IMPACT OF A 90-DAY RETAIL PROGRAM ON PRESCRIPTION DRUG EXPENDITURES
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Advantage90™ allows patients to get maintenance medications in 90-day supplies from a network of retail pharmacies. Before the introduction of this program, medications in 90-day supplies can only be purchased through mail. OBJECTIVES: This study evaluated the impact of the program on prescription drug costs and generic utilization. METHODS: Using pre-post cohort study design, prescription records were obtained from Walgreens Health Initiatives’ pharmacy claims database. For the purpose of this study, specialty drugs were excluded. Clients were selected if they had 3-tier formulary design and no mandatory mail program, were rebate-eligible and continuously enrolled. The study group comprised of 236,950 eligible lives from 17 clients enrolled in Advantage90™ during January 1, 2004 and May 1, 2004, and the control group included 282,116 lives from 84 clients not enrolled in the program. The pre and post periods were defined as 8 months from the enrollment date. Per member per month (PMPM) total costs and generic utilization were analysed. RESULTS: There were no statistically significant difference between the study and control group in terms of client type, client region, and whether clients were enrolled in the retrospective drug utilization review and other clinical programs. The pre to post period, in Advantage90™ group, PMPM total costs and the percentage of generic utilization among eligible members increased by 1.93% (from $32.57 to $33.20) and 9.5% (from 40.1% to 43.9%). In the control group, PMPM total costs and the percentage of generic drug utilization increased by 5.62% (from $36.30 to $38.34) and 7.9% (from 39.3% to 42.4%). Advantage90™ was estimated to have resulted in a PMPM total cost savings of $1.20. CONCLUSIONS: A 90-day retail program like Advantage90™ led to decreases in PMPM total costs and increases in generic utilization on maintenance medications and can be an effective option to lower drug costs.

SOCIAL AND ECONOMIC FACTORS AFFECTING INTENTIONAL PRESCRIPTION DRUG NON-COMPLIANCE AMONG NOVA SCOTIA SENIORS
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OBJECTIVES: To examine patterns of intentional prescription drug non-compliance among seniors in Nova Scotia, Canada, with special attention paid to social and economic factors. METHODS: A survey was administered to 424 members of local seniors’ groups that were selected to ensure representation from every county in Nova Scotia. The survey included sections on health status, drug use, a battery of questions on non-compliance, attitudes towards drug use-related issues and policies, and background information. Bivariate and multivariate statistical techniques were employed, including factor analysis of the non-compliance items. The quantitative analysis was supported by qualitative data from intensive interviews with 20 individual seniors. RESULTS: About one-quarter of the sample had intentionally not followed a drug prescription in the past year. Factor analysis revealed two distinct types of non-compliance, one related to not filling or refilling a prescription, and the other to adjusting or stretching a prescription. Income, and variables related to marital status exerted direct effects on non-compliance. Importantly, among those of lower income, seniors who were not living with their spouses were much more likely to intentionally not comply. There were also gender differences in the relationship among social factors, economic factors and non-compliance. The qualitative data supported the general finding that some seniors are adamant about taking control of their own health, including making decisions not to follow a doctor’s prescription. CONCLUSIONS: In a province with a government-subsidized seniors drug care program, a substantial minority of seniors intentionally decided not to comply with a drug prescription. Social factors, economic factors and gender were found to interact in a complex way to affect intentional non-compliance. Among some respondents, non-compliance is related to attempts to take more control over their own health.
funded programs like Medicaid. Objective of this study was to review published studies that evaluate the impact of Medicaid formularies, and to assess the perspective that was adopted for such evaluations. METHODS: Searches were performed in several scientific and business databases along with other relevant health policy journals and websites. The search strategy involved an incremental focus using a tiered approach, narrowing search returns down to the specific inclusion criteria with multiple combinations of search terms. Selected articles were reviewed to assess the perspective adopted based on key measurement parameters used in evaluation of the impact. RESULTS: Twenty studies were selected for the review. All studies used a pre-post or a time-series research design. Three studies utilized pooled multi-state data, two studies included a second state’s Medicaid population as a control group, and the remaining were studies of single state Medicaid populations. All studies evaluated direct impacts of a formulary strategy on drug and program costs. Three studies additionally investigated broader second order effects on physician, outpatient and hospital utilization. None of the evaluations included estimates of indirect costs related to the positive or negative impact of formularies on morbidity, mortality and consequent productivity of Medicaid beneficiaries. Therefore, the true impact of formularies in these evaluations remain unclear. CONCLUSION: Findings of the literature review of Medicaid formulary evaluations suggest that such a societal perspective has not been widely adopted, and can be a valuable option for future evaluations.

**PHP15**

**PHARMACOECONOMIC EDUCATION AT MEDICAL SCHOOLS IN TURKEY**

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**OBJECTIVE:** There is an increasing interest in pharmacoeconomics among physicians. However, as can be seen from multiple examples, the concept is prone for abuse and misuse. In this study we evaluated the curriculum of the Turkish medical schools. We looked at whether they have any formal pharmacoeconomic lectures or they are planning on introducing pharmacoeconomics lectures within the pharmacology, clinical pharmacology or other courses. METHODS: A questionnaire was prepared to evaluate the pharmacoeconomics education at 35 Medical Schools in Turkey. We got in contact with the head of the Pharmacology Departments either by phone or by face to face interviews. The questionnaire was composed of questions regarding the presence of pharmacoeconomics lectures; i.e. if already in curriculum, at which year, and for how many hours. If no pharmacoeconomics lecture exists, is there any intention of including it in the curriculum. RESULTS: We got replies from 27 (77%) of the Pharmacology Departments. Pharmacoeconomy lecture is currently given only at two universities (Ankara, Ataturk). All but two of the other departments communicated that pharmacoeconomics lectures will be given in the future. CONCLUSION: Pharmacoeconomics is an important part of clinical pharmacology. However the concept is not part of the medical school curriculum in most universities. There is a trend towards giving pharmacoeconomics classes at fourth or fifth year within clinical pharmacology lectures. Even though most of the pharmacology departments informed that they are going to include pharmacoeconomics into the curriculum, currently practicing physicians lack the necessary knowledge. In our opinion, in addition to the inclusion of pharmacoeconomics in the medical school curriculums, special programs are also required for physicians who had not had a formal pharmacoeconomic course during their undergraduate education. There is an increasing responsibility for pharmacology/clinical pharmacology departments to take a role in such programs.

**PHP16**

**ADVERTISING IN RESPONSE TO NEW PRODUCT ENTRY: AN EXAMINATION OF THE STRATEGIC ROLE OF PHARMACEUTICAL ADVERTISING ON MARKET COMPETITION**

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**OBJECTIVE:** Industrial organization economics theory suggested firms may over- or under-advertise to deter or accommodate entry depending on how advertising affects the profits of competitors, and if the competing products are strategic substitutes or complements. The objective of this study was to determine if this theory holds for pharmaceutical products. Such information would increase policy makers’ understanding of how advertising affects competition when considering advertising regulations. METHODS: Data on products for eight therapy areas (asthma, migraine, obesity, Parkinson’s disease, seizure, depression, dyslipidemia, and gastric and duodenal ulcer) from January, 1995 to December, 2001 were analyzed on a quarterly basis. Multivariate analyses were performed to examine the strategic relationship between advertising expenditures and product sales. Changes in an existing product’s advertising expenditure in the period after new product entry were examined using time-disease fixed-effects regression, by controlling for the type of new entrants (the presence of creative entrants, uncreative entrants or both in the same period), patent life, and market share. Creative entrants were new products with novel pharmacological mechanisms of action that were different from that of existing products. Uncreative entrants included me-too drugs and generic products. Advertising expenditure and sales data were obtained from Scott-Levin Market Research Audit. Patent and product entry information were from published references. RESULTS: Multivariate analyses showed competing pharmaceutical products were strategic complements and sales of new entrants increased with existing product’s advertising expenditure, although these relationships were not statistically significant. There were no statistically significant changes in advertising expenditure in response to any types of new product entry. CONCLUSION: The strategic effect of advertising on market competitiveness was weak and not significant. No evidence was found that pharmaceutical firms would use advertising as a strategic tool to deter or accommodate entry. These results did not support regulating pharmaceutical advertising based on anticompetitive grounds.

**PHP17**

**MODELING THE COST AND UTILIZATION OF MAIL ORDER VS. COMMUNITY PHARMACY IN A MEDICAID POPULATION**

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**OBJECTIVES:** To model the effect of mail order vs. community pharmacy on drug utilization and drug product cost in a Medicaid population. METHODS: Drug treatments initiated between August, 2000 and July, 2001 were retrieved. Drug treatments with at least two claims and 60 days of supply, and an adherence ratio of 0.5 were included in the study. In the baseline scenario, utilization in mail order was modeled using the utilization in community pharmacy, and assuming that the first prescription was dispensed in community pharmacy, and successive prescriptions were dispensed as 90-day supply in mail