Abstracts

CHARACTERIZING PHARMACY AND MEDICAL CLAIMS FOR A PRIVATE INSURANCE POLYPHARMACY POPULATION

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OBJECTIVE: To describe and characterize a group of private insurance members taking multiple medications over a one-year period. METHODS: Persons were selected for this polypharmacy analysis if they had at least five unique maintenance prescriptions in their pharmacy claims records for the period of January–March 2005, based on a customized list of chronic medications. The full set of pharmacy and medical claims for these members were evaluated for a 12-month period, October 2004 to September 2005. Standard descriptive statistics were calculated to characterize the population. Logistic regression models were used to assess the association of pharmacy claims and “safety events” (i.e., emergency room visits (ER) and hospitalizations (H)). RESULTS: The final analytic sample, having both pharmacy and medical coverage for the period, consisted of N = 14,890 members ≥19 years of age (66% female), from four U.S. states. There were over 93,000 unique pharmacy claims with a monthly average of 6.3 per member. Males (M) and females (F) had similar averages (M = 6.2; F = 6.3), yet males were more likely to have ER (12.1% vs. 10.8%; p = 0.022) and H (8.3% vs. 6.3%; p < 0.0001). Unadjusted logistic regressions estimated the effect of medication claims on ER and H as OR = 1.14, p < 0.0001 and OR = 1.18, p < 0.0001, respectively. This implies 14% and 18% higher odds of ER or H, respectively, for every unit increase in monthly medications. Adjusting for age and gender does not substantially affect these results. CONCLUSION: Evaluating serious medical events in sub-populations taking multiple prescription medications provides important information for health insurers trying to reduce ER and hospitalizations. In a privately insured polypharmacy sub-population, there was a strong association with these safety events and increased average monthly pharmacy claims. Private insurers should consider establishing managed care programs to evaluate and improve the overall safety of their members taking higher numbers of monthly medications.

RELATIONSHIP OF DOCTOR SHOPPING AND POLYPHARMACY: A NATIONWIDE STUDY IN TAIWAN

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OBJECTIVE: The National Health Insurance (NHI) system in Taiwan is characterized by 1) free choice of physicians and health care facilities without formal referral; 2) generous drug benefits; and 3) low co-payments. The NHI beneficiaries thus exhibit features of frequent attendances, frequent changes of physicians, and a higher number of drug items in a prescription. It is interesting to know how likely a doctor shopper is to be a patient of polypharmacy. METHODS: The data sources came from the historical claims datasets of 200,000-person cohort in 2005, offered by the National Health Insurance Research Database in Taiwan. The analysis was limited to the ambulatory records with conditions of chronic diseases, represented by visits with more than seven days of drug supply. For those people with at least one visit for chronic diseases, the degree of correlation between the total number of consulted facilities and the total number of distinct prescribed drug items in all visits for chronic diseases in 2005 would be determined. RESULTS: Of the study cohort 56,956 people (30,070 females and 26,886 males; mean age 49.9 ± 19.9 [SD] years) had at least one visit for chronic diseases in 2005. On average, one of these people had paid 6.8 ± 7.0 (max. 98) visits, consulted 1.5 ± 0.9 (max. 32) facilities, and received 7.3 ± 7.3 (max. 93) distinct drug items for chronic diseases in a year. The total number of consulted facilities for chronic diseases in a year was strongly correlated with the total number of distinct prescribed drug items in all visits for chronic diseases in a year (Spearman’s rho 0.548, p < 0.001 [2-tailed]). CONCLUSION: More visits for chronic diseases at different facilities were related to more drugs prescribed. Besides the patients’ reasons, the causes inherent in the health care system deserve investigations.

THE EPIDEMIOLOGY AND OUTCOMES OF PATIENTS BY SERUM DIGOXIN LEVELS DURING HOSPITALIZATION

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OBJECTIVE: Dosing and therapeutic range of digoxin has recently changed based on results from clinical trials. We examined the epidemiology, mortality and length of stay (LOS) of patients with serum digoxin level results during hospitalization. METHODS: We retrospectively analyzed 4765 cases with serum digoxin levels from 2 institutions that electronically provided laboratory data from 2004–2006. Cases were stratified into the groups based on maximum serum digoxin level; <1.0, 1.0–2.0, 2.1–2.4, and >2.4. The actual to predicted hospital mortality and length of stay was compared across each strata with predicted mortality and LOS determined by previously described admission based clinical models. RESULTS: Approximately 3 in 5 cases (57.8%) had a serum digoxin level higher than the recommended range of <1.0. The crude mortality for cases with digoxin levels <1.0 was 4.1% and 9.1% for those with digoxin levels ≥ 1.0. After adjustment for severity of illness on admission cases with a digoxin level ≥ 1.0 had a significantly higher actual to predicted mortality ratio (1.3 [CI = 1.1–1.4]) than cases <1.0 (0.8 [0.7–1.0]). While crude LOS was higher for serum digoxin