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Management of Newer Antidepressant Medications in U.S. Commercial Health Plans

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Abstract

Background—Private health insurance plays a large role in the US health system, including for many individuals with depression. Private insurers have been actively trying to influence pharmaceutical utilization and costs, particularly for newer and costlier medications. The approaches that insurers use may have important effects on patients' access to antidepressant medications.

Aims of the Study—To report which approaches (e.g., tiered copayments, prior authorization, and step therapy) commercial health plans are employing to manage newer antidepressant medications, and how the use of these approaches has changed since 2003.

Methods—Data are from a nationally representative survey of commercial health plans in 60 market areas regarding alcohol, drug abuse and mental health services in 2010. Responses were obtained from 389 plans (89% response rate), reporting on 925 insurance products. For each of six branded antidepressant medications, respondents were asked whether the plan covered the medication and if so, on what copayment tier, and whether it was subject to prior authorization or step therapy. Measures of management approach were constructed for each medication and for the group of medications. Bivariate and multivariate analyses were used to test for association of the management approach with various health plan characteristics.

Results—Less than 1% of health plan products excluded any of the six antidepressants studied. Medications were more likely to be subjected to restrictions if they were newer, more expensive or were reformulations. 55% of products used placement on a high cost-sharing tier (3 or 4) as their only form of restriction for newer branded antidepressants. This proportion was lower than in 2003, when 71% of products took this approach. In addition, only 2% of products left all the newer branded medications unrestricted, down from 25% in 2003. Multivariate analysis indicated that preferred provider organizations were more likely than other product types to use tier 3 or 4 placement.

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Conflict of interest statement

None of the authors have any conflict of interest for this paper.

Discussion—We find that U.S. health plans are using a variety of strategies to manage cost and utilization of newer branded antidepressant medications. Plans appear to be finding that approaches other than exclusion are adequate to meet their cost-management goals for newer branded antidepressants, although they have increased their use of administrative restrictions since 2003. Limitations include lack of information about how administrative restrictions were applied in practice, information on only six medications, and some potential for endogeneity bias in the regression analyses.

Conclusion—This study has documented substantial use of various restrictions on access to newer branded antidepressants in U.S. commercial health plans. Most of these medications had generic equivalents that offered at least some substitutability, reducing access concerns. At the same time, it is worth noting that high copayments and administrative requirements can nonetheless be burdensome for some patients.

Implications for Health Policy—Health plans' pharmacy management approaches may concern policymakers less than in the early 2000s, due to the lesser distinctiveness of today's branded medications. This may change depending on future drug introductions.

Implications for Further Research—Future research should examine the impact of plans' pharmacy management approaches, using patient-level data.

Introduction

Antidepressant medication treatment is one important and widely used tool for treating depression. In recent years there has been a rapid growth in the use of antidepressants in many countries.[12] In the United States, the number of residents taking antidepressants doubled between 1998 and 2009, reaching 22.3 million.[3] For U.S. residents with private insurance (about half the population), access to antidepressant treatment depends critically on a set of policies that private health plans apply to the medications that they cover. This paper reports on how private health plans in the U.S. manage access to six of the newer branded medications within the antidepressant class.

Like many other medication classes, the antidepressant class has undergone substantial change in recent decades, with the emergence of newer, better tolerated medications particularly among the subclasses known as selective serotonin re-uptake inhibitors (SSRIs) and serotonin–norepinephrine reuptake inhibitors (SNRIs).[4] More recently, as those newer medications lost patent protection, manufacturers sought to extend their patents and avoid price reductions by releasing 'reformulations' of existing medications.[5] Some reformulations are longer-acting versions of existing medications, while others use a different delivery route (e.g., patch instead of tablets). The continued emergence of newer medications may have benefited patients, as different medications appear to work for different individuals.[6] Patients who fail to benefit from one antidepressant often respond to another,[78] and in 2011 Dupuy *et al* concluded that "no single agent has distinguished itself as clearly superior" for first-line treatment of major depressive disorder.[4] On the other hand, some believe there is limited incremental benefit from the reformulations, which have improved tolerability in some cases but have not usually represented advances in efficacy or effectiveness.[5] In any case, the continued emergence and use of new branded drugs drives

up antidepressant spending, which grew at an average annual rate of 8% between 1997 and 2008 in the U.S.[9] This spending growth put pressure on public and private insurers to develop drug cost management strategies, which remain active even though spending growth has slowed somewhat in the last few years.[9]

In the U.S., private health plans have used a variety of strategies to constrain pharmacy spending. First, plans may exclude certain medications from coverage altogether. Second, they may apply administrative controls to certain medications. These include prior authorization, where the plan must pre-approve prescriptions for certain drugs in order for the cost to be covered, or step therapy, where the plan designates a 'first-line' drug and only allows use of other medications in that class if the physician documents lack of success with the first-line drug. Third, many plans designate certain drugs in each class as 'preferred', and charge patients a higher copayment or coinsurance for using other drugs in that class. Plans often assign preferred status to drugs for which they were able to negotiate larger rebates with manufacturers, although there is also evidence that they consider the extent to which a drug is advertised directly to consumers.[10] Until recently, this strategy was mostly applied only to branded drugs, resulting in a commonly used three-tier copayment structure: Tier 1 (generic), Tier 2 (preferred brand) and Tier 3 (non-preferred brand). In 2003, 92% of U.S. health plans had three-tier formularies.[11] (More recently, some plans have started classifying some generics as non-preferred).

Each of these approaches has implications for patients' access to antidepressants. The health plan's goal is to induce switching toward its preferred medications, whether because patients seek to avoid higher copays (in tiered formularies) or because physicians seek to avoid extra paperwork (under prior authorization or step therapy). A number of studies have found that these approaches did result in shifts in prescribing and reductions in health plans' spending, including for antidepressants.[12,1314] However, some studies also found these policies to be associated with higher rates of medication discontinuation,[12] including for treatment of mental disorders.[1516]

Questions remain as to which types of plan apply more restrictions, and what types of medications they are more likely to restrict. One prior study on health plans' pharmacy management found that for-profit health plans were more likely to restrict a given drug,[17] although that study did not include any psychotropic medications. In terms of medication characteristics, one would expect plans to apply more restrictions to medications which are more expensive, unless these offer commensurate additional health benefits. For example, reformulation medications may be particularly likely to be restricted, since they are more expensive and may also be perceived as only providing incremental benefits compared to the original version. Neumann *et al*[18] reviewed formularies at a private health plan and a state Medicaid program. They found that medications with published evidence of better cost-utility were often (but not always) assigned to more favorable copayment tiers (although they acknowledged that their measure of cost may not have captured true cost to the plan, net of rebates). Finally, plans' formulary decisions must take into account any potential effects on antidepressant adherence, as this is one of a set of standard performance measures (Healthcare Effectiveness Data and Information Set, or HEDIS) that are used for industry report cards and for internal quality management by plans.

This study sets out to document how U.S. health plans are managing the use of antidepressant medications, using data from a nationally representative survey of health plans in 2010. For some analyses we compare our results to an earlier round of the survey in 2003. We focus on six of the newer medications as these may be more likely to be targeted by plans' cost management efforts. Our study questions include:

1. How many of the newer antidepressants are available without restriction, on average?
2. Which restriction approaches are plans using most often?
3. What plan characteristics are associated with greater use of restrictions?
4. Which of the newer antidepressants are plans more likely to restrict? (Newer? Costlier?)
5. What changes have occurred since 2003, for questions 1–3?

Methods

Data source and population

Data were collected for the 2010 benefit year through the third round of a nationally representative survey of commercial health plans regarding substance use disorder (SUD) and mental health (MH) services. Previous rounds of the survey were conducted in 1999 and 2003. In 2003, 368 plans in the same market areas were surveyed (83% response rate); in 2010, 389 plans again in the same market areas were surveyed (89% response rate).

The survey used a panel design with replacement. The primary sampling units were the 60 market areas selected by the Community Tracking Study to be nationally representative. [19] The second stage sampled plans within markets. The national sample from 2003 (Round 2) was augmented with plans not previously operating in the market areas. Plans serving multiple markets were defined as separate plans and their data were collected with respect to each market area. We screened for eligibility by verifying health plan operation in the market area and coverage of MH/SUD services for a commercial population with more than 300 subscribers or 600 covered lives. This approach identified 438 eligible plans, of which 389 responded (89%) and reported on 939 insurance products. For the clinical portion of the survey 385 plans (88%) responded, reporting on 925 products. Non-respondents tended to be located in larger metropolitan areas in the South and West.

Data Collection

The survey was administered by telephone to senior health plan executives. Typically, there were 2 respondents per health plan (1 each for the administrative and clinical components). For some national or regional health plans, we interviewed respondents at the corporate headquarters level regarding multiple sites. In some cases the health plans referred us to their specialty contractor, the managed behavioral health organization (MBHO), for more detailed information.

Health plans typically offer multiple products such as a health maintenance organization (HMO), a preferred provider organization (PPO) or a point of service plan (POS). Each plan was asked about its top three commercial products, defined by size of enrollment. All items were asked at the product level within each market-area–specific health plan. Respondents were asked to treat as one product "any packages, plans or contracts that are similar in terms of out-of-network coverage, referrals, and primary care physicians".

Medications

Questions about antidepressants were part of a pharmacy module that also asked about two other medication classes. It was necessary to ask about a subset of the large number of antidepressant medications available, in order to avoid an excessive burden on respondents. We chose to focus on newer medications for which generic versions were not available in 2010, or at least not in the same formulation. The rationale was that when a medication is available in both brand and generic versions for the same formulation, patients can easily obtain the generic. Therefore, for multiple-source drugs it is of less policy interest to know how health plans specifically restrict the brand version. The specific medications included were three SNRI agents: duloxetine,[a] desvenlafaxine [b] and venlafaxine (extended release);[c] two SSRI agents: escitalopram [d] and fluvoxamine, (controlled release);[e] and one MAOI agent: selegiline transdermal system.[f] Fluvoxamine, (controlled release) differs from the others in that it lacks FDA approval as an antidepressant, but it is nonetheless used off-label, in particular to treat depression in patients who fail on other SSRIs. Escitalopram is a reformulation of an existing medication (citalopram), which involved excluding an isomer that did not contribute to citalopram's antidepressant effect. Thus four of our six agents are reformulations, either through change in delivery route (selegiline transdermal system), change in isomer (escitalopram) or less frequent dosing (venlafaxine-extended release and fluvoxamine- controlled release).

As context, two characteristics are reported for each of the six drugs studied. First, the year the drug was approved in the U.S. was obtained from a website maintained by the U.S. Food and Drug Administration (FDA).[20] Second, we identified the maintenance strength most commonly used in 2010 in a state Medicaid program. The monthly cost for a 30-day supply of that strength was obtained from the Red Book for 2010, a U.S. publication which reports the average wholesale price for each formulation of each drug.[21] This cost reflects what health plans might pay if they could not negotiate rebates. Insured customers would typically only pay a portion of this amount, as a copayment or coinsurance to the health plan.

Pharmacy approaches

This paper reports on responses to questions about how plans cover prescription medications. Respondents to the clinical module were read a list of medications, and were

[a] Cymbalta
[b] Pristiq
[c] Effexor-XR
[d] Lexapro
[e] Luvox-CR
[f] Emsam

asked for each one: whether it was covered, and if so, on what cost-sharing tier each medication was placed; whether it was subject to prior authorization; and whether it was only available to patients who had failed treatment on another medication (step therapy). These restrictions could be applied in combination, so for drug-level analyses we developed a simpler classification which is exhaustive and mutually exclusive. The four categories are: exclusion, placement on Tier 3 or 4 (with no other restriction), other management approach, or unrestricted. 'Other management approach' could therefore include the use of prior authorization or step therapy, with or without placement on Tier 3 or 4.

In addition, for some analyses our focus was on plans' overall management of the group of medications studied. From the drug-level items, aggregate measures were constructed to identify which combinations of restrictions each plan was using for the whole group of antidepressants studied, e.g. placement on Tier 3 or 4 only, prior authorization only, both (with no other restrictions), etc. Again, the classification was constructed to be exhaustive and mutually exclusive. For one analysis, the classification was simplified to three categories.

Other variables

In addition, various health plan characteristics were available in the survey data and used in some analyses.

- Product type. Respondents classified their health plan products as one of: health maintenance organization (HMO), point-of-service (POS), preferred provider organization (PPO), and consumer-directed plan (CDP). CDPs have emerged more recently as products that give plan members more choice but also more financial risk, often involving high deductibles.
- Contracting arrangement for mental health. Based on plans' responses, arrangements were initially classified into four categories: *specialty external* (contracted with a MBHO for delivery and management of specialty behavioral health services); *comprehensive external* (contracted with a single vendor for both general medical and behavioral health provider networks); *internal* (all behavioral health services provided by plan employees or through a network of providers directly administered by the plan); and *hybrid-internal* (behavioral health services managed by a separate, behavioral health specialty division of the health plan). Comprehensive contracts were reported by only four products in 2010, so for this paper we combined the specialty and comprehensive approaches into a single category, labeled external contracts.
- Whether the plan had a contract with a pharmacy benefits manager (PBM).
- Profit status (for-profit or nonprofit).
- Region (location of the plan's market area – by census region).

2003 data

To address our longitudinal question, one analysis compares class-level management approaches in this survey to results from the previous survey round in 2003. That survey

asked about four antidepressant medications that were newer and brand-only in 2003: sertraline,[g] paroxetine,[h] citalopram [i] and escitalopram.[j][22]

Data Analytic Procedures

The data were weighted to present national estimates for health plans' commercial managed care products in the continental U.S. After simplifying the class-level management variable into 3 values as described above, chi-squared tests were used to evaluate the association of the management approach with each of the five health plan characteristics listed above. In addition, multivariate logistic regression analyses were conducted for two specific binary dependent variables. First, models were used to predict plans' use of a three- or four-tier approach for any of these antidepressant medications. Not all the available plan characteristics could be used in this regression due to overly strong correlations. Second, models were used to predict whether a plan left at least two antidepressant medications unrestricted (among the 6 studied). The rationale was that having only one unrestricted option could pose a particular challenge for some patients.

To address the question of which drugs are more likely to be unrestricted, we conducted one additional analysis. Unlike the preceding analyses, this one used multiple observations per plan. We estimated logistic regressions to predict whether a drug was unrestricted, using a dataset with one observation per drug per plan (and controlling for clustering by plan).

All statistical analyses were implemented using SUDAAN software (version 11), for accurate estimation of the sampling variance given our complex sampling design.[23] All tests were 2-tailed, and results with $p<.05$ were considered statistically significant. Our sample included too few CDP products to analyze them separately, so they were combined with the PPO category for bivariate and multivariate analyses. The rationale is that CDPs' reliance on cost-sharing rather than gatekeeping makes them more similar to PPOs than to HMO or POS products. To test the sensitivity of findings to this choice, we reran selected analyses excluding the CDP plans altogether, and found only small changes in results.

Results

Sample characteristics

Most of the sample comprised HMO, PPO or POS insurance products, with consumer-driven plans comprising only 5% of products (Table 1). In 70% of products, behavioral health care was managed by a separate, behavioral health specialty division of the health plan (the 'hybrid internal' approach). Other plans used either fully internal or external approaches (15% of products each). Most products contracted with a PBM for pharmacy management (73%), and were part of for-profit health plans (88%).

[g] Zoloft
[h] Paxil
[i] Celexa
[j] Lexapro

Management of individual medications

Very few products (fewer than 1%) excluded any of the six medications studied (Table 2). The medications most likely to be left unrestricted were escitalopram (60% of products) and venlafaxine-extended release (52%). These were also the ones that had been on the market longest. For three of the other four medications, the most common approach was placement on Tier 3 or 4 without other restrictions. This was particularly common for seligiline-transdermal (62% of products), the costliest medication. In addition, 33% of products subjected controlled-release fluvoxamine to 'other' restrictions. This typically involved placement on tier 3 or 4 plus either prior authorization or step therapy (data not shown). For the other five medications, use of 'other restrictions' varied from 11% of plans (seligiline-transdermal) to 22% (desvenlafaxine).

We tested the importance of the key drug characteristics by estimating regressions to predict whether a drug was unrestricted, using a dataset with one observation per drug per plan (and controlling for clustering by plan). In this model (data not shown), medication age was a significant positive predictor of a drug being unrestricted ($p<.0001$) and medication cost was a significant negative predictor ($p<.05$). In addition, reformulation medications were less likely to be unrestricted ($p<.01$). These results correspond to what one would expect.

Management of the group of medications

In 2010, 55% of products used tier 3 or 4 placement as their only form of restriction across the group of these newer branded antidepressants (Table 3). This proportion was lower than in 2003, when 71% of products used this approach across the branded antidepressants on that survey. In addition, 2% of products left all of these newer branded medications unrestricted, down from 25% in 2003. The approaches that had increased in popularity were the use of other restrictions, with or without step therapy.

The role of plan characteristics

All the included plan characteristics appeared related to the plan's management approach ($p<.01$), when we simplified the approach to a three-category classification (Table 4). The only plans that left all six of these medications unrestricted were ones where behavioral health was internally managed. In addition, products with hybrid-internal management appeared more likely to use Tier 3 or 4 as the only management approach. This was also true of for-profit plans and those with no PBM contract.

Multivariate analysis was used to further investigate some of these relationships (Table 5). PPOs were more likely than other product types to use tiering, as were products without a PBM contract. PPOs were also less likely to leave at least two of these antidepressants unrestricted, whereas for-profit plans and those in the northeast region were more likely to do so. Not all the available plan characteristics could be used in these regressions due to some overly strong correlations, particularly with contracting arrangement variables.

Discussion

The findings from this study indicate that U.S. health plans are using a variety of strategies to manage cost and utilization of newer branded antidepressant medications.

Our drug-level findings indicate that for these six medications, plans rely heavily on tier placement and administrative controls, but rarely exclude any medication from coverage. This suggests that plans are finding that approaches other than exclusion are adequate to meet their cost-management goals. From a patient viewpoint, administrative controls are presumably preferable to outright exclusion, as long as the patient can still obtain a specific medication by having the physician advocate for it, and if the advocacy is successful. Similarly, placing some medications on a high cost-sharing tier burdens the patient less than outright exclusion, although high cost-sharing too may be problematic for certain patients, for example those on multiple medications or with low incomes. If these policies leave a patient unable to obtain the desired medication, their remaining option is to switch, which has greater clinical implications the less interchangeable the medications are.

In addition, our results indicate that the medications most likely to be unrestricted are older and less expensive. This corresponds to how one would expect health plans to manage medications. It is also clear that different plans are leaving different medications unrestricted. One important reason could be that different plans obtain rebates from each drug manufacturer. The results also indicate greater restrictiveness toward reformulation medications, although this finding is no more than suggestive, since we included only six medications.

Two key findings of this study are that more than half of health plan products use tier placement as their sole management approach for these six antidepressants, and that most of the remainder use administrative controls (prior authorization or step therapy) for at least one medication. When compared to similar data for 2003, these figures indicate a migration over time toward greater use of administrative controls, which were less commonly used for newer branded antidepressant medications in 2003.[22] There has also been a substantial increase in the proportion of plans imposing at least some restriction on one or more of the newer branded medications studied. Of course, this may partly be an artifact of asking about more medications (6 in 2010, compared to 4 in 2003), which presumably increases the likelihood that at least one will be restricted.

In terms of plan characteristics, it is not surprising that PPOs were more likely than other product types to use tiering. This is in line with the general philosophy that PPOs also apply to (non-pharmacy) medical care, where they are more likely than HMOs to use patient cost-sharing rather than administrative controls, to steer enrollees' choices.[24] The finding that for-profit HMOs left more medications unrestricted runs counter to the idea that for-profits manage costs more actively, but it could conceivably reflect greater attention to how restricting medication access affects a plan's overall health care costs.

A broader question is whether patients are disadvantaged by the access restrictions documented in this paper. Earlier debates about formulary effects noted the heterogeneity of treatment effects, whereby different patients fared better with different medications.[6] The

stronger this heterogeneity, the more problematic it might be to place barriers to use of certain medications. However, four of the medications we studied are reformulations, and therefore have potential close substitutes, unlike the medications considered in prior discussions of heterogeneity of effects. For example, if a reformulation medication is restricted, the patient could potentially replace it with a generic earlier version which is presumably unrestricted (e.g. replace Paxil-XR with generic paroxetine, etc.). In this case, the restriction of the reformulation appears not to have strong implications for access. However, it is still possible that the reformulation retains other advantages over the generic version, such as being better tolerated, more convenient to take, or other features likely to improve patient adherence. If so, the question becomes how the additional cost of achieving those benefits should be shared between the plan and the patient.

Currently, U.S. health plans have a relatively free hand in managing access to medications for enrollees in commercial insurance products, the group studied for this paper. The only federal regulation that currently affects formulary design for commercial enrollees is the Mental Health Parity and Addiction Equity Act (MHPAEA) of 2008, which stipulates that plans may not use formulary approaches that are more restrictive for mental health and substance use disorder treatment than for other medical care. To date, complaints about potential violations of this rule have chiefly related to HIV medications, not antidepressants.[25] Plans' management activities are subject to greater regulation in the case of Medicare enrollees, where they are required to cover 'all or substantially all' medications in the antidepressant class (and in five other classes). This regulation was intended to prevent health plans serving Medicare from over-managing certain medication classes in order to discourage enrollment by individuals with mental disorders, HIV/AIDS or cancer.[26] Similar concerns have been expressed about potential over-management in private insurance markets.[27] From the present study it was not possible to detect whether over-management might be occurring among private plans, as we only asked about a subset of medications in the class, and we lack equivalent information on nonpsychotropic medications against which to compare plans' approaches.

Health plans' current restriction approaches may have concerned policymakers more in the early 2000s than now, given that the newer drugs of that period had fewer close equivalents than those drugs which are newer today. Similarly, concerns may once again become greater in future years if new antidepressants are released that represent greater novelty relative to existing medications. However, a recent review concluded that the 'pipeline' for new psychotropic medications, including antidepressants, appears relatively empty for the next decade.[28]

Limitations

Several limitations of this study should be noted. First, we do not know how administrative restrictions such as prior authorization were applied in practice, only whether the plan reported applying them. Second, we were only able to ask about six medications, and plans may apply more or fewer restrictions to other antidepressant medications that we did not ask about. Third, there is some potential for endogeneity bias in the regression analyses. For example, plans' decisions about management of antidepressant medications and their

contracting choices may both be driven by some third factor, such as health plan officials' attitudes toward pharmacy spending. More generally, the impact on clinical outcomes was not examined in this study but should be studied using other data sources. Finally, nonpharmacological treatments too play an important role in depression care, and are widely used, but are not addressed in this paper as plans use substantially different approaches to manage pharmacy and nonpharmacy care.

Conclusion

This study has documented substantial use of various restrictions on access to newer branded antidepressants in U.S. commercial health plans. Concern about the restrictions is somewhat assuaged by the fact that plans used copayments and administrative controls, rather than outright exclusion; that they applied these selectively, not to all six medications; and that in any case most of these medications had generic equivalents that offered at least some substitutability. At the same time, it is worth noting that high copayments and administrative requirements can nonetheless be burdensome for some patients.

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Table 1

Characteristics of study sample

	N	Percent of plan products	Standard Error
Product type			
HMO	2,420	28.7	0.67
PPO	3,004	35.6	0.58
POS	2,613	31.0	0.38
CDP	390	4.6	0.64
Behavioral Health Contracting Arrangement			
External	1,251	14.8	2.33
Hybrid Internal	5,899	70.0	3.26
Internal	1,278	15.2	2.19
Contract with a Pharmacy Benefits Manager			
Yes	6,150	73.0	1.89
No	2,277	27.0	1.89
Profit status			
For-profit	7,390	87.7	1.98
Non-profit	1,037	12.3	1.98
Region			
Midwest	1,884	22.4	7.12
Northeast	777	9.2	2.92
South	3,917	46.5	8.04
West	1,849	21.9	7.56

Notes: Data are weighted. Total N = 8,427.

Table 2

Health plan management of individual antidepressants

Medication	Generic name	Price, 2010 **	Years on Market	Management approach:							
				Exclude		Tier 3 or 4 Only		Other Restriction		Unrestricted	
				%	SE	%	SE	%	SE	%	SE
Effexor-XR *	venlafaxine	$156	13	0.1	0.06	33.5	2.12	14.3	2.24	52.0	1.78
Lexapro *	escitalopram	$92	8	0.5	0.25	23.3	0.88	16.1	2.61	60.1	2.79
Cymbalta	duloxetine	$155	6	0.0	0.00	42.5	1.55	15.5	2.34	42.0	2.44
Emsam *	selegiline	$603	4	0.6	0.25	62.0	1.69	11.3	2.02	26.0	1.76
Pristiq	desvenlafaxine	$135	2	0.5	0.25	55.0	2.35	22.3	2.51	22.3	1.28
Luvox-CR *	fluvoxamine	$162	2	0.7	0.26	56.7	2.20	33.2	2.08	9.4	1.71

* denotes reformulation.

** average wholesale.

Note: Data are weighted.

Table 3

Health plan management of antidepressant drug class (weighted)

	2003		2010	
	%	SE	%	SE
Exclusions only	1.1	0.2	0.0	0.00
Tier 3 or 4 placement only	71.1	2.90	54.6	2.28
Prior authorization only	0.5	0.20	0.1	0.03
Prior auth. and Tier 3 or 4	0.4	0.20	0.2	0.22
Step therapy only	*		8.1	1.37
Other restrictions, no step therapy	*		21.0	1.13
Other restrictions, including step therapy	*		14.0	2.06
Other restrictions	2.3	1.00		
No restrictions	24.6	3.00	2.0	0.46
Total	100.0		100.0	
Mean number unrestricted	n/a	n/a	2.1	0.09
Number of observations (weighted)	7,194		8,231	

Notes: Data are weighted. N/a denotes not available.

* Not disaggregated in 2003.

Table 4

Health plan management of antidepressant drug class (simplified), by plan characteristics

	Percent of plan products using:		
Product type	**Tier 3 or 4only**	**Other restrictions**	**No restrictions**
HMO	45.0	53.8	1.2
PPO or CDP	60.0	35.8	4.3
POS	56.4	43.6	0.0
Behavioral Health Contracting Arrangement			
External	15.0	85.0	0.0
Hybrid Internal	72.2	27.8	0.0
Internal	4.8	80.1	15.1
Contract with Pharmacy Benefits Manager			
Yes	49.0	48.7	2.3
No	70.4	28.4	1.3
Profit status			
For-profit	59.4	38.6	1.9
Non-profit	14.2	82.7	3.1
Region			
Midwest	52.7	44.3	3.0
Northeast	50.1	48.3	1.6
South	57.4	42.1	0.5
West	52.4	43.1	4.6

Note: Data are weighted.

Table 5

Predictors of health plan management approaches to antidepressant drug class

	Any use of tiering			At least 2antidepressants unrestricted		
	Odds ratio	**95% CI**		**Odds ratio**	**95% CI**	
Intercept	**3.97**	**(2.19, 7.22)**	***	0.18	**(0.10, 0.30)**	***
Product type						
PPO/CDP (reference)	-	-				
HMO	0.47	(0.38, 0.59)	***	2.25	1.60, 3.15	***
POS	0.81	(0.74, 0.88)	***	1.25	1.09, 1.43	**
Contract with Pharmacy Benefits Manager						
No (reference)	-	-		-	-	
Yes	0.36	(0.23, 0.56)	***	-	-	
Profit status						
Non-profit (reference)	-	-		-	-	
For-profit	-	-		7.35	4.31, 12.53	***
Region						
South (reference)	-	-				
Northeast	0.70	(0.42, 1.16)		1.96	1.28, 3.02	**
Midwest	0.80	(0.55, 1.18)		1.26	0.66, 2.42	
West	0.76	(0.53, 1.10)		0.95	0.67, 1.35	
Number of observations	8,231			8,231		

Note: Data are weighted. Results are from logistic regression analyses. Some explanatory variables had to be omitted in each model due to high correlations. CI = confidence interval.

*** denotes p<0.01,

** denotes p<0.05.