BACKGROUND

On October 26, 2005, Arkansas Medicaid implemented a preferred drug list (PDL) policy for C-II long acting narcotic analgesics (LANA) where all LANA required prior authorization except generic long-acting morphine and methadone.

OBJECTIVES

This study sought to determine the impact of the PDL on the cost and utilization of:
- Long Acting Narcotic Analgesics (C-II)
- Substitute Drugs
  - C-II Short Acting Narcotic Analgesics
  - C-V Short Acting Narcotic Analgesics
  - Non-narcotic analgesic substitutes

METHODS

Research Design: Implementation of the PDL provided a natural time series experiment. We obtained Arkansas Medicaid claims data from January 1999 to July 2007.

Subjects: Our sample included recipients eligible for at least one month from January 2003 to July 2007 and excluded recipients not subject to the PDL (Medicare dual eligibles, tuberculosis patients, long term care patients, cancer patients, and patient who cannot take oral medications).

Measures: Net costs for long acting narcotics were calculated by applying rebated discount percentages to the claim paid amounts. Utilization measures for narcotics were morphine equivalents, days supply, and prescription counts. Milligrams of morphine equivalents (mgME) were calculated from standardized conversion tables. The utilization measure for non-narcotic substitutes was prescription counts.

Statistical Analysis: Autoregressive integrated moving average (ARIMA) time series models of aggregate monthly narcotic cost and utilization measures were generated to forecast the post policy measures based on the 33 month pre-policy trends. The impact of the policy was estimated by taking the difference between forecast and observed measures after the PDL where negative values indicate a savings for measures of expenditure or a reduction in utilization for utilization measures. Interrupted ordinary least squares regression (OLS) time series models were also estimated to capture the impact of the policy on the shifts in trend and intercept. OLS models were the primary analysis for non-narcotic substitutes. Sensitivity analyses modeled the impact of generic fentanyl 8 months prior to the PDL, PMPM metrics, and including extended-release tramadol for narcotic measures.

RESULTS

Impact of the LANA PDL on Expenditures of Narcotics

There were 709,791 subjects with at least one month of eligibility for pharmacy benefits. 3,227 had at least one prescription for a LANA. Total net costs for LANA were $1.40 million ($0.29 PMPM) the year prior to the policy and were $0.37 million ($0.07 PMPM) after the policy. The PDL was associated with a -$1.41 million (95%CI: -$0.37 to -$2.43 million) or PMPY -$1.79 (95%CI: -$0.28 to -$3.30) difference in LANA costs and a -$1.78 million (95%CI: -$0.48 to -$3.03 million) or PMPY -$0.57 (95%CI: -$0.26 to -$0.92) difference across all narcotic analgesics over the 22 month post policy period.

Impact of the LANA PDL on Utilization of Narcotics

Post PDL total narcotic utilization was not significantly different from trend utilization; average monthly difference of -434,553 mgME (95%CI: -1,778,375 to 909,269 mgME) or average PMPM -0.26 mgME (95%CI: -0.66 to 0.12 mgME) for the 22 month post policy period. The results of our OLS time series analysis of non-narcotic substitutes showed no policy-associated decrease in prescribed morphine equivalents for LANA and an increase in C-II SANA morphine equivalents of over $1.4 million U.S. The total analgesia, as measured by net costs for long acting narcotics, was initiated 11 days before the PDL. Since we excluded persons not subject to the PDL, the effect of the MAC pricing policy on our estimates would be minimal.

LIMITATIONS & CONCLUSIONS

Limitations: We explored alternative time series model specifications and there were meaningful differences in the savings estimates derived from each. It is impossible to know the correct model specification with certainty; however, we feel that the basic model is the more likely because 85% of the prescriptions issued for transdermal fentanyl were for the generic product the month before the policy. The fentanyl model, which assumes an increase in the prescription counts for the following potential substitute drugs: anticonvulsants, benzodiazepines, muscle relaxants, COX-2 NSAIDS, non-selective NSAIDS, SNRI, SSRI, TCA, triptans, or miscellaneous analgesics. However, in an a priori model that included pregabalin, utilization of selected anticonvulsants appeared to have increased coincident with the PDL policy.

Conclusions: The PDL resulted in significant cost savings for LANA and total narcotics of over $1.4 million U.S. The total analgesia, as measured by total narcotic morphine equivalents, made available to the Arkansas Medicaid population appears to have been unaffected by this policy. It appears there may have been a transient decrease in prescribed morphine equivalents for LANA and an increase in C-II SANA morphine equivalents suggesting that short acting C-IIIs have been used as substitutes for LANA for some recipients. Non-narcotic substitute utilization was unaffected by the policy. Among the preferred agents, there was a greater increase in the utilization of extended release morphine than methadone.