

Medicare Part D's Effect On Prescribing Volume: Average Monthly Utilization of Selected High Use Drugs In The Six Protected Classes, By Different Specialties

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ABSTRACT

OBJECTIVES: To determine whether the implementation of Medicare Part D coverage affected trends in average per physician prescription volume of select drugs in the six classes deemed by CMS/Medicare Part D to be medically necessary for reimbursement. To assess these trends over the 2005-2008 period, including the 1/1/2006 implementation of Medicare Part D (MMA-D). To investigate whether prescribers of different specialties were affected to a greater or lesser extent than their peers.

METHODS: For each of the six protected classes defined by CMS (Antineoplastics, Antidepressants, Anticonvulsants, Antipsychotics, Antiretrovirals) a comparative market basket consisting of the top 2 prescribed anticonvulsants (clonazepam, gabapentin), antidepressants (escitalopram, fluoxetine), antipsychotics (quetiapine, risperidone), HIV/AIDS (emtricitabine/tenofovir, ritonavir) and immunosuppressants (azathioprine, mycophenolate) were selected based on total prescriptions (TRx) between January 2005 and June 2008. For that time frame, Average prescription volume, by individual physician, were collected monthly using SDI/ Verispas's VONA and VOPA databases.

RESULTS: Of 104 physician specialty/molecule prescribing pairs, average monthly prescription volume for the 12 month period after implementation of Medicare Part D (1/06 – 12/06) coverage increased significantly ($p < 0.05$) versus the prior 12 months (01/05-12/05) for 79% (34/43) of combinations examined, and conversely, a significant ($p < 0.05$) decrease was observed for 80% (48/60) combinations.

CONCLUSIONS: The introduction of MMA-D had significant impact on utilization for the majority of high volume drugs in the MMA-D designated protected classes. A possible explanation is that the reorganization of formulary structures and tier placement for many of these drugs led to pricing changes for patients, which in turn were observed by physicians and led to subtle but significant changes in prescribing behavior. It is interesting to note that in addition to changes for specialty physicians, significant changes in volume were also noted for GP/FP/IM physicians. Ongoing investigation into drug pricing and tier placement may lead to greater clarity.

OBJECTIVES

- The primary objective is to determine whether the transition to coverage of drugs under Part D for those drugs deemed medically necessary had any effect on physicians' prescribing behavior:
 - Average Monthly Prescribing Volume (TRx)
 - Analysis by physician specialty including PCP (GP, FP, IM)
- All drugs considered were oral administration, due to the limitations of our access to the SDI VONA/VOPA datasets
- As a reference, data were examined for 2005, 2006, 2007 and 2008 timeframes for the following drugs and classes, which were chosen for their status as protected (classes) and highest volume (drugs):

Antineoplastics (capecitabine, imatinib)	Antidepressants (escitalopram, fluoxetine)
Antipsychotics (quetiapine, risperidone)	Immunosuppressants (azathioprine, mycophenolate)
Antiretrovirals (emtricitabine/tenofovir, ritonavir)	Anticonvulsants (clonazepam, gabapentin)

METHODS

The top two most frequently prescribed drugs between 2005-2008, from six drug classes that have been declared to be medically necessary and reimbursed by Medicare Part D in the US have been examined. Data were collected using SDI Health's VONA/VOPA datasets. The simple average monthly volume for each drug over the course of 12 months*, as prescribed by each specialty has been compared. Comparisons of average monthly volume from 2005, 2006, 2007 and 2008 have been undertaken. The majority of this analysis focused on the comparison of the 12 months immediately prior to MMA-D implementation with the 12 months immediately post MMA-D implementation. Student's T-Test values were calculated for the comparison of Jan-Dec 2005, with Jan-Dec 2006, Jan-Dec 2007, and Jan-Nov 2008 to test for significance at the $p < 0.05$ level. Average monthly prescribing volume for each physician/product combination (Neurologist-gabapentin, Cardiologist-fluoxetine etc)

was captured and an evaluation of statistically significant difference pre/post Medicare Part D implementation was undertaken, using 12/05-1/06 as the point of inflection. For this analysis we assume that the data set remains stable from 2005 - 2008. Although, given that this was a retrospective analysis using secondary data, it should be noted that there are two places in the chain of responsibility from physician intent to patient action at which behavior could have changed leading to the results we observe.

- Physicians may have changed their prescribing behavior
- Patients may have chosen not to fill a script (because of lack of insurance coverage, for example)

Red boxes indicate areas where patient behavior changes, rather than physician changes may have affected this analysis. This analysis is not capable of distinguishing between these two types of variations.

*For 2008, data were unavailable for December



CONCLUSIONS (& CONSIDERATIONS FOR FURTHER RESEARCH)

This analysis shows that, at some point in the flow between physician diagnosis and prescription fulfillment, there was a shift in the status quo, occurring approximately at the same time as the switch to MMA-D. It is possible that reorganization of formulary structures due to MMA-D caused either a shift in prescribing behavior amongst physicians, or a heightened awareness and subsequent change in patient behavior leading to modification of prescription fulfillment. It is important to note that although MMA-D is applicable only to patients age 65 and older, this analysis considered patients of all ages. A more detailed analysis is anticipated, looking only at MMA-D beneficiaries.

Further investigation should be undertaken to determine which of these (patient prescription fulfillment change, physician prescribing change) has contributed most to this result.

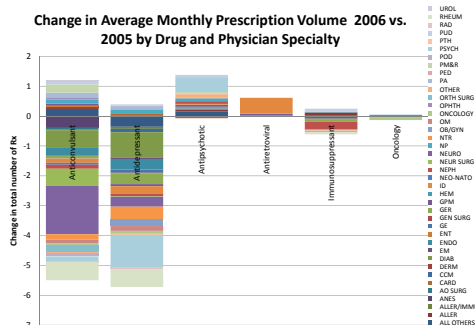
Of the six classes evaluated, the two most commonly prescribed classes (anticonvulsants & antidepressants) showed the largest change in volume, and both were significant decreases. Speculation as to why this is the case has led to the following suggestions:

- The two drugs in each class most commonly prescribed have had tier changes, leading to increased costs for patients and therefore feedback to physicians looking for alternative prescriptions. Physicians have decreased their volume of prescriptions.
- Patients were reluctant to fill their prescriptions in the mid to late part of the year as they found themselves in the 'doughnut hole', therefore, even though physicians were prescribing, patients chose not to fill the prescription.

An interesting phenomenon which should be investigated further is the variation and decrease in prescriptions by specialty. We currently have no explanation for such large decreases in prescription volume by Rheumatologists, Neurologists and Diabetologists. One would expect that the types of medications evaluated which are most commonly prescribed by these specialties (Immunosuppressants, Anticonvulsants) would be insensitive to price fluctuations, but physician and patient price sensitivity appears to be the only logical explanation for these large decreases. This cannot be confirmed without further investigation.

RESULTS

Change in Average Monthly Prescription Volume 2006 vs. 2005 by Drug and Physician Specialty



Of the 104 physician/product combinations, 60 showed a decrease. 48 of these decreases were significant at the $p < 0.05$ level. The remaining 43 combinations showed an increase in prescribing volume, 34 of which were significant at $p < 0.05$ level.

At an aggregate level, using a simple unweighted average of change in monthly prescription volume, the classes most affected were the anticonvulsants and antidepressants. Anticonvulsants showed a large decrease in prescriptions among Neurologists, and similarly, Antidepressants decreased markedly among Psychiatrists. It is interesting to note that Psychiatrists (along with many other specialties) showed a contemporaneous significant increase in average monthly volume of Antipsychotics.

Figure 4 shows the average change in total prescription volume among all drugs/classes considered for each specialty. A greater number of specialties exhibited decreases in average volume, and these decreases were greater in magnitude.

Change in Average Monthly TRx Volume by Physician Specialty, 2005 – 2006

