The following poster presentations have been prepared for the Academy of Managed Care Pharmacy’s 14th Annual Meeting & Showcase, April 3–6, 2002, in Salt Lake City, Utah.

For more information about the studies described below, please contact the corresponding authors, indicated by an asterisk (*), whose addresses are listed in full. The names of individuals who are scheduled to present at the meeting are underlined.

**Effect of Pharmacist Intervention and Patient Education on Lipid-Lowering Medication Compliance and Plasma Cholesterol Levels**

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**INTRODUCTION:** The impact of a community pharmacist, pilot disease management program was determined on both patient compliance to lipid-lowering therapy and on serum cholesterol levels.

**METHODS:** A total of 149 individuals in the province of Quebec (Canada) who were not adhering to prescribed hypolipidemic drug regimens were recruited for this 6-month prospective study; each subject served as his own control. Patients were educated by pharmacists on the nature of lipid disorders, on the benefit of treatment compliance, and about lifestyle modifications in reducing the risk for coronary heart disease. To promote treatment compliance, pharmacists followed up by telephone with participants at 2-month intervals. Drug renewal rates were monitored throughout the study and plasma lipid levels were measured. Before- and after-intervention values for study parameters were compared.

**RESULTS:** Results showed that the pharmacist-intervention and patient-education program significantly increased medication compliance, demonstrated by a 21.7% (P<0.001) improvement in the average number of days to prescription renewal and a 15.3% (P<0.05) increase in compliant patients. Concurrently, levels of total cholesterol, low-density lipoprotein (LDL) cholesterol, and triglycerides were reduced by 6%, 8.5%, and 16.2% (P<0.001, 0.01, 0.01), respectively. High density lipoprotein (HDL) cholesterol remained relatively unchanged (+0.7%) so that the LDL-to-HDL ratio was bettered by 17.2% overall (P<0.01). Almost all patients (99.2%) were satisfied with the program and expressed a willingness to pay an average Cdn $34.50 per 30-minute consultation for the pharmacist services offered.

**CONCLUSION:** Pharmacists can contribute significantly to improving the management of dyslipidemic individuals.

**LEARNING OBJECTIVES:**

1. Learn about the benefits associated with a community pharmacist disease management program.
2. Understand the effect on compliance resulting from the pharmacist disease management program.
3. Learn about the impact of the pharmacist disease management program on lipid levels.
4. Learn about patient satisfaction with the pharmacist disease management program.

**Interventions to Manage Utilization of Sustained-Release Oxycodone**

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**INTRODUCTION:** To describe interventions performed to decrease inappropriate use and improve cost effectiveness related to sustained-release oxycodone use.

**METHODS:** A 300,000-member commercial and Medicare managed care organization implemented a maximum dispense limit of $1,000 per prescription to capture potential misuse of medications including sustained-release oxycodone (Oxycontin). In addition, a query was performed in May 2001 and the top 22 Oxycontin users were identified and their charts were reviewed. Diagnosis and health plan recommendations were recorded. Per-member-per-month (PMPM) costs from May to September 2001 and daily consumption (DACON) were calculated (average quantity divided by average day supply).

**RESULTS:** Diagnoses were 16 back pain, 3 sickle cell, 2 cancer, 1 neuropathic pain. Recommendations for back pain included physical therapy and NSAID recommendations, 3 referred for detoxification, 1 referred to a pain specialist, 1 forgery, 2 others; neuropathic pain switched to methadone; cancer patients and sickle cell patients required no action. May DACON and oxycodone PMPM were 2.6 and $0.85, respectively. September comparison of 2.5 and $0.70 showed substantial cost savings.

**CONCLUSIONS:** By evaluating the diagnoses and making recommendations on this group of Oxycontin patients, the Health Plan was able to save $47,973.

**LEARNING OBJECTIVES:** Audience participants will:

1. Identify common diagnoses associated with the use of sustained release oxycodone.
2. List interventions to reduce the utilization of sustained release oxycodone.
3. Identify cost savings associated with implementing clinical interventions to reduce the utilization of oxycodone.

**Hyperlipidemia Management in Managed Care**

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**INTRODUCTION:** The National Cholesterol Education Program (NCEP) recommends both a population-based approach and a high-risk approach to reduce blood cholesterol levels in the U.S. population. To our knowledge, the extent to which NCEP Adult Treatment Panel III (ATP III) guidelines are being met in managed care has not been reported.

**METHODS:** As part of a quality initiative, we reviewed the charts of 2,828 managed care enrollees with hyperlipidemia from 2/12/01 to 8/15/01 and collected data on patient demographics, CHD risk factors, common comorbidities, and lipid management. We highlight the characteristics of this population and identify areas of potential improve-
Breast Cancer (MBC) and Colorectal Cancer (CRC) in Managed Care

1. Review NCEP ATP III guidelines as they apply to the management of hyperlipidemic patients.

RESULTS: Approximately 37% of patients had existing CHD or CHD risk equivalents requiring an LDL goal of <100 mg/dl. 16.6% of patients had multiple risk factors requiring an LDL goal of <130 mg/dl and 46% had no or one risk factor requiring an LDL goal of <160 mg/dl. Of patients with documentation of follow-up LDL (n = 2,167), approximately 68% met NCEP LDL goal. Twenty-three percent of the patients with follow-up LDL require further mild to moderate (0-25%) reduction of LDL to achieve NCEP goal.

CONCLUSIONS: Due to NCEP ATP III guidelines, more patients will require more aggressive therapy to achieve goal. Future strategies to achieve this may include the use of combination therapy of statins with bile acid sequestrants, nicotinic acid, or fibrates as stated in NCEP ATP III guidelines.

LEARNING OBJECTIVES: Audience participants will:
1. Review NCEP ATP III guidelines as they apply to the management of hyperlipidemic patients.
2. Discuss the epidemiology of CHD in the general U.S. population and highlight the demographic and clinical characteristics of this population in the managed care setting.
3. Suggest areas of improvement and discuss potential methods to achieve quality improvement in the management of hyperlipidemia in managed care organizations.

Clinical and Economic Outcomes Associated with Metastatic Breast Cancer (MBC) and Colorectal Cancer (CRC) in Managed Care Populations: Capecitabine vs Comparator Therapies

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OBJECTIVE: To examine treatment outcomes and cost advantages in MBC and CRC with a new oral chemotherapy.

METHODS: A retrospective, cohort-matched study design was used to abstract patient records from a managed care disease management database. In MBC, 100 capecitabine patients were matched to 100 comparator therapy patients subsequent to taxane treatment. Similarly, 78 CRC patients treated with capecitabine were matched to 193 comparator therapy patients treated with 5-FU +/- irinotecan. Treatment duration and survival were determined. Furthermore, the total direct cost of cancer care was captured through medical and pharmacy reimbursement claims. Cost-effectiveness was calculated for all groups.

RESULTS: The median survival was similar between the two MBC treatment groups (623 days for capecitabine vs. 572 days for control) but superior for capecitabine in CRC treatment groups (599 days for capecitabine vs. 530 days for control, p=0.05). Based on all enrollees, the total direct cost of cancer care per patient was lower for capecitabine than for comparator therapies in both MBC ($9,837 vs. $11,552) and CRC populations ($6,007 vs. $13,339). The average cost per patient for chemotherapy plus supportive care, including adverse events, was lower for capecitabine than for comparator therapies in both MBC ($4,766 vs. $6,598) and CRC populations ($3,264 vs. $4,240). Furthermore, the average cost per day of effectiveness for capecitabine was 40% to 45% less than comparator therapies for both MBC ($101 vs. $185) and CRC populations ($76 vs. $128).

CONCLUSION: Based on the calculations of cost per day of effectiveness, oral capecitabine offers promising economic advantages while preserving clinical outcomes.

LEARNING OBJECTIVES: Audience participants will:
1. Understand how the clinical benefits of oral capecitabine versus comparator therapies are converted into economic benefits.
2. Recognize the amount of potential cost savings offered by oral capecitabine in a managed care population.
3. Understand the utilization and cost patterns for patients by tumor type and cohort.

Utilization of Angiotensin-II Receptor Antagonists in a Managed Care Pharmacy Setting

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INTRODUCTION: Given the recommendations of JNC VI, and the active marketplace for antihypertensive medications, it might be presumed that step-therapies or prior authorization would attenuate the utilization of angiotensin-II receptor antagonists (ARBs) especially in treatment naïve patients. To test this hypothesis the patterns and utilization trends of ARBs in various managed care settings were analyzed through retrospective analyses.

METHODS: Pharmacy claims from 1/1/99 through 12/31/00 were reviewed to identify the demographics, utilization, persistence, and switching involved with new ARB patients. Additionally, concomitant medication use and inferred comorbid conditions of CHF, diabetes, and hypercholesterolemia were assessed.

RESULTS: We identified 29,223 patients who initiated ARB therapy in 1999 and 2000 and met our pre-determined screening criteria. Hypertensive treatment-naïve patients constituted 12,587/29,223 (44%) of new starts on an ARB agent. Of all new ARB starts, 25% received an ARB-hydrochlorothiazide combination product as their first prescription. Highest use of ARBs was found in HMO plans with an open formulary. Average persistence for all ARB patients averaged 7 months of therapy. There was minimal switching among ARB products and little dose titration. The data indicated 18,703/29,223 (64%) of patients had multiple medical conditions.

CONCLUSIONS: The use of ARB agents as initial hypertensive therapy in managed care patients appeared to be less inhibited than expected. The typical new ARB patient is generally compliant in taking ARB medication, and rarely switches to other ARB therapy.

LEARNING OBJECTIVES: Audience participants will:
1. Describe the relative distribution of ARB naïve patients in terms of their previous antihypertensive therapy.
2. Discuss prevalence of use and utilization patterns of ARB agents in different plan and formulary types.
3. Identify the distribution of three inferred comorbid conditions in new ARB patients by tumor type and plan type.

Evaluation of Treatment Patterns in Patients Initiated on Antidepressant Therapy

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INTRODUCTION: A retrospective analysis of a managed care organization database was performed to determine if differences in treatment completion rates and other treatment patterns existed between patients initiated on specific antidepressant medications.

Audience participants will:
1. Understand how the clinical benefits of oral capecitabine versus comparator therapies are converted into economic benefits.
2. Recognize the amount of potential cost savings offered by oral capecitabine in a managed care population.
3. Understand the utilization and cost patterns for patients by tumor type and cohort.
METHODS: All patients 18-65 years old newly started on an antidepressant medication between January 1 and September 30, 1999, were placed into one of six cohorts. Cohorts included fluoxetine, citalopram, paroxetine, sertraline, the tricyclic antidepressants (TCA), and other select antidepressants. Analyses were performed to identify differences in treatment and utilization patterns, with the primary outcome being percentage of patients completing six months of therapy. All comparisons were made to fluoxetine.

RESULTS: A total of 1,268 patients were included. All cohorts had similar baseline demographics. The citalopram cohort had the highest six-month completion rate (24.4%), and TCA had the lowest (1.9%). Only the TCA cohort was significantly different from fluoxetine, 19.3% (p<.001). At least 9% of patients in each cohort had a treatment switch, with no significant differences from fluoxetine. The TCA cohort had a significantly higher use of outpatient visits, 80 visits per 100 members per month, compared to fluoxetine, 59 visits per 100 members per month (p=.001). Only 1.2% of all patients had at least three follow-up visits with a practitioner within 120 days of their first prescription.

CONCLUSIONS: All cohorts had a low percentage of patients receiving an adequate duration of antidepressant therapy. Understanding reasons for lack of persistence with treatment and follow-up care may help determine appropriate interventions to improve patient outcomes.

LEARNING OBJECTIVES: Audience participants will:
1. Recognize differences in treatment completion rates among different antidepressant medications.
2. Describe how use of different antidepressant medications may affect health care utilization.
3. Describe the utility of administrative claims database analyses for developing future quality improvement programs.

Implementation and Evaluation of a Lipid Telemanagement Program

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OBJECTIVES: To monitor and optimize dyslipidemia management in a high risk cardiac population via a lipid telemanagement program (LTP) at Lovelace Cardiology Department.

METHODS: Over 300 patients, post MI or revascularization, have been enrolled in the program. Patient follow-up and treatment was directed through telephone and written communications. Patients received information on lipid goals, diet, medication adherence, and other cardiac risk factor modification. To evaluate LTP effectiveness, demographics, lipid levels, and medications were examined in 170 LTP patients who were continuously enrolled health plan members for the year 2000, and compared with a matched control group.

RESULTS: Significantly more LTP patients had a lipid test done in the year 2000 than the control group (94.1% vs. 71.2%). Significantly more LTP patients had LDL levels lower than 130 mg/dL (74.7% vs. 50.6%) and lower than 100 mg/dL (51.2% vs. 18.2%). Of LTP patients with initial LDL levels higher than 130 mg/dL (61.0% LTP vs. 43.2% control), significantly more LTP than control patients had subsequent LDL lower than 100 mg/dL (52.6% vs. 24.4%). Of those patients with a medication fill within an 18-month period, significantly more LTP than control patients had one or more fills for a lipid lowering medication (92.7% vs. 54.8%).

CONCLUSIONS: A successful Lipid Telemanagement Program was developed and implemented by a multi-disciplinary team, including cardiologists, nurses, and pharmacists. A pharmacy-driven Multidisciplinary Secondary Prevention Lipid Clinic is now under development based on this pilot program.

LEARNING OBJECTIVES: Audience participants will:
1. Describe the process used in the Lipid Telemanagement Program.
2. Identify the measures used to evaluate the program.
3. Learn the integral role of the pharmacist in the Lipid Telemanagement Program.

Treating Hypertension in Patients with Co-morbidities: Physician Practice Patterns

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BACKGROUND: In the US, the NCHES III data indicate that 47% of individuals with hypertension (HTN) are not on therapy, 24% are inadequately treated, and only 24% of all hypertensive individuals are controlled to <140/90 mmHg. Additionally, co-morbidities are highly prevalent. This survey was initiated to assess current practice patterns and beliefs of physicians practicing hypertensive care.

METHODS: 403 U.S. physicians were asked to complete an 11-item questionnaire on their practice patterns for patients with general HTN and HTN with co-morbidities.

RESULTS: When physicians were asked what the most important factor was causing lack of BP control in treated hypertensives, 29% responded inadequate efficacy of current therapeutic choices and 44.5% responded physician apathy. When questioned on what BP measurement correlated the best with risk of end-organ damage in a 60-year-old man, 43.6% of physicians believed that pulse pressure did and 29% believed ambulatory SBP was most important. Regarding routine first-line therapy for hypertensive patients with type 2 diabetes, 93% of physicians were in accordance with the JNC VI guidelines and responded that they used ACEIs as first line therapy.

CONCLUSIONS: This cross-sectional study of US physicians indicates that some physicians find that current medications are inadequate in treating hypertension and that physician apathy plays an important role as well. This indicates a potentially strong role for pharmacists to intercede and influence prescribing patterns.

LEARNING OBJECTIVES: Audience participants will:
1. Increase their awareness of the unmet clinical need in hypertension treatment for patients with co-morbidities.
2. Better appreciate current physician patterns for hypertensive patients with co-morbidities.
3. Learn potential reasons for inadequate control in patients with hypertension and co-morbidities.

Treating Isolated Systolic Hypertension: Physician Practice Patterns in a Primary Care Setting

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HYPOTHESIS: Isolated systolic hypertension (ISH) was the most
prevalent subtype of uncontrolled hypertension (HTN) in the US based on the NHANES III survey. Despite national guidelines, we hypothesized that ISH remains under-diagnosed and under-treated, and that physician treatment practices differ for middle-aged and elderly patients.

METHODS: A medical record review was conducted to determine the prevalence of ISH (SBP>140 mm Hg and DBP>90 mm Hg) among patients >50 years in a multi-specialty provider group. Two age-stratified random samples of ambulatory medical records were abstracted (393 patients, >65 years; 251 patients, 50-64 years). All 35 primary care providers were surveyed to explore practice patterns (response rate 89%).

RESULTS: Among elderly subjects, ISH prevalence was 28.7%, representing the majority (76%) of patients with elevated blood pressure (SBP>140 mm Hg and/or DBP>90 mm Hg). A diagnosis of hypertension was absent in 37% of these cases. ISH prevalence was 12.3% among middle-aged subjects, representing 45% of patients with elevated blood pressure, 58% of these patients had no hypertension diagnosis. Examining both ISH groups, 72% received <1 antihypertensive medication. Comparing treatment preferences across age groups, more physicians responded they would initiate treatment at an SBP of 140 mm Hg (52% vs. 23%, P<0.005) and treat to an SBP goal of 140 mm Hg (90%) vs. 65%, P<0.05) in middle-aged and elderly patients with ISH.

CONCLUSIONS: ISH is common in middle-aged and elderly patients with elevated blood pressure and is often undiagnosed and under-treated. Physicians acknowledged treating elderly patients less aggressively than middle-aged patients.

LEARNING OBJECTIVES: Audience participants will:
1. Describe the prevalence of isolated systolic hypertension in middle-aged and elderly patients.
2. Discuss the proportion of patients with isolated systolic hypertension who receive either no drug treatment or monotherapy.
3. Discuss physician practice patterns regarding the initiation of ISH treatment and target blood pressure goals in both middle-aged and elderly patients.

Effect of a Length of Therapy Guarantee Contract on Appropriate Antibiotic Use: Placing a Pharmaceutical Manufacturer at Risk

INTRODUCTION: A length of therapy guarantee contract, negotiated by this pharmacy benefit management (PBM) company on behalf of a large HMO client, placed a pharmaceutical manufacturer at financial risk whenever their fluoroquinolone antibiotic exceeded the contract-stipulated length of therapy.

METHODS: Jointly developed antibiotic appropriate use pull-through pieces were carried by manufacturer representatives and discussed with targeted providers during routine visits. The standard course of therapy of one tablet daily for seven days and the seven-day unit-of-use pack was actively promoted. In addition to a standard tiered market share agreement, the length of therapy guarantee provided an additional 3% rebate on the number of oral units dispensed above the contract stipulated length of therapy of 7.5 days.

RESULTS: Since the April 1, 2001, contract start date, the length of therapy has averaged 9.7 days and the contract guarantee is estimated to yield an additional 7.0% of total rebate dollars in return. The direct detailing methods of the manufacturer have not been successful in persuading providers to prescribe the fluoroquinolone appropriately as a 7 day course of therapy.

CONCLUSIONS: The pharmaceutical manufacturer pull-through program has failed to achieve appropriate use of the fluoroquinolone antibiotic but the length of therapy guarantee has enabled the PBM to provide an increased level of protection to its HMO client by securing a monetary guarantee against inappropriate antibiotic utilization.

LEARNING OBJECTIVES: Audience participants will:
1. Recognize the positive outcomes of PBM contract negotiations with pharmaceutical manufacturers on behalf of clients.
2. Understand how contract guarantees can effectively place pharmaceutical manufacturers at financial risk.
3. Recognize the importance of placing responsibility on the pharmaceutical manufacturer to achieve appropriate utilization goals.

From the Eyes of an Insurer … Direct-to-Consumer Advertising Works
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INTRODUCTION: Push technology (letters, e-mails, voice application technology) and pull technology (Web site) can be used to help consumers understand how to talk with their doctors about (a) what is appropriate for their health care needs and (b) what they are willing to pay. Consumer acceptance was determined through retrospective analysis of pharmacy claims data.

METHODS: Consumer utilization of third-tier drugs was a direct reflection of the highly direct-to-consumer (DTC) advertised drugs. This indicated consumers and physicians were requesting these drugs either (a) because they were not aware of lower cost alternatives or (b) because there was brand loyalty. As tiered benefits and higher out-of-pocket costs have become the norm, we designed a process to notify our consumers of ways they can maximize their benefits. As the consumer moves from a higher cost sharing tier to a lower cost sharing tier, out-of-pocket costs will likely decrease, with the potential for the payor's cost decreasing as well. Consumer utilization of the target drugs in January–March of 2001 was used as a baseline. All consumers with a three- or four-tiered plan design with pharmacy claims data for a target drug during April 2001 were identified. Each received a letter informing them of generic and/or cost favorable alternatives. From this population, pharmacy claims data from April – July of 2001 was analyzed to identify consumers who filled a prescription for a generic or cost-favorable alternative drug instead of the target drug. The financial impact of these changes was determined using payor's ingredient costs less the consumers' copay, adjusted for rebates and extrapolating for a one-year period.

RESULTS: 3,130 consumers were sent a letter. 440 filled a prescription for an alternative drug, for an average conversion rate of 14.1%. These 440 consumers will save just more than $100,000 annually in their out-of-pocket costs, with a similar amount saved on the payor side.

CONCLUSIONS: Consumers who were offered a lower cost alternative to a high cost drug indicated a desire to actively participate in how they spend their health care dollars. This program has been expanded to include more therapeutic areas. An insurer-based DTC program works.

LEARNING OBJECTIVES: Audience participants will:
1. Recognize the impact of DTC advertising when consumers are unfamiliar with first- and/or second-tier alternatives.
2. Learn about consumers’ acceptance of lower cost alternatives.
3. Understand the consumers’ desire to actively participate in how they spend their health care dollars.
4. Understand the financial impact to a payer of third-tier utilization and the associated savings with conversion.

Outcomes of Patients Who Were Prescribed Cox-2 Inhibitor Therapy But Did Not Attempt Prior Authorization: A 6-Month Follow-up Study

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INTRODUCTION: Previous study suggested that over 50% of the patients who were prescribed Cox-2 inhibitors (celecoxib and rofecoxib) did not attempt prior authorization (PA) following a point-of-sale pharmacy reject. Evaluation of the characteristics and outcomes of these patients can provide insight into physician prescribing patterns and management strategies for Cox-2 medications.

METHODS: Utilizing pharmacy and PA databases from a managed care healthplan with over 2 million members, patients who were prescribed Cox-2 therapy but did not attempt PA during the year 2000 were identified. Based on pharmacy claims history 45 days preceding the first Cox-2 pharmacy reject, patients were stratified into previous non-users or previous users of NSAIDs, acid-reducers, narcotics, or combination therapy. Patients were then followed for 30 days and for 6 months. Prevalence of subsequent increase in NSAID dose, addition of NSAID, narcotic, or acid-reducer, and the associated 6-month analgesic-related (analgesic and/or acid-reducer) pharmacy costs were determined.

RESULTS: Overall, 26,280 patients (53.29% of all potential Cox-2 users) did not attempt PA. Seventy-six percent were previous non-users, 10.8%, 4.4%, and 4.3% previously used narcotics, NSAIDs, or acid-reducer mono-therapies respectively, and 4.0% used combination users, 10.8%, 4.4%, and 4.3% previously used narcotics, NSAIDs, or acid-reducer mono-therapies respectively, and 4.0% used combination therapy. Of the previous non-users, 69.7% and 57.1% did not use pre- attempt the PA process, the vast majority of these patients did not use prescription analgesics or acid-reducers prior to or after initial Cox-2 attempt.

CONCLUSION: Although a large portion of patients did not attempt the PA process, the vast majority of these patients did not use prescription analgesics or acid-reducers prior to or after initial Cox-2 attempt.

LEARNING OBJECTIVES: Audience participants will:
1. Discuss variables that may be associated with and predictive of increased use of ED services.
2. Describe risk factors correlated with excessive and costly ED use.
3. Understand the benefits of early intervention related to patient care and reduction of medical costs.
4. Increase knowledge of methods for developing predictive models using managed care claims and administrative data.

Predicting High Utilization of Emergency Department Services Among Patients With Psychiatric Diagnoses in a Medicaid Managed Care Organization


INTRODUCTION: A predictive model was developed to identify frequent users of emergency department (ED) services among psychiatric patients for early intervention and to decrease excess resource utilization.

METHODS: A retrospective cohort analysis of psychiatric patients in a Medicaid managed care organization (MMCO) was performed. Members were identified with at least one medical claim for a psychiatric disorder (ICD-9 code 295.xx - 299.xx), and medical and pharmacy claims were compiled from the 1998 calendar year. Demographics, comorbidities, medical utilization and medications were tested as predictors for utilization of ED services. T-tests and Pearson correlation coefficients were calculated to measure associations between independent variables and ED utilization. Ordinary least squares multiple regression analysis was performed on all variables with significant associations. Variables with significant F-ratios in the regression analysis were retained as factors in a risk model, and their additive and cumulative effects were evaluated.

RESULTS: Four variables were significant predictors of ED utilization: prior number of ED visits, prior number of hospitalizations, history of alcohol abuse, and history of depression. ED utilization increased as the number of risk factors increased: with no risk factors, mean ED use is 0.58 visits (per 6 months) while the cumulative effects of all four factors equal 8.5 ED visits.

CONCLUSIONS: Previous resource utilization (ED visits and hospitalizations) as well as comorbidities of alcohol abuse and depression significantly increase the use of ED services among psychiatric patients. Early identification of these high risk patients may lead to improved management and reduced use of ED services.

LEARNING OBJECTIVES: Audience participants will:
1. Discuss variables that may be associated with and predictive of increased use of ED services.
2. Describe risk factors correlated with excessive and costly ED use.
3. Understand the benefits of early intervention related to patient care and reduction of medical costs.
4. Increase knowledge of methods for developing predictive models using managed care claims and administrative data.

Gabapentin Use in a Medicaid Population

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INTRODUCTION: Gabapentin utilization has increased exponentially in Oregon since its release. The use of gabapentin in a primary care setting was evaluated to determine the need for prior authorization criteria in the Oregon Medicaid program.

METHODS: All subjects were members of the Oregon Medicaid program known as the Oregon Health Plan (OHP). Subjects were identified from the CareOregon and Oregon Medicaid fee-for-service drug claims databases. To be included in the retrospective chart review, patients must have had at least one drug claim for gabapentin between January 1, 1998, and September 30, 2000. Exclusion criteria included disenrollment from the OHP and inability to access the patient chart or electronic medical record (EMR).

RESULTS: 95% of patients were receiving gabapentin for off-label diagnoses. Chronic pain and mental disorders were responsible for the majority of prescriptions. Dosing and dosing intervals varied greatly. Very few patients had a documented efficacious response (12%). 40% of patients had no documented follow-up after gabapentin was started.
CONCLUSIONS: Almost all patients received gabapentin for off-label indications. Most patients did not appear to benefit from gabapentin therapy. Gabapentin may be a reasonable candidate for prior authorization.

LEARNING OBJECTIVES: Audience participants will:
1. Identify the impact of the off-label use of gabapentin.
2. Describe the utilization of gabapentin in Oregon’s Medicaid system.
3. Discuss the need for well-defined gabapentin use criteria.

■■ Using Pharmacy Benefits Claims Data to Fulfill Customers’ Expectations of Quality Pharmacologic Care for Attention-Deficit/Hyperactivity Disorder

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INTRODUCTION: Attention-deficit/hyperactivity disorder (ADHD) represents the most common reason children are referred to mental health providers. The American Academy of Pediatrics’ (AAP) ADHD treatment guidelines note that treatment requires monitoring “to maximize function across multiple domains.” Therefore, we sought to develop a methodology to monitor quality of ADHD pharmacologic care.

METHODS: Among over 10 million members continuously enrolled in a pharmacy benefits management plan during 2000, 73,484 (0.73%) received 401,138 psychostimulant fills (subjects were excluded if they received oncology/HIV drugs).

RESULTS: We examined all psychostimulants filled during a 3-month index period; this yielded 108,819 psychostimulants filled for 51,486 unique patients. Most were male (70.3%) and under 19 years (77.2%). Based upon previously published research, we created a metric to convert average daily dose across psychostimulant drug classes to Methylphenidate Equivalent Units (MEU). Average daily MEU was 27.3 mg. Patients averaged 2.1 fills per 3-month period, at an average of 25.5 days coverage per week. If medication was, in fact, taken every day (i.e., over three months), average MEU daily dose would effectively be cut nearly in half to 15.3 mg.

CONCLUSIONS: We describe a methodology for evaluating quality of ADHD pharmacologic care across psychostimulant classes. Whether our findings indicate inadequate or inappropriate treatment requires further research to link daily MEU dose to targeted outcomes of care. In accordance with AAP guidelines, this methodology can be used to provide prescription monitoring and feedback systems, thereby improving quality of ADHD pharmacotherapy.

LEARNING OBJECTIVES: Audience participants will:
1. Identify the importance of developing a methodology to monitor quality of ADHD pharmacologic care.
2. Understand the overall methodology used to monitor quality of ADHD pharmacologic care.
3. Describe ways in which this methodology can be used to improve quality of ADHD pharmacotherapy.

■■ Comparative Efficacy Trial of Simvastatin Alternate Day Therapy Versus Simvastatin Daily Therapy

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INTRODUCTION: To evaluate the efficacy, safety, cost-benefit and adherence rate of simvastatin alternate day therapy compared to simvastatin daily therapy.

METHODS: A prospective, randomized, controlled trial. Twenty-eight patients, without coronary artery disease currently on simvastatin daily therapy with LDL cholesterol at goal as defined by NCEP II criteria, were randomized to simvastatin daily or alternate day therapy for 3 months. Fasting lipoprotein and liver function tests were performed at 3 months to assess efficacy and safety. Adherence was assessed using telephone interviews and confirmed using prescription claims.

RESULTS: Fourteen patients were randomized to daily simvastatin therapy and 14 were randomized to alternate day simvastatin therapy. After three months, 86% of the patients on daily therapy and 93% on alternate therapy remained at their LDL goal. There were no LDL differences between the two groups at baseline (p=0.462) and at 3 months (p=0.812). Adherence rates, assessed by phone interview, were 100% and 92% in the alternate day and daily therapy treatment groups, respectively (p=0.482). Adherence rates, assessed using prescription claims, were 93% in the alternate day group and 60% in the daily group (p=0.122). Liver function values at three months for both treatment groups were normal. Patients did not experience any adverse events. The alternate day therapy resulted in 50% cost savings compared to daily therapy.

CONCLUSIONS: Alternate simvastatin therapy in patients appears to be as effective and safe as daily therapy and may be a treatment option in patients who are unable to afford daily simvastatin therapy.

LEARNING OBJECTIVES: Audience participants will:
1. Identify the patient population who will benefit from alternate day simvastatin therapy.
2. Discuss the efficacy and safety of alternate day simvastatin therapy.
3. Recognize the financial impact of alternate day therapy compared to daily therapy in a managed care environment.

■■ Outpatient Treatment of Venous Thromboembolism with Low Molecular Weight Heparin (Enoxaparin): An Economic Evaluation

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BACKGROUND: The development of low-molecular-weight heparins (LMWH) such as enoxaparin has made it possible to shift the treatment of deep vein thrombosis (DVT) from inpatient to outpatient settings, thereby saving costs and improving patient quality of life. The greatest weight of scientific evidence to date supports the administration of enoxaparin in the outpatient setting, as opposed to other LMWH currently on the market.

OBJECTIVE: To quantify the economic benefits of early discharge of patients treated for DVT with enoxaparin using data pooled from multiple health care plans.

METHODS: The Pharmetrics Integrated Outcomes Database, comprised of integrated medical and pharmacy claims paid by 37 U.S. health plans, was the source of data. Hospitalized patients discharged with a diagnosis of DVT were selected and grouped according to the anticoagulation therapy they received following discharge. Outcomes and costs of DVT treatment were assessed over one year.

RESULTS: Patients discharged on enoxaparin and warfarin spent 2.6 fewer days in hospital than those discharged on warfarin alone (p<0.0001), resulting in cost savings of $1,911 per patient. Mean costs of outpatient management of DVT, including pharmacy and medical services, were $901 higher in the enoxaparin/warfarin cohort, but rate...
of readmission was lower (6.7% vs. 9.0%; p<0.05) and hence subsequent inpatient costs were reduced by $141 per patient. Total cost savings in the enoxaparin/warfarin cohort, net of higher outpatient costs, were $1,151 per patient.

CONCLUSION: Outpatient anticoagulation therapy for DVT with enoxaparin and warfarin is associated with earlier hospital discharge, fewer readmissions, and lower total DVT-related costs compared with patients who are discharged on warfarin alone.

LEARNING OBJECTIVES: Audience participants will:
1. Understand how enoxaparin can be used to treat deep vein thrombosis with warfarin.
2. Discuss the impact on health care resource utilization associated with treating deep vein thrombosis with enoxaparin.

Economic Impact of Fixed-Dose Combination Therapies for Treatment of Hypertension

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INTRODUCTION: Given that JNC-VI guidelines suggest the use of fixed-dose combination agents, the purpose of this investigation was to measure the economic impact of fixed-dose combination antihypertensive agents on payers and patients.

METHODS: Retrospective analysis of a nationwide pharmacy and medical claims database covering 630,000 lives (June 1999 to December 2000) was conducted to identify patients receiving two antihypertensive agents for which fixed-dose combination therapies exist. Exclusion criteria were as follows: 1) patients not receiving antihypertensive therapy for two consecutive months, 2) greater than seven days between refills, and 3) greater than one fixed-dose combination option. Average plan and patient drug expenditures were used to determine cost savings.

RESULTS: Nine thousand three hundred seventy-four patients (out of 125,000 hypertensive patients) were receiving two separate agents for which fixed-dose combination therapy is available. Combinations being used were as follows: BB+diuretic 3,397 (36%), ACEI+diuretic 3,172 (34%), dihydropyridine CCB+ACEI 1,983 (21%), and ARB+diuretic 822 (9%). Average potential patient savings per member in all combination regimens ranged from $0.25 (BB+diuretic) to $7.23 (ACEI+CCB). Average potential plan savings per member were $0.25 (BB+diuretic) to $7.23 (ACEI+CCB). Average potential plan savings per member were $0.25 (BB+diuretic) to $7.23 (ACEI+CCB). Average potential plan savings per month may be realized only in patients receiving ACEI+dihydropyridine CCB therapy ($14.07), which is an estimated annualized cost savings of $334,810.

CONCLUSIONS: As many patients require two antihypertensive agents to control blood pressure, fixed-dose combination agents should be considered for not only the clinical benefit, but the economic benefit as well.

LEARNING OBJECTIVES: Audience participants will be able to:
1. Describe the benefits of fixed-dose combination agents in the treatment of hypertension.
2. Identify appropriate hypertensive patients who may benefit from fixed-dose combination therapy.
3. Discuss the economic impact of fixed-dose combination agents in the treatment of hypertension.

Characteristics of Patients Initiating ARB Therapy

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INTRODUCTION: Demographic characteristics, treatment patterns and hypertension treatment history of patients initiating angiotensin-II receptor blocker (ARB) therapy were evaluated through a retrospective cohort analysis of pharmacy claims data.

METHODS: Pharmacy claims were screened to identify continuously enrolled patients with an initial ARB prescription in 1999. Patient characteristics and concurrent antihypertensive therapies were analyzed at the ARB initiation date. Antihypertensive treatment patterns at 30, 60, 90, and 180 days prior to ARB initiation were also analyzed.

RESULTS: We identified 43,545 patients who initiated ARB therapy in 1999. While consensus guidelines suggest that ARBs be used as second-line therapy, we found that 44% of patients who initiated ARB therapy were not currently being treated for hypertension. Of the 66% that were being treated for hypertension, 42% were receiving monotherapy (ACE, CCB, BB, diuretic). Among patients treated with monotherapy, 22% switched to ARBs and 20% added ARBs to the ongoing monotherapy. Nearly half (46%) of the switches were from an ACE. Of the patients who received any monotherapy in the 6 months prior, only 25.4% remained in the same monotherapy class. Most patients (74% to 87%) consistently treated with class monotherapy did not have their dose adjusted.

CONCLUSIONS: Many antihypertensive-therapy-naïve patients received ARBs as first-line therapy. Driven by the propensity to treat hypertension with monotherapy, treatment changes are more likely to involve switches to a different antihypertensive class rather than dose titration.

LEARNING OBJECTIVES: Audience participants will:
1. Describe demographic characteristics of new ARB users.
2. Understand the similarities and differences among ARBs in terms of patients’ prior antihypertensive treatment.
3. Recognize the difference between real-world antihypertensive treatment and the JNC VI (November 1997) consensus guidelines for treatment of hypertension.

Replacing Branded Estradiol Transdermal Systems with Generic Alternatives Does Not Result In Cost Savings

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OBJECTIVE: To determine if there are differences in adhesion between a branded and a generic estradiol transdermal system leading to differences in expected actual cost.

METHODS: Oral pharmaceutical therapy with bioequivalent generic drugs often results in substantial cost savings for patients and payors. In the case of transdermal products, adherence may affect overall cost in those products that fail to adhere in actual use must be replaced more often than their better-adhering counterparts. To test this hypothesis, 41 post-menopausal women received single treatments (7 days) of both a branded (Climara) and generic (Mylan) transdermal
estradiol system in a crossover study designed for drug equivalency testing. Adhesion of the systems was systematically measured, any tapping that was required due to a separation of the patch from each participant's skin (failure) was recorded and analyzed using generalized estimating equations. Wholesale Acquisition Cost (WAC) and the modeled likelihood of failure were used to determine the expected treatment.

RESULTS: The Climara patch required taping 13.67% (95% CI: 6.05%, 28.03%) of the time compared to 56.00% (95% CI: 40.66%, 70.28%) for the generic. This resulted in an adjusted WAC of $26.09 (95% CI: $24.34, $29.38) for a 28-day supply of Climara and $26.87 (95% CI: $24.23, $29.33) for a 28-day supply of the generic.

CONCLUSION: Adhesion differences between Climara and the generic do have an effect on cost based upon WAC. There does not appear to be actual cost savings associated with the generic due to the inferior adhesion characteristics of the delivery system.

LEARNING OBJECTIVES: Audience participants will:
1. Recognize that transdermal products are unique in that bioequivalency and cost are interrelated with the adhesion properties of the transdermal system.
2. Learn about methods for evaluating and comparing products beyond bioequivalency.
3. Understand how to appropriately counsel customers who are looking toward a cost savings from a generic transdermal product.

Cost of Treating Allergic Rhinitis With Second Generation Antihistamines in a Managed Care Population


OBJECTIVE: To evaluate the cost of treating allergic rhinitis in adolescent and adult patients in a managed care population using second-generation antihistamines.

METHODS: A retrospective study was conducted using PharMetrics’ Integrated Outcomes Database. Patients ≥12 years of age diagnosed with allergic rhinitis and taking a second-generation antihistamine (fexofenadine, loratadine, or cetirizine) in 1999 were evaluated. Patients were stratified by initial antihistamine dispensed and disease severity (defined as none, one, or more than one rhinitis comorbidities, which included sinusitis, upper respiratory infection, asthma, bronchitis, conjunctivitis, and otitis media). Mean rhinitis-related treatment costs for the one-year period following the initial antihistamine prescription was calculated.

RESULTS: 48,377 patients were included in this analysis, of which 54.5%, 31.4%, and 14.0% were treated with loratadine, fexofenadine, and cetirizine, respectively. Compared to fexofenadine (37.3%) and cetirizine (37.2%), significantly more loratadine patients (40.3%, p<0.0001) had no rhinitis comorbidities. Despite this difference in disease severity, mean annual treatment cost for patients treated with fexofenadine monotherapy was $409, which was significantly lower compared to $447 for loratadine or $519 for cetirizine patients (p<0.0001). Further, patients treated with fexofenadine plus an intranasal steroid also incurred significantly lower treatment costs ($681, p<0.0001) than patients treated with loratadine ($744) or cetirizine ($797) plus an intranasal steroid. Similar statistically significant trends were observed when comparing fexofenadine to loratadine and cetirizine by disease severity.

CONCLUSION: Patients treated with fexofenadine, as monotherapy or in combination therapy with intranasal steroids, incurred significantly lower rhinitis-related treatment costs than comparable loratadine or cetirizine-treated patients.

LEARNING OBJECTIVES: Audience participants will understand:
1. How a claims database can be used to compare the costs to treat allergic rhinitis.
2. How the initial selection of a second generation antihistamine impacts the cost to treat allergic rhinitis.
3. How disease severity affects the cost to treat allergic rhinitis.

Assessing Resource Utilization in a Disease Management Program: The Concordance Between Self-Reported and Medical Claims Data

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INTRODUCTION: The concordance between self-reported data and medical claims data for hospitalizations and emergency room (ER) visits was determined for a diabetic population.

METHODS: Participants enrolled in a diabetes disease management program were asked to recall the number of hospitalizations and ER visits incurred in the prior six-month time period. The self-reported responses were compared to concurrent medical claims by calculating the percentage agreement and the Kappa (k) agreement statistic. Population hospitalization and ER rates were compared using the...
were evaluated through a retrospective claims analysis. Con-cordance for hospitalization was 93.6% (p<0.0001) and ER visit was 90.7% (p<0.0001). The associated Kappa statistic was excellent (k=0.7762, p<0.0001) for hospitalization and good (k=0.6512, p<0.0001) for ER visits. The self-reported hospitalization rate was indistinguishable from medical claims data (0.27 vs. 0.26, p=0.2493), as was the ER visit rate (0.23 vs. 0.21, p=0.165). Participants accurately self-reported the number of hospitalizations (89.1%, 95% CI=1.75) and ER visits (87.2%, 95% CI=0.56). Overall concordance on the number of reported hospitalizations and emergency room visits indicated good agreement (k=0.6366, p<0.0001) and (k=0.539, p<0.0001), respectively.

CONCLUSION: Self-reported data are a reliable alternative to medical claims and offer a timely and cost-effective means to assess disease management programs.

LEARNING OBJECTIVES: Audience participants will:
1. Evaluate level of concordance between measures utilizing the Kappa agreement statistic.
2. Learn how disease management program participants are able to accurately recall sentinel events within a 6-month period.
3. Understand how self-reported data is a reliable alternative to medical claims for assessing resource utilization within a disease management program.

Impact of Various Cost Control Mechanisms on Managing Pharmacy Trend

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INTRODUCTION: The effectiveness of various cost control mechanisms, implemented to address customer concerns about drug spend, were evaluated through a retrospective claims analysis.

METHODS: Underlying pharmacy trend is 20% to 26% per year based on internal cohort studies and outside sources. In order to address this trend, several tools that could manage costs were utilized. These included changes to benefit design, aggressive rebate contracting, and clinical interventions/programs. HMO/PPO commercial business was assessed to determine the impact of the various tools on underlying pharmacy trend. Small group business (<500 members) and large group business (>500 members) interventions with respect to trend were tracked from 1999-2001.

RESULTS: A net PMPM trend of 7% to 15% was achieved in the first year of the changes. Roughly one-third of reduced drug costs were due to effective benefit design strategy, including a three-tier benefit. Equally effective was the aggressive rebate strategy that has been escalated in recent years. At least one-quarter of the reductions can be attributed to clinical interventions, with the remainder of the reductions attributed to clinical programs. Underlying trend, a combination of inflation, utilization, and drug mix were not effectively impacted and remained at 20% to 26% levels for these cohorts. Hence, cost controls were able to only temporarily lower effective trend below that of the underlying trend.

CONCLUSIONS: Underlying trend remains at 20% to 26% despite the various cost control mechanisms. It appears that the continual development of evolutionary and revolutionary benefit designs will be the key to managing pharmacy trends most effectively. This is in line with an overall consumer-centric model. At some point, the impact of this strategy as it relates to overall health care trends will need to be evaluated.

Impact of Multi-Tiered Pharmacy Benefits on Patient Attitudes Regarding Formulary and Non Formulary Medications

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LEARNING OBJECTIVES: Audience participants will be able to:
1. Identify the variables influencing pharmacy trend.
2. Describe the various trend control tools and their effectiveness on controlling trend.
3. Compare a simulated trend line with no cost controls to an effective trend line.
INTRODUCTION: Multi-tiered pharmacy benefit plans have important consequences for individuals confronted with formulary and nonformulary alternatives. The impact of two- and three-tiered plans on patient attitudes regarding the purchasing of these alternatives was evaluated.

DESIGN: Cross sectional comparison by plan type using a mail survey

PARTICIPANTS: Random sample of individuals with chronic disease states in two- or three-tiered plans from a managed care population (n=16,804).

ANALYSIS: Linear regression analysis of factors affecting the likelihood of switching to a formulary medication when prescribed a new nonformulary medication or when taking an existing medication that is no longer on the plan’s formulary.

RESULTS: A response rate of 22.7% was obtained. Respondents were older, and on average consumed more expensive medications ($82.30/script versus $62.70/script). Three-tier members were approximately 12% more likely to switch to a formulary medication when prescribed a new nonformulary medication (b=1.17, p=0.032) or when on an existing medication that was now nonformulary (b=1.27, p=0.033). Individuals for whom the additional cost of paying for the nonformulary medication was important were 48% more likely to switch to a formulary medication. Those who believed that formulary medications were more effective than nonformulary medications were 16.7% more likely to switch as well.

CONCLUSIONS: Attitudes of three-tiered plan members and cost conscious members could indicate higher formulary compliance with medications. Perceptions of individuals regarding the comparability of formulary and nonformulary alternatives may also influence purchasing behavior.

LEARNING OBJECTIVES: Audience participants will:
1. Learn to identify individuals at risk for depression using CESD-20 and SF-36.
2. Learn about co-administration of HRQOL and depression screening instruments for making health status assessments.
3. Recognize the importance and effectiveness of Web-based survey methodologies in the evaluation of patient health outcomes.

Risk of Clinical Depression in Arthritis: A Web-Based Co-Administration of CESD-20 and SF-36 to a Nationally Representative Elderly Sample.

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INTRODUCTION: To utilize WebTV technology to measure depression in arthritic patients using Center for Epidemiological Studies Depression Scale (CESD-20) and to assess health-related quality of life (HRQOL) using Short Form 36 (SF-36).

METHODOLOGY: Random Digit Dialing (RDD) survey procedures were used to recruit individuals previously diagnosed with arthritis (N=590) drawn from US households across 44 states. Each participating household was outfitted with a free WebTV and Internet connection. Cut-off scores of <52 and >16 were used on the Mental Health (MH) subscale of SF-36 and CESD-20, respectively, to identify arthritic patients at risk for clinical depression.

RESULTS: A response rate of 87% (N=480) was achieved following the administration of surveys in August 2001. Using CESD scores, 16% (n=76) of the respondents were found to be at risk for clinical depression, as opposed to only 4% (n=19) of the subjects who scored below the cutoff on the MH subscale of SF-36. A strong negative correlation (r=-0.68) was found between the CESD sum of scores and MH domain scores. Significant differences on the CESD scores were found between different age groups, for both males and females, and between groups previously diagnosed with osteoarthritis and rheumatoid arthritis.

CONCLUSION: While concurrent administration of SF-36 and CESD-20 in patients with a chronic disease is desirable for simultaneous assessment of health status and depressive symptomatology, conflicting results are possible when the two instruments measure the same criterion. SF-36 and CESD-20 lead to differential assessment of depression, resulting in a discrepancy in the measurement.

Gastrointestinal Effects of Concomitant Chronic Use of Cox-2 Inhibitor and Aspirin

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INTRODUCTION: Nonsteroidal anti-inflammatory drugs (NSAIDs) due to their nonselective inhibition of cyclooxygenase (Cox) have been linked to adverse gastrointestinal (GI) events. Numerous studies have shown the incidence of gastrointestinal events to be less for patients taking Cox-2 specific inhibitors than for those receiving traditional NSAIDs; however, patients taking Cox-2 inhibitors often have co-morbid conditions requiring the use of medications that cause additional adverse GI effects.

OBJECTIVE: To evaluate the comparative incidence of GI events in patients receiving a Cox-2 inhibitor alone compared to those receiving a Cox-2 inhibitor and low-dose aspirin.

METHODS: This is a retrospective study reviewing medical and pharmacy claims data between January 1999 and June 2001, comparing the incidence of GI-related events for patients receiving a Cox-2 inhibitor plus low-dose aspirin and those receiving a Cox-2 inhibitor alone. Electronic chart reviews were conducted using the health plan’s electronic medical record database.

RESULTS: Over 18,000 pharmacy claims for Cox-2 inhibitors were reviewed; 1,768 patients received chronic Cox-2 therapy (defined as >3 months); 680 patients were on Cox-2 inhibitor and aspirin concurrently; 211 patients on the combination therapy (31.0%) vs. 151 patients on Cox-2 therapy alone (13.7%) were found to have a documented GI event.

CONCLUSION: A trend was observed toward higher GI incidences for patients on combination therapy of Cox-2 inhibitor plus low-dose aspirin. These results may help clinicians understand the additional risk associated with the combination regimen.
LEARNING OBJECTIVES: Audience participants will:
1. Understand the GI incidence of traditional NSAIDs and Cox-2 specific inhibitors.
2. Evaluate the GI outcomes of concurrent Cox-2 inhibitor and low-dose aspirin therapy versus Cox-2 inhibitor alone.
3. Determine whether or not there are additional risk factors associated with patients on Cox-2 inhibitors that increase the incidence of GI events.

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RESULTS: Pharmacy claims showed 1,760 patients received a warfarin product; 70 patients switched between manufacturers, 102 total number of switches; 36.39 patient-year of exposure to a warfarin product; 2.80 switches per patient-year of exposure. Eight patients who switched from generic to generic and 13 patients who switched brand to generic qualified for the study groups. Comparing the INRs before and after the switch for the generic to generic group, a MAE of 0.405 +/- 0.278 was calculated; and for the brand and generic group, a MAE of 0.424 +/- 0.176 was calculated.

CONCLUSIONS: Although the number of qualifying patients is small, the results demonstrate that there was no difference in variability in the INR.

LEARNING OBJECTIVES: Audience participants will:
1. Understand the significance of a narrow therapeutic index (NTI) drug such as warfarin and the impact of such drugs on health plan decisions.
2. Evaluate the outcomes of warfarin manufacturer interchanges in health plan patients.
3. Determine whether or not there is a risk associated with switching between warfarin products.

RESULTS: A retrospective evaluation was performed to determine the frequency patients were switched between different warfarin products, and if the switches resulted in significant changes in INR control and hemorrhagic or thromboembolic event rates. The study compared INR control and event rates between patients switched from brand and generic to generic versus patients on Coumadin. Data was collected from pharmacy claims from 4th Quarter 2000 to 2nd Quarter 2001. Control patients were matched 2:1 for age, indication, and target INR. Mean absolute errors (MAE) comparing pre-switch and post-switch INRs for brand to generic and generic to generic switches were evaluated.

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3. Determine whether or not there is a risk associated with switching between warfarin products.

INTRODUCTION: Warfarin requires close monitoring of the international normalized ratio (INR). Currently several generic warfarin products are available and interchanges between different manufacturers could result in significant changes in clinical outcomes.

METHODS: A retrospective evaluation was performed to determine the frequency patients were switched between different warfarin products, and if the switches resulted in significant changes in INR control and hemorrhagic or thromboembolic event rates. The study compared INR control and event rates between patients switched from brand and generic to generic versus patients on Coumadin. Data was collected from pharmacy claims from 4th Quarter 2000 to 2nd Quarter 2001. Control patients were matched 2:1 for age, indication, and target INR. Mean absolute errors (MAE) comparing pre-switch and post-switch INRs for brand to generic and generic to generic switches were evaluated.

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INTRODUCTION: Successful medical glaucoma therapy attained by sustaining or lowering elevated intraocular pressure requires lifelong treatment and compliance to prescribed medication. Our objective was to assess therapeutic persistence with topical glaucoma medications administered as initial therapy by evaluating discontinuation rates.

METHODS: We conducted an observational, retrospective cohort study using administrative pharmacy claims data of three geographically dispersed managed care plans. Subjects <65 years of age with prescription drug coverage for the entire time were enrolled into this study. Patients were selected based on initial glaucoma medication utilization and no prior use of glaucoma medications for the 6 months prior to index prescription date. The main outcome measure was discontinuation rates of topical glaucoma medications. Statistical analyses were based on survival analysis methods.

RESULTS: There were a total of 1,330 patients in our study, of which 50% were female. 53% of the patients discontinued initial glaucoma therapy. After one year of glaucoma therapy patients initiated on latanoprost had a significantly lower discontinuation rate compared to patients initiated on glaucoma medications from other drug classes. Compared to latanoprost-users, patients initiated on beta-blockers were 26% more likely to discontinue therapy (RR=1.26; 95% CI: 1.05 to 1.54; p<0.05), patients initiated on carbonic anhydrase inhibitors were 236% more likely to discontinue therapy (RR=2.36; 95% CI: 1.85 to 3.02, p<0.01), and patients initiated on brimonidine were 220% more likely to discontinue therapy (RR=2.20; 95% CI: 1.47 to 3.27, p<0.01).

CONCLUSION: Patients receiving latanoprost for initial glaucoma therapy demonstrate greater persistency and are less likely to discontinue therapy compared to other glaucoma medications.

LEARNING OBJECTIVES: Audience participants will:
1. Utilize survival analysis methods in evaluation of persistency with drug therapy.
2. Understand how to assess discontinuation rates of drug therapy using retrospective pharmacy claims databases.
3. Discuss the value of measuring persistency in patient populations enrolled in managed care plans.

INTRODUCTION: The Adult Treatment Panel (ATP) III recommendations, which were issued on May 15, 2001, are the first update from the National Cholesterol Education Program (NCEP) in nearly a decade with several significant changes from its previous guidelines. Although physicians have been encouraged to adhere to the NCEP guidelines for the treatment of hyperlipidemia, they lack the tools that present the information in a comprehensive, easy to use format. The objectives of the program are to provide highlights on the key changes in the management of hyperlipidemia as well as comparative information on lipid-lowering therapies with respect to clinical efficacy, safety, and cost in a pocket guide that practitioners can easily utilize at the point of care.

METHODS: A clinical pharmacy workgroup was formed to develop a pocket reference card that focused on the assessment and treatment of hyperlipidemia for primary and secondary prevention of cardiovascular events in accordance to the ATP III recommendations. Information on lipid-lowering therapies including drug products available on the Health Net of California Recommended Drug List was also featured.
RESULTS: A lipid management pocket guide was developed and mailed to approximately 17,000 network primary care physicians and cardiologists. The main components included in the pocket guide are as follows: (1) new features in the ATP III recommendations, highlighting the key changes from the ATP II recommendations; (2) suggested pharmacologic treatment options; (3) LDL goals and cut-points per individual patient risk category.

CONCLUSIONS: Through the implementation of a lipid management pocket guide, physicians are provided a tool to assess the cardiovascular risk of patients and select the most appropriate therapy for individual patients at the point of care.

LEARNING OBJECTIVES: Audience participants will:
- 1. Recognize the need for health plans to become proactively involved in the effort of reinforcing national treatment guidelines.
- 2. Learn about the importance of providing educational tools that assist physicians in applying nationally recognized medical guidelines to clinical practice.
- 3. Understand the implications of offering physicians clinical and cost comparisons among different therapeutic options.

■ Potential Impact of Implementing Quantity Limits on Sustained-Release Oxycodone

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INTRODUCTION: The purpose of this study was to evaluate sustained-release oxycodone use and impact of implementing quantity limits in a managed care setting.

METHODS: A 300,000-member commercial and Medicaid managed care organization analyzed pharmacy claims in May 2001. Claims were analyzed to determine the cost-effectiveness and impact of instituting a quantity limit of 60 per 30-day supply on the use of sustained-release oxycodone (Oxycontin). Each member's total daily milligram intake (TDMI) was calculated to determine if more than 80 mg q12 hours or 160 mg/day (maximum TDMI allowed without authorization) would be needed.

RESULTS: A total of 1,500 claims were identified. 511/1500 (34%) had quantities greater than 60 per 30 days. The number of scripts over 60 per 30 days was; 10mg tablets 139/385 (36%), 20 mg tablets 164/396 (27%), 40 mg tablets 138/393 (35%), 80 mg tablets 70/126 (55%). The impact of those unable to get their TDMI with quantity limits in place was 103/1,500 (7%) of claims, with 87% having more than a 30% change in their TDMI.

CONCLUSIONS: Excessive quantities were utilized with few claims over the TDMI. A low, manageable percentage of members would be impacted by a quantity limit. Limits are scheduled to start January 1, 2002.

LEARNING OBJECTIVES: Audience participants will:
- 1. Identify the number of prescriptions over the recommended quantity limit of 60 per 30 days.
- 2. Analyze the impact of TDMI change for this population.
- 3. Determine whether member conversions to within quantity limits are manageable.

■ Characteristics and Management of the Managed Care Diabetic Population

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INTRODUCTION: Whether American Diabetes Association (ADA) guidelines for the management of diabetic patients are being followed in managed care (MC) is unclear. Characteristics of “Dysmetabolic Syndrome X” are poorly understood and may lead to an increased risk of heart disease within the diabetic MC population.

METHODS: We conducted a retrospective chart review of 5,236 diabetic MC enrollees from July of 2000 to May of 2001. Using trained chart reviewers, we collected information on both demographic and clinical characteristics and described the percentage of patients with chart documentation of ADA-suggested medical care. In addition, we characterized the prevalence of risk factors thought to be associated with “Dysmetabolic Syndrome X.”

RESULTS: The prevalence of obesity, low HDL cholesterol, hypertriglyceridemia, and hypertension was high in this population (35%, 45%, 55% and 73%, respectively). Sixty percent of the sample had their LDL cholesterol level documented in the previous year, with only 36.8% demonstrating adequate control (<100 mg/dl). Only 27.9% of the sample had average blood pressure readings (from the previous year) within the ADA target range (<130/80 mmHg). Blood glucose control, as measured by average hemoglobin A1c level, was adequately controlled in 36.9% of the sample. Lastly, only 44.1% and 21.6% of eligible participants had foot and eye exams documented in their chart in the previous year, respectively.

CONCLUSIONS: The percentage of MC enrollees receiving recommended care was low and the prevalence of factors associated with “Dysmetabolic Syndrome X” was high in this population. Quality improvement initiatives, including physician education, may be warranted.

LEARNING OBJECTIVES: Audience participants will:
- 1. Discuss ADA recommendations for the management of the diabetic population and identify potential areas for improvement within the MC population.
- 2. Identify the prevalence of risk factors associated with “Dysmetabolic Syndrome X” in the managed care population.
- 3. Discuss the need for quality improvement initiatives targeting the care and treatment of diabetes within MC organizations.

■ Practice Trends in Rheumatoid Arthritis (RA) Therapy: Effects of Emerging Agents

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OBJECTIVE: To assess current trends in RA treatment resulting from the introduction of new antirheumatic agents.

METHODS: A survey was conducted among 400 practicing rheumatologists. Demographic data were cross-referenced to treatment choices in various scenarios. Treatment choices were compared based on age, years in practice, practice type, region, and whether they had an infusion center (IC) or clinical research experience.

RESULTS: One third of the rheumatologists had been in practice >20 years and 46% were >50 years old. Solo rheumatologists were common (32%). Most had or planned to have ICs in their practice (89%) and conducted clinical research (62%). Having an IC increased the use of antitumor necrosis factor (TNF) therapies. Methotrexate (MTX) was the most frequently prescribed disease-modifying antirheumatic drug (DMARD), and was not commonly switched. Combination therapy (Combi) with MTX was increasingly prescribed with greater disease duration, x-ray erosions, swollen joints, and partial responses (45% to 97%). Whereas MTX/anti-TNF Combo was most common in MTX par-
■ Improving Diabetic Nephropathy Screening and Treatment Through Outpatient Pharmacist Monitoring


INTRODUCTION: To determine the most effective intervention to improve diabetic nephropathy screening and treatment using outpatient pharmacists in a group model health maintenance organization.

METHODS: Outpatient pharmacists reviewed computerized patient medical records for appropriate lab monitoring for maintenance diabetic medications when patients requested refills. If nephropathy screening was not done in the previous 12 months, pharmacists ordered the appropriate lab test (spot urine microalbuminuria or 24-hour urine protein). Intervention site patients were instructed to obtain needed labwork through pharmacist phone calls and control site patients were informed of needed labwork by pharmacist consultation at the pharmacy. Upon receipt of an abnormal lab result, the pharmacist referred the result to the clinical pharmacy resident at the intervention site or the primary care provider at the control site for follow-up or therapeutic intervention.

RESULTS: 236 patients at the intervention site and 341 patients at the control site were identified between October 1, 1999, and July 1, 2000. 82/236 (35%) of intervention patients and 148/341 (43%) of control patients needed nephropathy screening. 44/82 (54%) of intervention and 58/148 (39%) of control patients completed the nephropathy screening labwork. 27/44 (61%) of intervention patients and 20/58 (34%) of control patients were found to have an initial positive proteinuria result.

CONCLUSIONS: Outpatient pharmacists were successful in identifying and evaluating patients in need of nephropathy screening and referring abnormal labs for appropriate follow-up. Additionally, the method of advising patients of needed labwork through pharmacist phone calls was more effective than a single consultation at the pharmacy.

LEARNING OBJECTIVES: Audience participants will:
1. Define current HEDIS nephropathy screening recommendations.
2. Discuss appropriate treatment for diabetic nephropathy.
3. Describe effective outpatient pharmacist interventions for improving laboratory monitoring rates and follow-up in a group model health maintenance organization.

■ Comparing Treatment Patterns, Patient Persistence on Medication, and Economic Outcomes of an Ethnically Diverse Group of Women with Overactive Bladder

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INTRODUCTION: The goal of this study was to examine treatment patterns, persistency, and associated costs for women diagnosed with overactive bladder in an ethnically diverse population.

METHODS: The study population was comprised of 8,900 women over age 45 who had a diagnosis for overactive bladder in administrative claims data from a single health plan in Hawaii between July 1998 and June 2000. Self-reported ethnicity information from member satisfaction surveys was matched to claims data, when available (approximately 61%). Persistency was defined based on possession ratio and gaps in filling prescriptions. Logistic regression and generalized linear models were used to analyze associations between patient characteristics and outcomes.

RESULTS: Approximately 6.5% of female health plan members over age 45 were diagnosed with overactive bladder. Of these, 22% were on drug therapy during the study period. Of women on pharmacological treatment, the average days of persistency with the three most commonly prescribed drugs ranged considerably from a low of 54 with oxybutynin XL to a high of 83 days with tolterodine. Additionally, approximately one third of all members filled only one prescription. Total costs incurred by the study population were slightly under $50 per diagnosed member per month; however, only a small fraction (approximately 4%) of these costs were associated with overactive bladder. Compared to Caucasians, all Asian American and Pacific Islander groups tended to be less persistent in filling their medications and had lower costs.

CONCLUSIONS: There were definite persistency differences observed with the three agents studied. Further study is needed to better understand reasons for the high rate of discontinuation and to examine ethnic differences in treatment and persistence.

LEARNING OBJECTIVES: Audience participants will:
1. Gain a greater understanding of the impact of patient characteristics, including age, location, and ethnicity on diagnosis, likelihood of drug treatment, and persistency on medication for overactive bladder.
2. Learn how a health plan collaborated with a pharmaceutical company to better understand treatment patterns and compliance among enrollees.
3. Examine the impact of overactive bladder on health care costs.

■ Impact of Implementing an OxyContin/Narcotic Clinical Action Team in an SFL HMO

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PURPOSE: To address the inappropriate and widespread use of OxyContin and other schedule II narcotics. A multidisciplinary task force was comprised of two clinical pharmacists, two associate medical directors and three quality management RNs. The team was developed to design and implement a protocol for identifying physician outliers whose prescribing patterns for OxyContin/narcotics use, deviate significantly from established pain management standards and peers in the same area of practice.
 abstract: 

METHODS: Using pharmacy claims data, the top OxyContin prescribers by number of prescriptions and number of tablets were identified. Using two standard deviations above the mean, outliers were separated from their peers. Prescribing patterns for narcotic use for these physicians was analyzed from 01/01/01 to 03/31/01. Oncologists and hematologists were excluded from the analysis. Fifty-five physicians were identified as outliers and letters and letters were sent with specific questions. Pharmacies with large dispensing quantities where also tracked and investigated.

RESULTS: Thirty-nine of the 55 physicians responded to the letters sent. Only 29% had detailed explanations for extended duration of therapy and high quantities of tablets. The remainder received a second letter. From the pharmacy claims data it was also found that several pharmacies were using unknown DEA numbers to enter prescriptions for narcotics and that accounted for 25% of the total volume. As a result of this finding, our claims processor blocked unknown DEA access from going through on dummy DEA numbers.

CONCLUSIONS: Fifty-five prescribers treating patients for chronic nonmalignant pain were identified. The need for physician education in the treatment of chronic nonmalignant pain has been identified as an area that warrants more attention. The need for performing regular audits to capture dummy DEAs for schedule II narcotics was identified accidentally as a result of this initiative.

LEARNING OBJECTIVES: Audience participants will:
1. Learn about issues driving OxyContin/narcotic use increase in a managed care setting.
2. Recognize the importance and benefit of a multidisciplinary approach in addressing a problem that affects several departments within an HMO.
3. Understand usefulness of performing regular audits and drug use reviews for pharmacy claims data.

Health Care Expenditures of Patients with Major Depressive Disorder and Post-Traumatic Stress Disorder

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INTRODUCTION: An estimated 50% of Americans are exposed to at least one traumatic event in a lifetime. Of those, 20% experience post-traumatic stress disorder (PTSD). Approximately 50% of patients with PTSD have comorbid major depression disorder. This study examined the cost differential between patients with major depressive disorder (MDD) only, PTSD only and patients with comorbid MDD and PTSD.

METHODS: A retrospective study of patients with MDD and PTSD was performed using 1996 to 1999 claims from the MarketScan Database, with private sector health data from approximately 100 payers. Three cohorts of patients were created: (1) patients with MDD (ICD-9-CM 296.2, 296.3, 300.4, or 311), (2) patients with PTSD (ICD-9-CM 309.81), and patients with both MDD and PTSD. Patients had to also have a prescription drug claim for an antidepressant within 30 days of diagnosis. During the 6-month follow-up, health care utilization and expenditures for inpatient, outpatient, emergency room, and outpatient drugs were calculated. Total expenditures were compared. ANOVA was used to assess the statistical significance of differences in expenditures.

RESULTS: A total of 24,955 patients with fee-for-service health coverage were identified. Of those, 24,156 were diagnosed with MDD, 196 with PTSD, and 603 with co-occurring MDD and PTSD. The mean total expenditure for patients with MDD, PTSD, and MDD with PTSD were $3,407, $3,714, $5,723 respectively (p<0.05). PTSD was significantly associated with increased expenditures after stratifying for gender, age, and geographic region.

CONCLUSION: Costs associated with MDD and PTSD are substantial. The total health care expenditures of patients with PTSD were significantly higher than expenditures for patients with MDD alone. Patients with comorbid depression and PTSD had significantly increased expenditures than patients with one condition.

LEARNING OBJECTIVES: Audience participants will learn:
1. The costs of PTSD and MDD are substantial.
2. Comorbidity increases the cost of treating patients significantly.
3. Appropriate diagnosis and treatment of these conditions is important.

Effects of Extending a Pharmacy Benefit to a Medicare Eligible Population.

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INTRODUCTION: The financial impact and utilization patterns of a Medicare-eligible population was analyzed before and after the implementation of the TRICARE Senior Program Pharmacy (TSRx).

METHODS: The military’s new pharmacy program, initiated April 1, 2001, allowed military eligible beneficiaries 65 years old and older to fill prescriptions using local retail pharmacies for a nominal copay. Prior to April 1st most Medicare age beneficiaries were authorized only to use the Military Treatment Facilities (MTFs) when filling prescriptions. The retail pharmacy network represents the most expensive point-of-service option within the Military Healthcare System (MHS). The convenience of this service could result in greater utilization of the retail network for MTF formulary and non-formulary claims for patients residing outside a 40-mile radius (catchment area) of the MTF. An additional concern is the effect of patients filling MTF formulary prescriptions along with non-formulary prescriptions through the retail network. To perform our analysis, we created a subset of Medicare eligible beneficiaries who had prescriptions filled at the MTF prior to April 1, 2001. Those patients were subdivided into catchment and non-catchment categories. Utilization rates and costs of claim migration for the subset were calculated.

RESULTS: After the implementation of TSRx, retail prescription claims from patients outside the catchment area was over 359% greater than claims from patients within the catchment area (0.086 vs. 0.359 PMPM). Additionally, the ratio of formulary claims (F) to non-formulary (NF) claims was 83% higher for patients residing outside the catchment area (0.732:1 F: NF catchment vs. 1.339:1 F: NF non-catchment). The additional cost to the MHS for MTF formulary claims filled within the retail network was $11.97 per prescription for catchment area claims and $13.18 per prescription for non-catchment claims. The net cost to the MHS was $28,614 for both categories of patients.

CONCLUSIONS: Non-catchment patients use the retail network to a greater extent than catchment patients. One theory could be rela-
An Analysis of the Relationship Between Initial Asthma Medication Selected and Total Cost of Care

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INTRODUCTION: Appropriate selection of initial preventive pharmacotherapy is essential for the successful treatment of asthma.

METHODS: Pharmacy and medical claims of a large managed care organizations were analyzed to assess the relationship between initial asthma medication selection and total cost of care. Patients were included if they had a diagnosis of asthma, were continuously enrolled, and initiated treatment with an inhaled corticosteroid (ICS), long-acting beta agonist (LABA), leukotriene modifier (LTM), mast cell stabilizer (MCS), or theophylline. Patients were followed for 12 months. Potential confounding factors were controlled for, including age, gender, chronic disease score, and pre-period asthma-related charges.

RESULTS: A total of 5,180 patients were analyzed. The mean age was 36.3 years (SD=24.3); 57.9% were female. Patients initiated on LTM were likely to receive subsequent ICS (25.1%) compared to patients initiated on ICS (2.44), LABA (2.01), and M-CS (0.08). Patients initiated on LTM received significantly more short-acting beta agonist prescriptions (3.09) than those initiated on ICS (2.44), LABA (2.01), and M-CS (0.08). Potential confounding factors were controlled for, including age, gender, chronic disease score, and pre-period asthma-related charges.

CONCLUSIONS: In this population, it appears that ICS may be more effective at managing/preventing asthma symptoms than LABMs. In this managed care organization, patients who were previously treated receiving monotherapy with an OAD and requiring additional therapy exhibited significantly greater adherence when switched to Glucovance therapy than those advanced to combination therapy (metformin and glipizide). Patients receiving combination therapy (metformin and glipizide) and then switched to Glucovance therapy possessed significantly greater adherence after switching. Improvements in adherence may lead to better HbA1c control, thereby reducing possible complications associated with diabetes.

LEARNING OBJECTIVES: Audience participants will:
1. Describe issues that may contribute to patients’ alteration or discontinuation of an oral antidiabetic medication regimen.
2. Discuss the health risks associated with deceased oral antidiabetic medication adherence.
3. Identify methods that may improve oral antidiabetic medication compliance.

Oxycontin Utilization in a Rural Western State

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INTRODUCTION: In July 2001 the FDA changed OxyContin labeling (Purdue Pharmaceuticals) to warn of its strong abuse potential, advise against PRN use, and remind practitioners of the dangers associated with crushing tablets. Reports of abuse began in rural areas of the US, particularly in eastern states, and the problem is not well defined in other areas of the country.

METHODS: An observational study was conducted using a relational database of medical and prescription claims for a rural western state’s Medicaid program. In 2001, the program processed a mean of 16,000 prescriptions per month. OxyContin utilization was measured over time (1/1996-9/2001) and categorized as malignant or nonmalignant by the presence of diagnosis in the year preceding OxyContin pre-
cription. Data were presented graphically according to volume and expenditure, both overall and per patient. Quarterly utilization was evaluated to determine the proportion of patients who received OxyContin from multiple prescribers.

**RESULTS:** In 2001, this Medicaid program is projected to spend $1,000,000 on OxyContin for nonmalignant use and almost $300,000 for malignant use. The number of prescriptions for nonmalignant use increased from 50% to 80% of all OxyContin use. Since 1996, per patient expenditure for nonmalignant use has increased more rapidly ($340 to $972/year) than malignant use ($420 to $848 per year). The proportion of patients receiving OxyContin from multiple prescribers averaged 17% for nonmalignant use and 21% for malignant use.

**CONCLUSIONS:** OxyContin use has greatly increased in the past five years and nonmalignant use has grown at a greater rate than malignant use.

**LEARNING OBJECTIVES:** Audience participants will:
1. Describe the utilization patterns of OxyContin in a rural Western Medicaid population.
2. Identify potential educational targets to promote the safe use of OxyContin.
3. Discuss the epidemiologic value of drug utilization review for OxyContin.

### Impact of a Physician Education Campaign on Generic Antibiotic Utilization During Flu Season

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**INTRODUCTION:** The rate of drug-resistant bacteria is dramatically increasing, and increasing antibiotic use is a likely cause. To help prevent the spread of antibiotic resistance and decrease unnecessary prescribing, physicians should be aware of the latest guidelines for judicious antibiotic use and share this information with their patients.

**METHODS:** The top 200 prescribers of antibiotics in Alabama were notified via physician-directed letters of the antibiotic appropriate utilization campaign for the period December 1, 2000, through February 28, 2001, which was defined as flu season. The physicians were informed when antibiotic usage was appropriate in certain illnesses such as otitis media, rhinitis, sinusitis, pharyngitis, cough illness, and bronchitis. These letters included CDC Treatment Guidelines, a BCBS antibiotic formulary, and educational brochures and OTC coupons for patients. This data was compared to a 1-year period prior to this intervention (December 1, 1999–February 29, 2000) to exclude temperature changes as a limitation. The utilization of three antibiotics were analyzed: amoxicillin, Augmentin, and Zithromax.

**RESULTS:** Of the 230,688 prescriptions filled, 24% were for amoxicillin, 23% were for Augmentin, and 53% were for Zithromax. During the 3-month period in 1999-2000, 187,357 prescriptions were filled with 17% for amoxicillin, 24% Augmentin, and 59% Zithromax. The average cost of each prescription was $34.61 in 2001 versus $35.92 in 2000.

**CONCLUSIONS:** Although drug utilization increased, the prescribing of generic antibiotics increased by 7%. The use of generics helped decrease the average prescription cost for antibiotics.

**LEARNING OBJECTIVES:** Audience participants will:
1. Recognize the emerging threat of antibiotic resistance due to unnecessary antibiotic utilization.
2. Learn about a campaign undertaken by a managed care organization to encourage physician awareness of the latest treatment guidelines for diagnoses historically treated with antibiotics.
3. Recognize if this initiative is cost-effective and whether further intervention should be considered.

### Health Care Professionals’ Perceptions of the Role of Pharmacogenomic Data

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**INTRODUCTION:** The study was a mail survey of the attendees of a policy conference entitled Pharmacogenomics: Implications for Patients, Providers, and Payers sponsored by the University of Arizona College of Pharmacy.

**METHODS:** A three-page questionnaire elicited respondent perceptions of how the use of pharmacogenomic information would impact the provision of health-related services (7-point scale, 7=strongly increase to 1=strongly decrease). Respondents were also asked to provide their level of agreement to several statements related to how pharmacogenomic information should be used (7-point scale, 7=strongly agree to 1=strongly disagree). One-sample t-tests were used to investigate significant differences from the midpoint (neutral response) value of each scale.

**RESULTS:** An 80.5% response rate was achieved (n=70). Respondents believed the use of pharmacogenomic information would affect several areas of health care, including the cost of insurance premiums (p<0.001), the use of confidential medical information (p=0.024), patient access to therapy (p=0.005), and the impact of physician/patient preferences in selecting treatment choices (p<0.001). Furthermore, respondents felt the information should be used to help treat patients (p<0.001), help patients/physicians make therapy choices (p<0.001), create treatment guidelines (p<0.001), conduct research (p<0.001), justify refusals of therapy (p=0.014), and budget for future expenditures (p<0.001). Respondents also believed the information should not be used to set co-pay amounts (p=0.002), determine insurance premiums (p<0.001), or negotiate insurance contracts (p<0.001).

**CONCLUSION:** The respondents to this survey appear optimistic about the use of pharmacogenomic information, and their responses provide a proactive framework to discuss the potential use and misuse of this technology.

**LEARNING OBJECTIVES:** Audience participants will:
1. Describe the potential uses of the information obtained from pharmacogenomic testing.
2. Identify the potential impacts of the use of information obtained from pharmacogenomic testing on the health care industry.
3. Identify what health care professionals believe information obtained from pharmacogenomic testing should be used for.
4. Discuss the need to prepare for the incorporation of pharmacogenomic data into health care decisions.