pared to the $125 million in savings attributed to the Medi-Cal equivalent NDCs, an additional $8 million could be gained if repackaged pharmaceuticals were priced with a relevant Medi-Cal rate such as an average Estimated Acquisition Cost, an overall savings of 35.8%. On a per prescription basis, the practice of repackaging costs an additional $20 when compared to a Medi-Cal pharmacy dispensed reimbursement rate. **CONCLUSION:** This study informs new legislation being proposed to stop the generous pricing of repackaged pharmaceuticals due to non-equivalent NDCs. For the first time we describe the practice of repackaging pharmaceuticals and identify cost savings expected with alternative pricing systems, but also identify the value of repackaging pharmaceuticals for WC patients.

PPN4

PATIENT SEGMENTATION AND DRIVERS OF ACCESS TO PATIENT CONTROLLED ANALGESIA

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OBJECTIVES: Patient controlled analgesia (PCA) with pump delivery is the mainstay of modern postoperative pain management, with often better pain control compared to competing methods. We performed a data mining study to identify the clinical and hospital infrastructure correlates of PCA use. **METHODS:** Patients older than 18 years having major operative procedures expected to require strong opioid based post-operative pain control were selected from the Premier Perspective database. Obstetric patients were excluded. Two random samples were selected: a training sample of N = 21,782 and a validation sample of N = 21,538. Factor analysis mapped the 75 observed explanatory variables, not related to post-operative pain method onto 17 independent factors. Patient segmentation was performed based on cluster analysis. **RESULTS:** Thirteen distinct clusters were identified each with distinguishing demographic, clinical, payor and hospital setting features. Percent of PCA use in each of the segments ranged from 3% to 38%. Six segments, accounting for 3.5%, 1.8%, 8.4%, 4.1%, 6.1% and 9.2% of the total population had PCA usage below 10%. Only three segments had PCA usage more than 20% with 4.7%, 14.5% and 7.8% of the population. Qualitative evaluation indicated that the primary factor determining whether a segment had low or high PCA use was the circumstance of admission: for urgent admissions PCA was lowest, while the highest PCA use was observed in those segments characterized by elective admissions. **CONCLUSION:** Use of PCA differs between segments in a heterogeneous cohort of post-operative pain patients. That the driver of this difference was admission source may suggest that time required to prepare PCA is an important factor in its actual use and that thus easier PCA methods may increase patient's use of PCA.

PAIN—Patient Reported Outcomes

PPN5

ADVANCES IN PAIN MEASUREMENT: ITEM RESPONSE THEORY (IRT) BASED METHODS AND THE PAIN IMPACT QUESTIONNAIRE (PIQ-6)

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OBJECTIVES: To use IRT-based methods to develop a six-item questionnaire (PIQ-6) measuring pain severity and pain impact. IRT was used to: 1) identify the most informative items from a bank of 65 items, 2) evaluate construct validity, 3) norm the PIQ-6 to the US general population; 4) cross-calibrate it to the SF-36v2 BP scale; 5) develop a simple scoring approach based on response category weights matching the IRT score; and 6) build a computerized version to facilitate monitoring and management of pain. **METHODS:** Items analyses and selection were based on data from two web-based general population samples (n = 782, n = 829) and a chronic pain patients sample (n = 306). Norming was achieved by recalibrating the IRT-based item parameter using 1998 US representative norm data of the SF36v2 (n = 7069). Cross-calibration of the PIQ-6 and SF-36v2 was performed by estimating the expected SF-36v2 BP scale score using IRT-based item parameter. The PIQ-6 computerized version was programmed with Microsoft Visual Basic. **RESULTS:** Six items were identified that fitted an unidimensional IRT model, showed high measurement precision and did not show differential item functioning. Construct validity was supported by high correlations with other pain measures and strong discrimination of pain patients and the general population. The PIQ-6 is normed so that a score of 50 represents the US general population norm (sd = 10). A cross-calibration table of the PIQ-6/SF-36v2 was created to facilitate communication between researchers using those different instruments. The simple hand scoring approach had satisfactory agreement with the IRT scores. The PIQ-6 was programmed as computerized stand-alone/PDA/online versions allowing for an easy administration, scoring and immediate feedback reporting including interpretation guidelines. **CONCLUSIONS:** Pain measurement can be improved by using IRT and computerized methods. Noteworthy advantages of the PIQ-6 are the enhancement of measurement precision and coverage as well as the facilitation of monitoring and managing pain.

PATIENT-REPORTED OUTCOMES

PRO1

RESULTS OF ALTERNATIVE DEFINITIONS FOR STATIN REFILL COMPIANCE, PERSISTENCE AND GAPS IN A RETROSPECTIVE DATABASE ANALYSIS

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OBJECTIVES: Our objective was to examine results of different calculation methods for compliance, persistence and medication gaps using prescription refill claims. **METHODS:** This was a retrospective analysis of statin prescription claims in the Protocare database from 1/1/96 to 12/31/02. Statistics were based on first-time statin users (no statin claims in last year) continuously enrolled for a minimum of 2.5 years after their first statin claim (N = 45,754) and up to a maximum of 6 years. Compliance was calculated as the "simple" medical possession ratio (MPR)—days supply/ 365 days—and as "adjusted" MPR, systematically accounting for gaps and surplus days supply. Persistence was calculated as "continuous" statin persistence (no gap in supply greater than 30 days) and as "any" statin supply per one year periods. Gaps were calculated for number of gaps of one day or more without days supply and average gap length in 365 days. **RESULTS:** "Simple" MPR in the first year of use was 62% (S.D. = 0.36). For the same period "adjusted" MPR was 59% (S.D. 0.33) and lower for 50% of the sample. The average difference was 0.04 (14.6 days). Approximately 34% of the sample was continuously persistent thru year 1, falling to 21% in year 2; however, 73 percent had at least one prescription in year 2. Compliance, persistence and gaps varied year by year over patient's total coverage periods. **CONCLUSIONS:** Failure to account for gaps and cumulative surpluses in prescription refills can distort compliance estimates. "Any" persistence statistics indicate that a higher proportion of statin users remain intermittent rather than discontinued over long periods of time. Statistics on number and length of gaps are necessary to provide a full

description of statin use in refill claims data. **DISCLOSURE:** Pfizer Inc. provided access to the Protocare database and financial support for drawing the initial sample. Kochevar and Williams have received past support from Pfizer Inc. but not for this analysis.

PRO2

SELF-REPORTED HEALTH STATUS PREDICTORS OF MEDICATION ADHERENCE IN OLDER ADULTS WITH CHRONIC DISEASES

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OBJECTIVE: Medication adherence is a recognized problem in older persons and is exacerbated by the factors such as comorbid conditions. The aim of this study was to examine the relationship between self-reported health status and medication adherence in older adults with chronic diseases. **METHODS:** A longitudinal cohort study was conducted in older adults (aged greater than or equal to 65 years) enrolled in a health maintenance organization. Study sample included patient cohorts with four major chronic diseases: Type 2 Diabetes Mellitus (n = 667), Overactive Bladder (n = 176), Asthma (n = 129), and Psoriasis (n = 63). Self-reported health perception, falls, lifestyle, and depressive symptomatology in the pre-enrollment year were measured using a risk-assessment questionnaire. The SF-12 questionnaire assessed the quality of life and the short-form Center for Epidemiologic Studies Depression Scale assessed depression level (0–100). Medication Possession Ratio (MPR) was used as a measure of medication adherence. Multivariate regression analyses were conducted examining predictors of MPR scores. **RESULTS:** A 0.28-point increase in MPR [Range 0–1] was found in patients receiving oral antidiabetics as compared to patients who did not receive oral antidiabetics ($p < 0.001$). Increased number of comorbidities were associated with decreased adherence ($p < 0.05$). In OAB patients, previous year hospitalization was associated with 0.05-point decrease in MPR for antimuscarinic medication ($p < 0.05$). For asthmatic patients, depressive symptomatology was associated with 0.31-point decrease in MPR ($p < 0.05$). Psoriasis patients with depressive symptoms and those whose physical activity was only moderate were less adherent to topical corticosteroids (both $p < 0.01$). **CONCLUSION:** Significant associations were found between predictors of health status such as depressive symptoms and decreased medication adherence in elderly patients with chronic diseases. Health status assessments completed at the time of enrollment may have the potential to identify older adults at risk for poor adherence for better intervention.

PRO3

EVALUATION OF A PROGRAM TO IMPROVE ADHERENCE WITH PEGYLATED INTERFERON THERAPY: A PROPENSITY SCORE MATCHED RETROSPECTIVE COHORT ANALYSIS

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OBJECTIVES: Poor adherence to antiviral therapy in hepatitis C virus (HCV) patients is a well-documented problem. The Be In Charge® program (BIC) is a comprehensive patient support program that encourages adherence by providing 24-hour inbound and proactive outbound telephone nursing support and mailings of HCV educational materials throughout therapy. The purpose was to determine the impact of BIC on patient adherence to peginterferon alfa-2b combination therapy (peg-2b). **METHODS:** A retrospective cohort analysis compared BIC enrollees to propensity-score matched peg-2b starters not enrolled in BIC (controls). Subjects were included if they were ≥18 years of age; started peg-2b on or after January 1, 2004; and could be observed for at least 12 weeks after treatment initiation. Adherence was measured as the number of injections dispensed and proportion of patients who received an average of ≥1 injection per week during follow-up. Adherence was compared using paired chi-square and t-test. **RESULTS:** After matching, each cohort consisted of 780 eligible subjects observable for ≥12 weeks; 638 and 333 subjects in each cohort were observable for 24 and 48 weeks, respectively. BIC subjects refilled 1.2 more injections (95% confidence interval [CI] 0.52, 1.83; $P < 0.0001$) than the control cohort within 12 weeks, 2.7 more (95% CI 1.5, 3.8; $P < 0.0001$) within 24 weeks, and 6.7 more (95% CI 4.3, 9.1; $P < 0.0001$) within 48 weeks. Additionally, BIC enrollees were more likely to refill ≥12 injections within 12 weeks of initiation (72% vs. 64%, $P = 0.0005$), ≥24 injections within 24 weeks (52% vs. 41%, $P < 0.0001$), and ≥48 injections within 48 weeks (22% vs. 13%, $P = 0.0020$). **CONCLUSION:** This quasi-experimental study suggest the BIC program significantly improved adherence to peg-2b. Additional research is needed to ascertain which aspects of the program are most effective and which patients are most likely to benefit from this intervention.

PRO4

PREVALENCE OF MEDICATION COMPLIANCE AND PERSISTENCY WITH SPECIALTY MEDICATIONS IN MANAGED CARE POPULATION

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OBJECTIVES: The primary objective of this project is to assess the prevalence of medication compliance and persistency with specialty medications in patients newly diagnosed with specific disease conditions such as Growth Hormone (GH), Chronic Hepatitis C (CHC), Multiple Sclerosis (MS) and Rheumatoid Arthritis (RA). **METHODS:** For each disease condition, separate cohorts of patients who were newly diagnosed between May 1, 2004 and August 1, 2004 time periods were identified and selected using PBM pharmacy claims database. Patients were defined as new to therapy if they were not prescribed the same specialty medication six months prior to the study period. Patients who lost prescription drug benefit eligibility during the study period were excluded from analysis. Identified patients were then followed for a period of 12 months from the treatment start date. Compliance was measured by computing the Medication Possession Ratio (MPR), which is defined as the ratio of the total days supply obtained to the total number of days in the study period. Persistency was reported in terms of average length of therapy in days. The compliance and persistency measures were also controlled for differences in gender and age. **RESULTS:** The mean MPR was 0.66 for patients on GH (N = 60), it was 0.48 for patients on CHC (N = 107, 0.65 on MS (N = 173) and 0.63 on RA (N = 324). The average length of therapy for patients on GH was 274. 5 days, on CHC was 196.0, on MS was 270.1 days and on RA was 285.2 days. **CONCLUSIONS:** Non-compliance and non-persistency is a critical and prevalent problem in the patients taking specialty medications. Disease specific efforts are needed to improve medication compliance and persistency to optimal level in order to achieve effective treatment outcomes.