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HEALTH POLICY

HEALTH POLICY—Drug Prescribing, Reimbursement & Cost Studies

PHP17

RECENT TRENDS IN INPATIENT DRUG COSTS: 2000–2002

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OBJECTIVES: To evaluate the extent to which case-mix-adjusted, hospital inpatient costs for pharmaceutical services changed from 2000 through 2002 in short-term, general, non-federal (STGNF) hospitals in the U.S., and to identify hospital characteristics that were significantly associated with such changes. **METHODS:** Using all-payer data from more than 2500 STGNF hospitals, discharge-level drug costs were estimated using the Medicare Cost Report information on revenue-center-specific cost-to-charge ratios applied to the corresponding hospital charges. Cost estimates were analyzed by all DRGs to identify those in which statistically significant (alpha = 0.05) upward or downward trends were detected. Pharmacy costs relative to other hospital costs were also analyzed, as was the variability across hospitals in case-mix-adjusted average pharmaceutical cost. Hospital characteristics were evaluated as predictors of case-mix-adjusted average pharmaceutical costs, and national estimates of total hospital pharmaceutical costs were estimated for selected DRG-defined clinical groups. **RESULTS:** Numerous DRGs exhibited significant upward or downward trends in average costs per case for pharmaceutical services from 2000 through 2002. Significant trends over time in the proportion of total hospital costs that were attributable to pharmaceutical services were also detected. Extensive variability across hospitals was detected in both the total costs that were due to pharmaceutical services, as well as the proportion of the total costs that were due to pharmaceutical services. Many DRGs exhibited substantial increases in the average dollar amount of costs for drug treatment from 2000 through 2002. **CONCLUSIONS:** Inpatient costs for pharmaceutical services have increased substantially in recent years relative to other hospital services areas, such as laboratory and diagnostic radiology. Further, there exists extensive variability in the intensity of pharmaceutical services that are provided, even after case-mix adjustment. Finally, numerous hospital characteristics, such as teaching status and size, are significantly correlated with the relative utilization of pharmaceutical services for the treatment of inpatients.

PHP18

PREVALENCE OF DRUG-RELATED PROBLEMS AMONGST HOSPITALISED PATIENTS ON POLYPHARMACY IN SINGAPORE

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OBJECTIVE: To investigate the occurrence of all drug-related problems (DRPs) amongst hospitalised patients on polypharmacy, and to confirm the association of advanced age and the female gender with adverse drug reactions (ADRs). **METHODS:** A retrospective, cross-sectional study was carried out in patients on polypharmacy (5 and more drugs). Chi-square test was used to test for significant differences ($p < 0.05$) between the age and gender of patients, and their risk of developing DRPs. A two-tailed, unpaired t-test was employed to test for significant difference ($p < 0.05$) between the number of medications taken and the risk of DRPs. Relative risk (RR) analysis was performed for geriatric (patients above 65 years old) and female patients to assess their propensity in developing ADRs. **RESULTS:** The study population consisted of 347 patients (43% female), aged 16–97 (average 66 years). Geriatrics made up 58.2% of this population. The number of medications per patient ranged from 5 to 14 (mean 7.4 ± 2.1). The types of DRPs identified included: inappropriate treatment (42.9%); potential drug interactions (45.0%); inappropriate dosages (20.7%); unsafe drugs for patients (13.5%); ADRs (7.5%). There were no statistical correlations when age and gender were compared between patients with and without DRPs. However, number of medications taken was a risk factor for the presence of DRPs ($p = 0.001$). RR for geriatrics and female patients to develop ADRs are found to be 1.01 (95% CI: 0.52, 1.85) and 0.79 (95% CI: 0.40, 1.55), respectively. **CONCLUSION:** Our results established that DRPs in hospitalised patients on polypharmacy in Singapore is comparable to that in other developed countries. Our results also support that polypharmacy is a greater risk factor than age where high susceptibility for DRPs, especially ADRs is concerned. The low RR of geriatrics and female patients developing ADRs deviates from published results and may be confounded by our inclusion criteria.

PHP19

COMPARING THE COSTS OF MAIL ORDER AND RETAIL PHARMACY

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OBJECTIVE: To compare the costs of prescriptions dispensed through mail order and retail pharmacies. We examined total costs, costs to health plan sponsors, and costs to health plan members. **METHODS:** We compared the actual cost of prescriptions dispensed through a mail order pharmacy with what those same prescriptions would have cost if dispensed through retail pharmacies. We based our analysis on prescription claims submitted to a health plan in the northeastern United States between July 1, 2002 and June 30, 2003. The plan covered about 100,000 members. The plan used a mail-order pharmacy that was not owned by a major PBM, a 3-tier benefit design, and specified that patients' could get a 90-day supply through mail order for the equivalent of two 30-day retail copays. Retail pharmacies were paid a $2.00 dispensing fee per 30-day supply dispensed. The mail-order pharmacy charged no dispensing fee. For brand name drugs, the plan paid AWP less 15% to retail pharmacies and AWP less 17% to the mail-order pharmacy. **RESULTS:** Total costs for the 44,847 prescriptions dispensed through mail order were $6,401,624. Had these prescriptions been dispensed at retail, costs would have been $6,902,252. Ingredient costs were $6,401,624 through mail versus $6,633,170 at retail. Total costs to the health plan were $4,726,637 through mail versus $4,417,733 at retail. Member costs were $1,674,987 through mail versus $2,484,519 at retail. **CONCLUSIONS:** Mail order was less expensive overall, but more expensive to the health plan. The loss of copays in the mail order plan was greater than the savings on ingredient costs and dispensing fees.

PHP20

FACTORS THAT INFLUENCE PRESCRIBING DECISIONS

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