Payment (BHP) and Health Care Expenditure (HCE) were more precise measurements of equity in health care finance and utilization, respectively. The BHP was defined as the ratio of the sum of the premium and out-of-pocket spending to disposable income. We used the 1992–2002 data to examine the following hypotheses at the individual level, categorized into five income quintiles: Hypothesis 1: Equity in BHP and HCE improves after having the NHI program. Hypothesis 2: Equity in BHP and HCE deteriorates with recession. We categorized the data into five income quintiles. RESULTS: This study confirms the two hypotheses. NHI can narrow the disparity in medical care equity, but recession can widen it. We found that the BHP was regressive, while the HCE for the poorest is significantly higher than that for the others. We also found that the recession of 2001 had a significantly greater impact on the poor versus the rich quintile. In conclusion, NHI reform is still an unfinished job. CONCLUSIONS: The resource allocations need to be rearranged whenever a recession occurs.

**PHP1**

**ESTIMATING THE ABILITY-TO-PAY FOR HEALTH CARE EXPENDITURES RISING FASTER THAN GDP: AN INTERNATIONAL PERSPECTIVE COMPARING THE USA AND GERMANY**

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There is widespread concern over the ability to pay for (“affordability of”) total health care expenditures (THE) rising faster than gross domestic product (GDP). Current predictions of future health spending trends suggest, for the U.S. and Germany alike, that THE growth may exceed GDP growth rates by up to two-percentage points. OBJECTIVE: To estimate, from a macro-economic perspective, the extent of future ability to pay, in the United States and Germany, for THE growth outpacing GDP growth by two percentage points and its sensitivity to assumed economic growth rates. METHODS: We assumed the upper limit of “ability to pay” to be reached once the increase of THE would fully absorb the growth of GDP, i.e., when non-health spending would stagnate or commence to decline. Using a mathematical model based on this incremental definition of “affordability”, we conducted one-way and two-way sensitivity analyses to examine the relationship between “affordable” THE and GDP growth. RESULTS: Under a base case assumption of real per-capita GDP growth rates of 1.2 percent per year, both economies (U.S. and Germany) could afford a two-percentage-point gap between THE and GDP for the next several decades (United States: beyond 2050; Germany: beyond 2060). Two-way sensitivity analysis revealed that higher GDP growth rates resulted in slight increases of this time span only, whereas the time of affordable THE growth exhibited high and asymmetric sensitivity to lower rates of real per-capita GDP growth. CONCLUSION: Under the assumption of real per-capita GDP growth rates above one percent annually, societal willingness to pay, not ability to pay, will determine the extent of future THE growth. Future funding of health care will be determined by distributive aspects and the value of health (care), not “affordability”.

**PHP12**

**FACTORS AFFECTING CONSUMER VIEWS REGARDING GENERIC DRUG SUBSTITUTION PRACTICES: AN EFFECTIVE TOOL TO MANAGE HEALTH CARE COST**

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OBJECTIVES: Consumer opinions are important to increase use of less expensive generic drugs. The objective of this study was to examine factors that may affect consumer perceptions regarding generic drug substitution practices. METHODS: Data were collected from consumers filling prescriptions at 10 Walgreen stores situated around Houston (N = 1000) by administering a survey. Factors such as prior drug purchase behavior and role of pharmacists were measured using four items on a 5-point scale where 1 = never and 5 = always. Consumer perception about generic drugs was measured using a semantic differential scale. A 5-point Likert scale was used to evaluate their perception regarding drug substitution practices. Demographic data such as age, gender, education and income were collected and analyzed to perform descriptive and correlation analyses. RESULTS: A total of 305 completed surveys were analyzed. The mean age was (42.63 ± 13.8) years with 90.51% being enrolled in the health plan. Majority were female (62.02%) and fulltime employees (61.9%). Respondents had a positive attitude towards generic drugs (3.84 ± 0.89) and drug substitution practices (3.74 ± 0.79). The correlation analysis indicated a positive correlation between consumers’ perception regarding drug substitution practices and prior use of prescription (r = 0.49, p < 0.05) and non-prescription drugs (r = 0.28, p < 0.05). Although half of the participants (54%) indicated that they never refused their pharmacists for substituting with a generic drug, only 11.20% of the participants indicated being always asked by their pharmacists for such substitution. CONCLUSIONS: Consumers’ positive perceptions towards generic drug and generic drug substitution practices could help drug management strategies by managed care organizations to reduce health care costs. Pharmacists may need to be provided incentives to actively promote generic substitution to consumers.

**PHP13**

**WHO BENEFITS FROM OVER-THE-COUNTER (OTC) MEDICATION COVERAGE IN A STATE MEDICAID PROGRAM?**

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OBJECTIVE: Texas, compared to many other state Medicaid programs, provides relatively unrestricted coverage of OTC medications that are prescribed by a physician to non-institutionalized clients. We conducted a descriptive analysis to investigate utilization and payment trends for this class of drugs. METHODS: A retrospective analysis of Texas Medicaid paid prescription claims for OTC medications dispensed during the first three months of 2003 for Fee-For-Service and Primary Care Case Management clients was conducted. All OTC products were included in the analyses, with the exception of insulin products, and syringes. The association of a claim for an OTC medication as a result of an actual physician visit was also assessed. RESULTS: During the study period, there were a total of 609,185 OTC prescription claims (7.1% of total claims) accounting for $5.1 million in Texas Medicaid payments (1.1% of total pharmacy program payments). The average payment per OTC claim was $8.44. Acetaminophen and oral liquid electrolytes, alone, accounted for 50.4% of all claims and 59.8% of all payments. Children aged two years or less accounted for 50.1% of all OTC medications dispensed and 49.1% of all OTC payments. A total of 8.8% of all eligible clients aged 18 and under had at least one paid OTC claim during January 2003. Pediatricians, alone, prescribed 50.3% of all OTC medications. We found that 71.1% of the OTC claims were the result of an actual physician office visit. In addition, 84.3% of pharmacy visits for OTC claims also had a claim for a prescription-only
product during the same visit. CONCLUSION: Expenditures for OTC medications within the Texas Medicaid Pharmacy Program accounted for 1.1% of total program payments. Clients under the age of 18, especially infants, are the largest beneficiary group of OTC medication coverage within the Texas Medicaid Program.

**PHP14**

**ADDITION OF PHARMACY COST DATA IMPROVES PERFORMANCE OF THE ADJUSTED CLINICAL GROUPS PREDICTIVE MODEL FOR TOTAL HEALTH CARE COSTS OVERALL AND WITHIN DISEASE SPECIFIC GROUPS**

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**OBJECTIVE:** To determine the effect of adding the pharmacy cost data option to the Adjusted Clinical Groups Predictive Model (ACG-PM) when estimating future total health care costs.

**METHODS:** Longitudinal analysis using medical and pharmacy claims data from a large state employer over a 2-year period (baseline May 1, 2001—April 30, 2002; follow-up May 1, 2002—April 30, 2003). Continuously eligible subjects <65 years old at the end of the study period were selected. The total cost Predictive Resource Index from the Johns Hopkins ACG System Version 6.0 was used to predict inflation-adjusted follow-up year total costs per member (medical plus pharmacy) using baseline demographic and diagnosis information, with and without including total pharmacy cost data. Results were compared to actual follow-up year total costs by grouping actual and predicted costs ($0; $1–$1,000; $1,001–$5,000; $5,001–$10,000; >$10,000) and comparing the positive predictive value (PPV) within each cost grouping. Sensitivity and specificity were also individually examined. Analyses were additionally conducted within disease-specific subgroups, including diabetes, depression, asthma, and cardiovascular disease. RESULTS: In the baseline year, approximately 70% and 75% of the 344,834 included subjects used medical and pharmacy services, respectively. Baseline total cost averaged $2,665 (median: $621) and pharmacy cost averaged $640 (median: $167). Follow-up mean total actual cost was $3,193 (median: $748) and mean ACG-PM predicted costs were $2,789 from both models without and with pharmacy costs (respective medians: $1,638; $1,635). Including pharmacy costs in the model increased the PPV, especially at high-cost groups: 40.77% to 48.74% (+7.97%) at >$10,000 and 23.97% to 28.18% (+4.21%) at $5,001–$10,000. PPVs were higher within disease-specific subgroups and increased with inclusion of pharmacy costs, with the highest PPVs in the depression cohort (>10,000: 51.31% [without pharmacy costs]) to 58.92% (with pharmacy costs); $5,000–$10,000: 29.92% to 35.31%). CONCLUSIONS: Addition of pharmacy cost data to the ACG-PM results in more accurate identification of future total health care costs, especially among high-cost members.

**PHP15**

**INCLUDING CARER UTILITY IN ECONOMIC EVALUATIONS: A PRELIMINARY ANALYSIS OF THE IMPLICATIONS FOR FUNDING THRESHOLDS**

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**OBJECTIVES:** Washington Panel and UK NICE guidelines propose that the health affects of patient care on their carers should be included within the denominator of cost-utility analyses. The impact of patient disability on carers has been demonstrated by directly measuring the quality of life (QoL) of carers in specific patient populations with substantial informal care needs. However, it is possible that a general relationship between patient and carer quality of life exists, whereby any improvements in patient QoL are mirrored by improvements in carer QoL. If such a general relationship does exist, any intervention that generates additional patient quality adjusted life years (QALYs) will also generate additional carer QALYs. We investigated whether a general relationship between patient and carer QoL exists using the Health Outcomes Data Repository (HODAr). METHODS: Using a sample of 15,113 patients we estimated the relationship between utility and time away from normal activities for patients, along with the relationship between patient utility and carer time spent helping patients. For any given patient utility we can then predict carer time, and assuming that this has the same impact on well-being as time away from normal activities has on patients, predict carer utility. RESULTS: A simple relationship shows that a reduction in utility of 0.10 was associated with a 0.017 reduction in carer utility (i.e. QALY gains are increased by 17%). More complex models looked at the type of disabilities that were associated with greater or lesser carer effects. CONCLUSION: This work is preliminary, but points to the possibility of a general relationship between patient and carer QoL. Additional research is required that directly measures carer QoL, and identifies whether it was influenced by the general health of the patient or specific disabilities. Any widespread effect may have a profound effect on the future funding decisions.

**PHP16**

**FAMILIES, FRIENDS AND COST-EFFECTIVENESS ANALYSIS**

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**OBJECTIVE:** To study the effects of improvement in patients’ health on the welfare of their family members and its implications to medical cost-effectiveness analysis. METHODS: We use a theoretical model based on a family utility function with altruistic linkages to show that there can be direct and indirect welfare effects to all family members. Using the SEER-Medicare database we test the predictions of our model by studying treatment choice of prostate cancer patient by age and marital statues. RESULTS: The theoretical model suggests that a health intervention has both the traditional direct effects on the patient, and spillover effects on the family. In a 2-person household, the spillover effect is first the average change in QOL of the spouse multiplied second by the probability that the patient remains married at all future time periods. The magnitude and direction of the first component is based on a tradeoff between positive spillover effects due to treatment related survival and QOL benefits to the patient and negative spillover effects due to side effects of treatment. Treatments for clinically localized prostate cancer present such tradeoffs with positive spillover effects to the spouse dominating for patients aged 60–70 years and vice versa for older patients. Since the second component differs between married and unmarried patients between these two age ranges, we are able to test our theory by studying differences in treatment choice between married and unmarried patients by age. After controlling for clinical characteristics and patient demographics, we find that the proportion of married patients 60–70 years of age who choose aggressive treatments for prostate cancer is significantly greater than the corresponding proportion of unmarried patients. This pattern reverses at higher ages of the patient. CONCLUSIONS: We conclude that cost-effectiveness analyses may better reflect the full costs and benefits of medical interventions if they incorporate these family effects.