amount. The achievement of budgetary targets was a qualifying (i.e., mandatory) criterion for incentive payments in 59% of PCTs, but considerable discretion was available. The therapeutic targets generally made sense and included the promotion of generics and the encouragement of appropriate prescribing of drugs that are widely used (e.g., antibacterials). The schemes also embodied different ways of assessing whether targets were achieved, some using an “all or nothing” assessment, others using a points system relating to the extent to which various targets were achieved. CONCLUSIONS: Prescribing incentive schemes currently used by PCTs in England offer modest financial incentives to GPs. Although the selection of prescribing targets generally makes sense, the qualifying criteria and methods of assessing target achievement are quite variable and non-specific. Whilst not providing strong incentives to GPs, they may make a contribution by signaling to prescribers which elements of prescribing are important.

**PHP24**

**GENERIC COMPETITION IN THE PHARMACEUTICAL INDUSTRY**

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**OBJECTIVES:** Generic competition has intensified in the U.S. prescription drug industry. We seek to understand the process of generic competition by developing a model for the determinants of generic entry, prices, and generics’ market share. **METHODS:** We develop a simultaneous equation estimation framework to examine the interaction among generic entry, prices, and market shares. The model is estimated on a panel data sample containing 40 brand name drugs that faced first generic competition during the period July 1992 through January 1998. The data period for each drug spans 36 months before and 36 months after generic entry. We use appropriate estimation method for panel data. **RESULTS:** We find that: 1) generic entry is positively related to pre-entry market size of the brand, but negatively influenced by the number and the market share of the generic incumbents, and the presence of entry-restricting conditions; 2) generics’ share is influenced positively by the number of generics and HMO coverage rate, but negatively by the generic-to-brand price ratio and the presence of entry-restricting conditions; 3) the generic-to-brand price ratio is larger in cases where entry-restricting conditions exist, but smaller where there are more generic competitors or where generics’ share is larger. Additionally, the generic-to-brand price ratio is lower for blockbuster drugs; and 4) on average, brand prices respond to generic entry—the inflation-adjusted rate of brand price change is found to be significantly lower after generic entry. Finally, we demonstrate the accuracy of our estimation model by predicting the out-of-sample experience of the drug Prozac (fluoxetine). **CONCLUSIONS:** Generic share influences and is influenced by price, while the number of generic entrants is a key determinant of generic share and generic-to-brand price ratio. Generic competition is found to be particularly intense for blockbuster drugs, which experience significantly more generic entrants, price erosion and generic penetration than other drugs.

**PHP25**

**DOES THE PAST PREDICT THE FUTURE?**

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Historical drug sales data are frequently used for formulary budget impact analyses of new pharmaceuticals. Growth projections are either empirical or based on simple linear regression calculations. Recent evidence indicates that the aggregate life cycle of pharmaceuticals approximates an “inverted U” distribution, however information about life cycle by therapeutic category is not available. **OBJECTIVES:** Determine functional data form to guide statistical modeling of the sales life cycle of pharmaceutical products, by therapeutic category. **METHODS:** Pharmaceutical sales data for 1992 to 2001 were obtained from IMS Canada and classified as to type (prescription, over the counter, diagnostic); formulation (tablets/capsules, injectable); release mechanism (regular, extended/sustained); compounding (single, multiple active drugs); research origin (branded, generic) and therapeutic category. Records meeting the following criteria were included in the initial analysis: prescription, branded, tablets/capsules, and single compounds. Using the date of first sale, the number of months on the market was calculated for each compound by calendar year. Sales data were adjusted for inflation using the Canadian consumer price index (1992 = 1.00) and expressed per 1000 population (2001 Canadian census). Detailed IMS therapeutic categories were consolidated into 59 categories. Linear regression and graphical examination focused on the ten top selling categories. **RESULTS:** For all drugs, linear regression explained only 3% of the variance in yearly sales and showed no significant difference by release mechanism. Graphical examination revealed two consistent trends: 1) A sharp rise in sales peaking at approximately 100 months followed by a slow decay and 2) three patterns of sales: a) 2–5 “super sellers”; b) 6–10 “above average sellers”; and c) the majority being average sellers. **CONCLUSIONS:** Drug sales are non-linear over time and are characterized by three distinct patterns. Future models will utilize non-linear techniques and incorporate number of branded compounds, number and timing of generic compounds and market share.