTI drugs to be dispensed by brandname with odds ratios of 3.9, 3.4, and 4.1 in 1996, 1997, and 1998, respectively ($P < 0.05$). The median discount rates for non-NTI drugs are 0.35 and 0.32 for 1996 and 1997 compared to rates of 0.36 and 0.34 for NTI drugs. Accordingly, the realized savings from generic NTI drugs were 249.2 and 265.3 million dollars for 1996 and 1997. If NTI drugs had the same generic use rates as non-NTI drugs, an additional 293.6 and 147.7 million dollars could have been saved. The discount rates of generic drugs were positively associated with use in both NTI and non-NTI drugs in 1996 with a stronger effect in NTI drugs. The switch rates of NTI drugs were not different from those of non-NTI drugs.

CONCLUSIONS: Generic NTI drugs were used at a lower rate than non-NTI drugs from 1996 to 1998. Increased generic NTI drugs use could lead to more savings.

PHP5

IMPACT OF MULTI-TIERED PHARMACY BENEFITS ON MEDICATION ADHERENCE

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OBJECTIVE: To examine the impact of two and three-tiered prescription drug benefits on medication adherence rates among managed care patients with selected chronic conditions.

METHODS: Quasi-experimental, pre-post with comparison groups design using 6109 adult patients in a large, western U.S. managed care organization with one or more of the following conditions: arthritis, diabetes, dyslipidemia, GERD, or hypertension. The intervention group consisted of members whose prescription drug coverage converted from a 2-tier to a 3-tier benefit (n = 4239). Comparison groups included those whose benefits remained in a 2-tier (n = 592) or 3-tier (n = 1278) structure. Medication adherence rates were measured in the pre and post periods using the medication possession ratio. Demographic and attitudinal measures were obtained from a mail survey during the pre period. Statistical analyses were based on maximum likelihood estimates from a repeated measures model to test for differences in medication adherence controlling for the effects of demographic variables, health status, comorbid diseases, pharmacy plan type, and patient satisfaction.
RESULTS: Adherence rates ranged from 90.4% to 95.5% in the pre period. The mean adherence rate in the intervention group decreased from 94.7% (pre period) to 90.2% (post period), a decrease of 4.5%. Similar decreases occurred in the comparison groups: from 95.5% to 91.7% (–3.8%) for 2-tier subjects, and from 92.9% to 90.4% (–2.5%) for 3-tier subjects. The decrease in the intervention group was significantly larger than the decrease in the 3-tier subjects ($p = 0.0003$) but not statistically different from the decrease observed in the 2-tier subjects ($p = 0.27$). Adherence increased slightly as age and number of chronic conditions increased. No relationship was observed between medication adherence and patient satisfaction ($p = 0.35$ in the pre period).
CONCLUSION: Medication adherence rates were high in the population studied. Changes in benefit design (from 2 to 3-tier drug benefits) had no appreciable impact on adherence.

PHP6

AN ANALYSIS OF THE EFFECT OF MANAGED CARE IMPLEMENTATION ON PRESCRIPTION DRUG UTILIZATION BY TEXAS MEDICAID CLIENTS

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OBJECTIVES: This study measured prescription drug utilization and payment changes when Texas Medicaid clients in one County Service Area moved from a fee-for-service (FFS) to either a health maintenance organization (HMO) or primary care case management (PCCM) health care delivery model (N = 72,172). The purpose of this study was to assess the effect that the managed care programs had on the prescription drug utilization of Medicaid clients who had a carved-out prescription drug benefit.
METHODS: Drug utilization and payment patterns were compared for six-month periods before and after the managed care program implementation. Medicaid clients in FFS, HMO, and PCCM programs in three other geographical areas across the state served as comparison groups (N = 54,061).
RESULTS: Significant differences ($p < 0.001$) across plan designs were found in the mean changes of the following variables between study periods for child and adult clients: 1) prescription drug use rates; 2) generic drug use; 3) prescription drug payments per claim; and 4) prescription drug payments per client. Furthermore, these changes were found to be significantly different across plan designs for child and adult antibiotic claims, and for child antidepressant claims. Significant differences were found for the following variables for child and adult antihistamine claims, and for child NSAID claims: 1) generic drug use; 2) prescription drug payments per claim; and 3) prescription drug payments per client. For adult antidepressant and NSAID claims, significant differences were found in the following variables: 1) prescription drug use rates; 2) generic drug use; and 3) prescription drug payments per client.
CONCLUSION: This study provided evidence of a managed care spillover effect on the prescription drug utilization of Medicaid managed care patients, despite the carved-out drug benefit. The results of this study should be helpful to Medicaid administrators who make decisions about managed care programs and carved-out drug benefits.

PHP7

HORIZONTAL INEQUITY IN HEALTH CARE UTILIZATION IN JAPAN

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OBJECTIVE: International comparisons of horizontal inequity in health have recently become one of the most pertinent issues in health economics. Japan has not been included in these international comparisons. This paper, focusing on Japan, rectifies this and considers its dynamics over six years from 1992 to 1998, which has never been considered in this field.
METHODS: We use the Comprehensive Survey of Living Standards in Japan (CSLSJ) for 1992, 1995, and 1998 so as to perform international comparison following Doorslaer and Wagstaff et al (JHE:2000). The sample size for each year exceeds 60,000. First of all, we regress outpatient utilization on age, gender, self-evaluation of health, and/or list of symptoms and define "Needs" as the predicted. Then, Kakuwani index between actual utilization and "Needs" is calculated.
RESULTS: In a rigorous international comparison, we cannot find any horizontal inequity in health in Japan. The point estimator is larger than Belgium and less than Canada, which means the smallest horizontal inequity in OECD countries. Moreover, it gradually changes from pro-rich to pro-poor, though this movement is not significant.