(OR = 1.18; 1.13–1.22), high chronic disease scores (CDS 10+: OR = 1.15; 1.10–1.20; CDS 5–9: OR = 1.13 (1.09–1.17). Previous use of gastroprotective agents, indicative of a history of gastropathy, was negatively associated with persistency: (OR = 0.92; 0.88–0.95). Age, gender, dosage at initiation, prescriber’s specialty, and income level did not influence persistency. CONCLUSION: Persistency beyond three months was higher for coxibs than for non-selective NSAIDs.

MESSAGES FOR THE HEALTH CARE INDUSTRY

FINANCING PHARMACEUTICAL R&D: THE ASSOCIATION WITH SALES
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OBJECTIVES: There is a long-standing debate over the theory that innovations (including innovative pharmaceuticals) are largely funded internally by companies. Supporters of this theory assert that R&D is financed internally from sales, while opponents argue that R&D investment is unrelated to sales. The objective of this study is to empirically test the internal funding theory for pharmaceutical R&D and suggest policy implications based on the results. METHODS: Data for US pharmaceutical sales, R&D expenditure, profitability (both series are for 1980 to 2001), and new chemical entity (NCE) sales (all NCEs approved from 1988 to 2001) are used in least squares time series regressions to explain variation in annual percent change in R&D expenditure. Log-log regressions are used to model the relationship of the dependent variable to percent change in annual US pharmaceutical sales and NCE 3-year future sales. A full model also is estimated. Linear-log models of percentage change in pharmaceutical sales are estimated for percent return on stockholders’ equity, percent 10-year return, and percent annual return. Series were tested for trends, and, where appropriate, sensitivity analyses were conducted on models. RESULTS: Empirical evidence from the analyses support the hypothesis that pharmaceutical R&D is internally funded from sales. The sales coefficient was estimated to be 1.2% (p < 0.001) and the coefficient for NCEs 3-year future sales was 0.4% (p < 0.001). When a full model is estimated with these variables, the coefficients were virtually unchanged and remained statistically significant. Coefficients for the profitability model were 0.09 for percent return on stockholders’ equity, 0.05 for 10-year return, and 0.04 for annual return. CONCLUSIONS: The importance of sales for funding pharmaceutical R&D is demonstrated. Policies detrimental to this relationship should be expected to cause a shift of R&D effort from the US or to reduce R&D investment in general.

LISTENING TO OUR CONSUMERS: THE PHARMACEUTICAL BRAND LOYALIST
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OBJECTIVE: Brand loyalty is an elusive, but sought after consumer attribute. Loyalty, however, is not clearly defined; especially for pharmaceuticals that have only recently been associated with their brands. METHODS: Brand loyalty was assessed from a national Health care survey, fielded June 2002 to 30,000 online U.S. adults. For this analysis, three conditions were chosen to represent a range of consumer types. Respondents (n = 7,209) were diagnosed and taking a prescription (Rx) for: depression (20% diagnosed, 51% Rx), gastrosophageal reflux disease (GERD, 10% diagnosed, 64% Rx), and/or high cholesterol (23% diagnosed, 53% Rx). Loyalty was evaluated by summing four Health care attitudes: would ask doctor for prescription; prescription advertising provides useful information; would ask doctor for specific medication; and insist that doctor give brand name medication. Responses were on a 5-point scale: 1 = strongly disagree and 5 = strongly agree. Final scores ranged from 4–20 (mean = 12, standard deviation = 2.8). Loyalty was then categorized as low (score 4–9) 18%, moderate (10–14) 65%, and high (15–20) 16%. RESULTS: Loyal consumers were younger, with more severe disease and comorbid illnesses. They sought information frequently and from more sources. Notably, loyal consumers requested medications more than three times more than those with low loyalty. Between 9–19% requested one of their high cholesterol, depression, or GERD medications. Requesters were more likely to be men. They had positive, proactive Health care attitudes and sought information from a variety of sources. Notably, consumers who requested medications remained on them up to six months longer. CONCLUSIONS: There is a small, but distinct group of pharmaceutical brand loyalists that is proactive and more likely to request prescription medications. Those who request medications trust doctors’ advice and stay on therapy longer. These are our target patients. They can be reached through doctors, the internet, and family and friends with the information they need to make sound Health care decisions.

A DEMONSTRATION OF THE USE OF BAYESIAN DECISION THEORY TO OPTIMISE DRUG DEVELOPMENT PROGRAMMES
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OBJECTIVES: To demonstrate the use of bayesian decision theory to establish optimal commercial drug development programmes. METHODS: A probabilistic model of a drug in development was used to estimate the expected net return of alternative development pro-