Mental Health Policy and Psychotropic Drugs

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The pace of innovation in psychotropic drugs has been rapid over the past 15 years. There also have been unprecedented increases in spending on prescription drugs generally and psychotropic medications specifically. Psychotropic medications are playing a more central role in treatment. They also are receiving close scrutiny from health insurers, state budget makers, and ordinary citizens. Public policy actions regarding prescription drugs have the potential to significantly affect clinical care for mental disorders, the costs of this care to individuals and society at large, and the prospects for future scientific advances. This article outlines the policy issues related to psychotropic drugs with respect to their role in determining access to mental health treatment and the cost and quality of mental health care.

Key Words: Psychotropic drugs, mental health treatment, mental health policy, managed behavioral healthcare.

IN THE PAST 15 YEARS, THE PHARMACEUTICAL INDUSTRY has provided a host of new psychotropic drugs to clinicians treating mental disorders. Two major new classes of psychotropic drugs have been introduced, and nine new antidepressant agents and five new antipsychotic drugs have been approved by the U.S. Food and Drug Administration (FDA) since 1988.

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Psychotropic drugs are playing an increasingly central role in the treatment of mental disorders. By 1996, they were used in 77 percent of mental health treatment cases (Frank and Glied, 2005 tabulations from the Medical Expenditure Panel Survey). This trend has been accompanied by unprecedented rises in spending on prescription drugs generally and psychotropic medications specifically. The amount of money spent on psychotropic drugs grew from an estimated $2.8 billion in 1987 to nearly $18 billion in 2001 (Coffey et al. 2000, Mark et al. 2005), and the amount spent on psychotropic drugs has been growing more rapidly than that spent on drugs overall (IMS Health 2005). For example, spending on antidepressant and antipsychotic medications grew 11.9 percent and 22.1 percent, respectively, in 2003, whereas spending on drugs overall grew at 11.5 percent in 2003 (IMS Health 2005).

The large shifts in the clinical and economic roles of prescription drugs have been affected by important institutional and policy changes in the general medical and mental health sectors. The expansion of insurance coverage for prescription drugs, the introduction and diffusion of managed behavioral health care techniques, and the conduct of the pharmaceutical industry in promoting their products all have influenced how psychotropic drugs are used and how much is spent on them.

Psychotropic drugs are receiving close scrutiny from health insurers, state budget makers, and ordinary citizens. Actions by the public policy and private sectors regarding prescription drugs can significantly affect clinical care, the cost of that care, and the prospects for future scientific advances and investment in drug development.

In this article, we analyze the economic and policy forces that have produced the high levels of utilization and spending on psychotropic drugs and consider policy issues related to these drugs' influence on the access to and cost of mental health care, as well as the quality of that care. We begin by presenting data on the level and growth in utilization of and spending on psychotropic drugs. We then review the evidence on the reasons for the rapidly expanding use of these drugs. Next, we review several public policy challenges and offer some ideas for state and federal policy in this area. Finally, we describe the key institutions governing the production and delivery of psychotropic drugs and how these institutions affect access to these drugs.

Growth in Utilization and Spending on Psychotropic Drugs

The rapid development of new products and the inclusion of the newer psychotropic drugs in the usual treatment for mental illness have translated into large increases in spending on them. Table 1 shows data based on estimates of expenditures on mental health care between 1987 and 2001 (Coffey et al. 2000, Mark et al. 2005). In 2001, the amount of money spent on psychotropic drugs to treat mental disorders was estimated to have been $17.8 billion, or 21 percent of all expenditures for the treatment of mental disorders. This represents more than a sixfold increase in nominal spending (without adjusting for inflation) since 1987. It also means that the amount spent on drugs has risen from a relatively modest share of total spending, 7.7 percent in 1987, to exceed the share of spending traditionally spent for physician services (Coffey et al. 2000). Since 1997, spending on psychotropic medications has outpaced spending on both health and drugs overall. By 2003, more than $18 billion was spent on antidepressant and antipsychotic drugs (IMS Health 2005). Between 1992 and 1997, the amount that the nation spent on psychotropic drugs grew at twice the rate of that spent on drugs overall (Coffey et al. 2000).

In addition to the growth in spending on psychotropic medications, these drugs also have been playing a more central role in the treatment of mental disorders. Data from national household surveys in 1977, 1987, and 1996 (NMCES, NMES, MEPS) suggest that the treated prevalence of mental disorders (the percentage of the adult population receiving mental health treatment) climbed from 5.2 percent in 1977 to 7.7 percent

TABLE 1
National Expenditures on Psychotropic Drugs

	1987	1992	1997	2001
Nominal spending	$2.77 billion	$3.83 billion	$9.04 billion	$17.83 billion
Percentage of mental health spending	7.7%	7.2%	12.8%	21.0%

Source: Coffey et al. 2000, Mark et al. 2005.

in 1996 (Frank and Glied 2005). During the same time period, the rate of treatment of mental disorders with psychotropic drugs rose from 3.3 percent in 1977 to 5.9 percent in 1996. Thus, in 1977 about 63 percent of people treated for a mental disorder were treated with drugs, compared with 77 percent in 1996. These data imply that essentially the entire increase in treated prevalence was due to the expanded use of psychotropic drugs for treating mental disorders.

The two largest (measured in sales) classes of psychotropic drugs are the antipsychotic and antidepressant agents. In 2003, sales of antipsychotic agents amounted to $8.1 billion, representing an increase in spending of 22.1 percent over that of the prior year (IMS Health 2005). In 2003, the sales of antidepressant medications in the selective serotonin reuptake inhibitor class (SSRI) and the serotonin-norepinephrine reuptake inhibitor classes (SNRI) were $11 billion, having grown 11.9 percent over the 2002 levels (IMS Health 2005). More recently, the growth in spending on antidepressants has accounted for 9 to 10 percent of the growth in pharmacy spending overall (Express Scripts 2001; NICHM Foundation 2002). Finally, the sale of antianxiety drugs came to about $2.5 billion in 2001, rising at a much lower average rate of 4 percent per year.

The growth in spending for these three classes of psychotropic drugs has been driven by the introduction of new products selling at higher prices and the greater utilization and higher prices of existing drugs. Overall, nearly half the increases appear to have been due to greater utilization. Roughly 28 percent of the increase was due to the changing mix of drugs (new products) used and 23 percent to the rising prices of existing products (Berndt 2002). The case of antipsychotic medication highlights the impact of new products. The sale of atypical antipsychotic drugs (except clozapine) climbed almost 43 percent per year between 1997 and 2001, whereas the sales of traditional antipsychotic drugs and clozapine declined by 11 percent and 1 percent per year, respectively. Thus, overall it appears that all the growth in antipsychotic medication spending over this time period was due to changes in the price and volume of the newer drugs. Specifically, Medicaid spent five times more for antipsychotics in 2001 than it did in 1993, a trend driven mostly by a shift to the use of Zyprexa, Risperdal, and Seroquel (Duggan 2004). Indeed, in regard to Medicaid's spending overall on prescription drugs, these drugs are now ranked first, second, and eighth, respectively.

Why Has the Use of Psychotropic Drugs Grown?

In this section we examine the scientific, policy, and market forces that have contributed to the expanded use of psychotropic medications. Table 2 presents the types of pharmaceutical agents currently available and the mental disorders they treat. The drug classes that have been introduced since 1987 include the atypical antipsychotic drugs, SSRIs, SNRIs, and some of the anticonvulsants used to treat bipolar disorder. Given these new product classes, Table 2 serves to highlight how much new product areas have expanded the effective treatment options available to clinicians treating major mental disorders.

TABLE 2
Pharmacotherapy Classes and Mental Disorders

Drug Class	Disorders
Antipsychotics	
Typical antipsychotics	Schizophrenia
Atypical antipsychotics	Schizophrenia, bipolar disorder
Antidepressants	Depression, anxiety disorders
Selective serotonin reuptake inhibitors (SSRIs)	
Tricyclic and heterocyclic antidepressants (TCA/HCAs)	
Monoamine oxidase inhibitors (MAOIs)	
Serotonin-norepinephrine reuptake inhibitors (SNRIs) and other antidepressants	
Stimulants	Attention deficit–hyperactivity disorder
Mood stabilizers	Bipolar disorder
Lithium	
Anticonvulsants	
Thyroid supplementation	
Antianxiety medications	Anxiety disorders
Benzodiazapines	
β-Adrenergic blocking agents	

Gains in Efficacy and Effectiveness

One reason that psychotropic drugs are being used more is related to the clinical advantages offered by these new agents over older pharmacological treatments (U.S. Department of Health and Human Services 1999). Studies have found that SSRIs and tricyclic antidepressants (TCAs, an older class of antidepressants) are of comparable efficacy. However, the surgeon general stated that SSRIs are safer, better tolerated by patients, and easier for clinicians to prescribe because they offer simpler dosing schemes, pose less danger from overdose, and have more tolerable side effects (U.S. Department of Health and Human Services 1999). (This conclusion would be sustained today, even though the FDA has issued a "black box warning" of a greater risk of suicidal thoughts in children and adolescents when taking any antidepressant medications.) Three meta-analyses in the 1990s found SSRIs and TCAs to be of comparable efficacy, but the SSRI treatments had significantly lower rates of patient dropout during the clinical trials (Anderson and Tomenson 1994; Le Pen et al. 1994; Montgomery et al. 1994; Song et al. 1993). Another recent meta-analysis found that the overall dropout rates from treatment with SSRIs was 10 percent lower than with TCAs (Anderson and Tomenson 1995). The same analysis also found that dropouts due to side effects were 25 percent lower with SSRIs, compared with TCAs.

A growing body of literature suggests that there are meaningful differences in the way patients take SSRIs as a result of their ease of use and more tolerable side effects. The evidence that SSRI recipients are more likely to take adequate doses of medication and adhere to the prescribed therapy compared with TCA recipients is consistent with the findings from studies of usual care that a higher percentage of patients receive evidence-based treatment when they use new agents (Katon et al. 1992; Montgomery et al. 1994; Simon et al. 1993). One example from this literature compared claims data from a state Medicaid plan for SSRI and TCA users and found better adherence to prescribed treatment by those taking newer antidepressants (Croghan et al. 1998). Those taking SSRIs and adhering to their prescribed treatment regimen substantially improved in the time to relapse or recurrence of depression. Other clinical studies have found that longer lengths of therapy and compliance with prescribed therapy are associated with improved work functioning and reduced likelihood of relapse or recurrence of major depression (Finkelstein, Berndt, and Greenberg 1996; Mintz et al. 1992).

Although SSRIs are most often prescribed for depressive disorders, they also are used to treat a variety of other psychiatric conditions. Several have received FDA approval for these uses. In fact, some of the most significant clinical gains have come from using SSRIs to treat anxiety disorders, such as obsessive-compulsive disorder. While all SSRIs have antiobsessional effects, only Clomipramine among the TCAs has such properties. There also is growing evidence that SSRIs are effective in treating other anxiety disorders, such as panic disorder, social phobia, and posttraumatic stress disorder (USDHHS 1999).

Schizophrenia is another illness for which novel, pharmaceutical-based treatments have recently been introduced. There is an ongoing debate about whether the new generation of antipsychotic drugs are more efficacious for all patients with schizophrenia. An important exception to this debate, however, is the case of clozapine for patients with refractory schizophrenia (Lehman et al. 1998). For these patients (who account for nearly 30 percent of all patients with schizophrenia), clozapine is more efficacious than traditional antipsychotic agents (Chakos et al. 2001). Furthermore, the effect of the use of newer antipsychotics on schizophrenic patients' quality of life has been well documented (Rosenheck et al. 1997). There also is widespread agreement that the new generations of antipsychotic medications carry less likelihood of neurological (extrapyramidal) side effects. Patients also find them easier to tolerate (Rosenheck et al. 1997). There has been considerable public concern over certain side effects associated with the atypical antipsychotic agents. In particular, case reports note the risks of diabetes, weight gain, and hyperlipidemia. The research to date on the subject is quite mixed. Some studies show weight gain for two specific agents (clozapine and olanzapine) but not others; other studies show no differences; and some observe that the older drugs have higher risks (Allison et al. 1999; Lund, Perry, and Brooks 2001; Newcomer et al. 2002; Wirshing et al. 1999). The methods and data sources used are of varying rigor and reliability.

Expanding Insurance Coverage

The expanded insurance coverage for prescription drugs has also affected the growth in spending and use of psychotropic drugs. Since the late 1970s, insurance coverage for prescription drugs in the United States has grown substantially. Despite the long history of differential insurance coverage of mental health services, prescription drugs for the

treatment of mental disorders are generally covered at "parity" with other medical treatments. Today, all states offer prescription drug coverage to Medicaid recipients, including those dually eligible for both Medicare and Medicaid (Kaiser Family Foundation 2001a). Currently, although Medicare does not cover outpatient prescription drugs, most Medicare recipients have supplemental insurance (so-called Medigap plans), coverage through previous employers, or Medicaid (Gluck and Hanson 2001). In 2006, Medicare is to begin offering eligible recipients prescription drug coverage. Private insurance coverage of prescription drugs has expanded from covering 40 percent of enrollees in 1980 to covering 77 percent in 2000 (Kaiser Family Foundation 2001b). The U.S. Department of Veterans Affairs also provides prescription drugs for a sizable number of veterans each year.

The expansion of insurance coverage has reduced the financial burdens of treating mental disorders and has broadened the use of psychotropic medications. Tabulations from the 1977 National Medical Care Expenditure Survey (NMCES) and the 1996 Medical Expenditure Panel Survey (MEPS) show that the out-of-pocket share of spending on psychotropic drugs declined from 67 percent in 1977 to 34 percent in 1996. This was accompanied by more than a doubling of the number of prescriptions per user and a fivefold increase in total spending (Frank and Glied 2005).

Managed Behavioral Health Carve-outs

Those institutions that are responsible for managing medical care also have contributed to the expanded use of psychotropic medications. Specifically, as managed care has come to dominate the health care delivery system, the managed behavioral health care (MBHC) carve-out has gained a central place in the delivery of mental health care in both the private and public sectors. It is estimated that 60 to 72 percent of people covered by insurance are enrolled in managed behavioral health care arrangements (USDHHS 1999). In addition, as of 2002, 18 states had carved out mental health services for their Medicaid enrollees (Ling, Frank, and Berndt 2002). Carve-outs separate mental health and substance abuse care from the rest of the health insurance benefit and manage those services under a different contract with a specialty vendor. Carve-out contracts rely on economies of scale and specialization in order to provide greater efficiency.

The typical MBHC carve-out manages inpatient, outpatient, residential, and intensive outpatient services but does not cover prescription drugs, which are paid for under the general medical benefit. In effect, prescription drugs are "free" inputs to the specialty mental health delivery system, and carve-out vendors have a strong economic incentive to substitute drug treatments for other mental health services when possible. They do this by making it easier for patients to obtain referrals for medication management and psychopharmacology than referrals for psychotherapy. The evidence to date suggests that drug spending has increased under carve-out arrangements with private insurance plans when compared with integrated delivery systems (Berndt, Frank, and McGuire 1997; Busch 2002; Rosenthal 1999). A recent study estimated that instituting carve-out arrangements in Medicaid raised the number of both antidepressant and antipsychotic prescriptions (Ling, Frank, and Berndt 2002).

Direct to Consumer Advertising

Finally, direct to consumer advertising (DTCA) has contributed to the growing use of psychotropic medications. DTCA is a relatively new phenomenon in markets for prescription drugs, dating to the mid-1990s (Rosenthal et al. 2002). Most of the spending on DTCA is on a relatively small number of products. In the past decade, psychotropic medications, most notably Prozac and Paxil (before their patent losses), were consistently among the top prescription drug products as measured by DTCA spending (Frank et al. 2002). In 2004 approximately $193 million was spent on DTCA for antidepressant medications. Recent surveys have shown that more than 90 percent of the public reported having seen prescription drug advertisements (*Prevention Magazine* 2002/3).

Recent research by Donohue and colleagues (2004) examined the role of DTCA in therapeutic choice. Using data on health care claims from private insurance and advertising expenditures, they studied the choice of using either drugs or psychotherapy to treat depression and the impact of DTCA on the persistent use of medications as suggested by clinical guidelines (AHRQ 1999). The results suggested that exposure to DTCA is associated with a greater likelihood of using a psychotropic medication to treat depression. They also showed a small positive impact on the duration of treatment (Donohue et al. 2004).

DTCA remains highly controversial. Critics blame it for the rising spending on and inappropriate use of prescription drugs (Wolfe 2002). In contrast, the pharmaceutical industry claims that DTCA informs consumers about their therapeutic choices, thereby enabling them to make better decisions and, in the case of mental disorders, helping reduce stigma (Holmer 2002).

Increased Use of Psychotropic Drugs and Impacts on Quality and Access to Care

These forces have translated into a greater willingness by physicians to make psychotherapeutic drugs a central feature of treating mental illness. In 1977, about 63 percent of visits for the care of mental disorders in the United States included the use of psychotropic drugs. By 1996, even as the rate of episodes of mental health care had increased, psychotropic drugs were prescribed in about 77 percent of such visits (Frank and Glied 2005). A significant portion of these visits were made to primary care physicians, who may be more likely to use these medications because of the ease of dosing and the greater safety of the new psychotropic drugs, particularly the SSRIs.

One effect of the availability and greater use of newer psychotropic agents is the movement toward improved quality in usual care. For example, recent research shows that the percentage of treatments for major depression in private insurance that adhered to AHRQ/APA practice guidelines rose from 35 percent in 1991 to 56 percent in 1996 (Berndt, Busch, and Frank 2000). This estimate aligns well with the usual care arms of recent effectiveness trials and the estimates of adequate treatment from the second National Comorbidity Study (Kessler et al. 2003). For example, Wells and colleagues (2000) found that 50 percent of patients in the usual care arm received appropriate care for depression. Kessler and colleagues (2003) reported that of those patients with major depression receiving some treatment, between 41 percent and 64 percent received adequate care.[1]

Paying for Psychotropic Drugs and the Role of Medicaid

As noted earlier, third-party payers play a large role in the financing of mental health care featuring psychotropic drugs, and among these

third-party payers, the government is an especially important purchaser of psychotropic drugs (Berndt 2002). Nationally, Medicaid paid for 17.5 percent of all prescription drugs in 2002, with prescription drugs accounting for approximately 11.4 percent of all Medicaid spending (Center for Medicare and Medicaid Services 2004). In fact, Medicaid is the nation's dominant purchaser of antipsychotic medications, accounting for approximately 80 percent of all antipsychotic prescriptions in 2001. Medicaid also was responsible for 15 percent of all payments for antidepressant medications in 2001 (Berndt 2002). Recent data from the Massachusetts Medicaid program suggest that about 50 percent of the Medicaid pharmacy budget was spent on psychotropic medications (Kowalczyk 2002). The most money spent on the psychotropic drugs was for three of the new atypical antipsychotic drugs: olanzapine (brand name Zyprexa), quetapine (brand name Seroquel), and respiridone (brand name Risperdal); three of the SSRI antidepressants: fluoxetine (brand name Prozac), sertraline (brand name Zoloft), and paroxetine (brand name Paxil); and an anticonvulsant used to treat bipolar disorder: divalproex sodium (brand name Depakote). The U.S. Department of Veterans Affairs and local governments also are large purchasers of psychotropic medications.

Currently, the Medicare program does not cover outpatient prescription drugs, although Medicare beneficiaries who also qualify for Medicaid do have prescription drug coverage. Approximately 18 percent of Medicare recipients are considered "dually eligible" for Medicare coverage (Congressional Budget Office 2002). These individuals are frequent users of mental health services and a significant source of drug spending by state Medicaid programs (Kaiser Family Foundation 2004a). In the mid-1990s, about 18 percent of the spending for the dually eligible was for prescription drugs (SAMHSA 2000).

The private sector also spends a large amount on psychotropic drugs. Private third-party payments for antipsychotic and antidepressant drugs added up to 40 percent of spending for pharmaceuticals in 2001 (Novartis 2000). Finally, psychotropic drugs are less likely to be paid out of pocket than are all types of drugs by consumers. In 1996, about 34 percent of spending on psychotropic drugs was paid out of pocket, compared with 42 percent for all drugs (Frank and Glied 2005).

Taken together, these data indicate that private third parties play an important role but do not account for the majority of payments for psychotropic drugs. Out-of-pocket payments amounted to about 34 percent

of spending, and government sources (primarily Medicaid and the VA) accounted for 20 to 25 percent of all spending on psychotropic drugs. In some clinical areas, such as antipsychotic medications, government in the form of Medicaid is the dominant purchaser.

Policy Challenges and Recommendations

In this section, we highlight several challenges facing policymakers that are raised by the tensions inherent in the introduction of these novel psychotropic drugs, treatment changes, and concomitant spending trends.

The mental health delivery system has devised rules for managing care that are not economically neutral with respect to therapeutic choices. Prescription drug coverage for psychotropic drugs is at parity with other types of drugs. Thus, drug coverage is typically generous relative to, for example, psychotherapy. Those people with private insurance plans frequently must pay 50 percent of their psychotherapy. Compared with the $10 or $20 copayments for drugs, these prices encourage the use of prescription medications. Another important institution is the managed behavioral carve-out, that is, the management of the mental health benefit by a separate vendor. According to the evidence to date, most carve-out arrangements offer incentives for clinicians to rely on psychotropic drugs. This may result in a de-emphasis on complementary psychosocial treatments, but no studies have demonstrated an adverse effect on outcomes (Busch, Frank, and Lehman 2004).

The financial incentives inherent in current institutional arrangements show a possible advantage to better aligning clinical decision making and care management. Ideally, such policy would result in an assessment of clinical benefits and costs that accurately reflected the true gains to consumers and the true costs to payers and society. An alignment of financial incentives, accountability, and responsibility is expected to result in a less fragmented system of care and higher quality of care for people with mental disorders.

One approach to aligning incentives and reducing fragmentation is to create direct linkages among health plans, PBMs (pharmaceutical benefit managers), and MBHC carve-out vendors. Performance requirements in managed care contracts that involve the coordination and shared responsibility for appropriate prescribing of psychotropic drugs by

physicians would encourage communication between primary care physicians and mental health professionals. Such provisions would also possibly encourage an altered approach to managing care with psychotropic drugs. The sharing of financial gains and costs by PBMs, health plans, and carve-out vendors would promote their integration by giving all parties a financial stake in the outcome associated with efficient care. Within the Medicaid program this approach could be advanced by regulation and the performance monitoring of HMO carve-out contracts and via the contracts with carve-outs that contract directly with state Medicaid agencies. Several states, including Massachusetts, Arizona, Colorado, and Iowa, have already implemented such strategies.

Over the long term, the states' constant pressure to reduce the taxpayers' burden may produce unintended consequences for innovation in specific classes of medications. Although this may not be a concern for most therapeutic classes, the purchasing of antipsychotics is an important but unique case in point. One distinguishing characteristic of prescription drugs is that they can be produced for pennies a pill, even though it costs hundreds of millions of dollars to bring a new drug to market. The ability of prescription drug manufacturers to sell their products for prices that allow them to recover the economic costs of developing new drugs creates an economic incentive to engage in the long, risky, and costly process of pharmaceutical research and development (U.S. Congress 1993).

Likewise, the payer's ability to negotiate a "good" price for medications purchased from manufacturers depends on the amount of competition in a therapeutic class and the similarity of competing medications. The ability to obtain price concessions depends directly on how effectively a purchaser can limit the choice of competing drugs and thus redirect demand. For example, in recent years the development of new managed care approaches such as incentive formularies has enhanced the ability of buyers to buy drugs at more advantageous prices. The pharmaceutical companies are still encouraged to innovate, since new, therapeutically superior drugs enjoy patent protection, allowing manufacturers to temporarily command monopoly prices. In addition, each of the plethora of private insurance health plans and formulary arrangements accounts for a modest share of the purchases of psychotropic drugs. This system thus diminishes the bargaining power of any one purchaser to obtain price concessions on new medications and therefore to directly affect research and development decisions.

The Role of Medicaid

State governments administer the Medicaid program and oversee public mental health care systems, which are the two main purchasers of antipsychotic medications. In particular, in 2003 the states bought approximately 80 percent of all atypical antipsychotic medications (Duggan 2004). Thus, the states have an unusually strong bargaining position for price concessions from drug manufacturers for atypical antipsychotic medications. Consequently, state policies aimed at containing the costs associated with antipsychotic medications in the short term may also influence the manufacturers' longer-term investment decisions if they accept the potential impact of lower prices on their research and development choices.

The majority of state governments operate under constitutional balanced budget requirements, resulting each year in a stream of policies aimed at containing the costs of large state programs, prominent among which are Medicaid and public education. The rapid rise in spending on prescription drugs between 1997 and 2003, when psychotropic drugs were among the fastest-growing segments of prescription drug spending, has caused many state governments to enact policies specifically curbing this growth. These cost pressures have resulted in the rapid adoption of measures to limit spending on and the use of prescription drugs (Kaiser Family Foundation 2004b).

Generally, the states have been very cautious in applying cost control measures to psychotropic drugs. A recent survey by the Bazelon Center showed that by 2003, 20 states had adopted drug lists. Of those states, 15 had exempted some psychotropic drug classes from the preferred drug list. Most states also exempt psychotropic drugs like antidepressants, antipsychotics, and anticonvulsants from prior authorization requirements (www.bazelon.org). The point here is that the states' prescription drug policy could have a far more consequential impact on the market for antipsychotic medications than nearly any other segment of the pharmaceutical industry. Therefore, a departure from this current policy stance with respect to antipsychotic agents could fundamentally alter the economics of developing and marketing those products.

For government purchasers concerned about rising prescription drug costs, one promising avenue for saving money on psychotropic medications that has few clinical trade-offs and little threat to R&D is the expanded use of generic medications. If the patent policy allows for an

adequate period of exclusivity, then the profits will be sufficient to promote R&D during the "on-patent" period. The implication is that intense price competition during the "off-patent" period will have little effect on overall R&D incentives and will create savings for consumers. We examined this proposition by estimating the current value of earnings (at launch) of fluoxetine (Prozac) and paroxetine (Paxil), using industry discount rates of 10 percent and 15 percent and assuming that 90 percent of sales were lost six months after the patent loss. We calculated that the profits lost amounted to about 10 percent, which left discounted earnings well above any reasonable estimates of development costs offered in the literature. The opportunities to use this strategy are growing rapidly, as drugs like fluoxetine (Prozac), mirtazapine (Remeron), and paroxetine (Paxil) have lost their patent protection, and sertraline (Zoloft) and citalopram (Celexa) are expected to follow shortly.

Overall, health plans and payment programs vary widely with respect to the generic penetration rate (Ritter, Thomas, and Wallack 2001). It is estimated that if the measures producing the highest rates of generic penetration found in the private sector were adopted for the elderly (under pre–Medicare Modernization Act conditions), this would yield savings of 16 percent in prescription drug spending per year. The experience with patent loss for Prozac highlights these possibilities. Within one month of the patent loss, Express Scripts (a PBM) shifted 80 percent of its prescriptions for Prozac to the generic product. Historically, within a year of a generic launch, generic prices fall to between 30 and 50 percent of the brand price at the time of the launch. Thus conservatively, a year after the generic launch, payers might well realize savings of around 40 percent (80 percent times 50 percent).

The Medicare Modernization Act (MMA)

No discussion of prescription drug policy would be complete without mentioning the new Medicare prescription drug benefit. The Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003 (P.L. 108-173) adds a voluntary outpatient prescription drug benefit to the Medicare program through Part D plans, effective January 1, 2006. Medicare beneficiaries will be able to obtain drug benefits through either the new stand-alone prescription drug plans or the integrated private health plans under the Part C Medicare Advantage program. Responsibility for prescription drug coverage for dually eligible individuals

will be transferred from state Medicaid programs to Medicare. The program also will subsidize premium and out-of-pocket costs for Medicare beneficiaries with incomes below 150 percent of poverty and limited assets.

The design of the Medicare drug benefit raises three significant issues for Medicare beneficiaries with mental disorders. First, the reliance on stand-alone drug plans in the context of the Part D benefit creates strong incentives for prescription drug plans (PDPs) to compete in order to avoid expensive enrollees (Pauly and Zeng 2004). People with mental disorders may be especially hurt by such economic dynamics. Second, the provisions of the MMA that shift dually eligible beneficiaries from Medicaid to Medicare drug coverage may also hurt people with mental disorders. Third, because Medicare beneficiaries with mental disorders frequently do not have prescription drug coverage, the new benefit offers coverage that may be especially helpful. Each of these points merits a brief discussion.

PDPs will compete for enrollees and will be at some financial risk for spending on prescription drugs. Therefore they will have a strong financial incentive to design their formularies and management processes to attract relatively inexpensive enrollees and to avoid expensive ones. The proposed risk adjustment system is based on demographic and diagnostic predictors of spending (see Final Rule at www.cms.hhs.gov). Because these predictors have been shown to account for only a modest portion of the explainable variation in spending (Wrobel et al. 2003/4), this unexplained variation leaves substantial opportunities for plans to gain from adverse selection.

Elderly people who use psychotropic drugs have relatively high drug costs, making them enrollees to be avoided. The MMA requires that two drugs from each therapeutic class must be placed on each PDP's formulary. The formulary guidelines issued by the Centers for Medicare and Medicaid Services define very broad classes of psychotropic drugs (e.g., all antidepressants). This means that it is possible in theory to offer a plan with a formulary that does not cover the drugs most frequently used in the modern treatment of depression. A design of that type would clearly be highly unattractive to enrollees anticipating a need for antidepressant medications.

Medicare beneficiaries who are dually eligible for Medicare and Medicaid will obtain prescription drug coverage under the terms of the new Part D benefit. People with mental disorders are disproportionately

represented in this population (SSA program statistics at www.ssa.gov). A consequence of the MMA will be that this population will be shifted from a prescription drug benefit that is generally quite unrestricted (Medicaid) to one that will likely have far more elaborate controls on coverage and utilization (Part D coverage under PDPs). The result will be that dually eligible people with mental disorders may be hurt by the more restricted coverage.

Finally, low-income Medicare beneficiaries who are not dually eligible appear set to benefit from the new legislation if their incomes are below 150 percent of poverty and they have limited assets. This population has relatively high rates of mental disorders but may have had little access in the past to medication-based treatments, owing to little or no insurance coverage. The new Medicare benefit will provide insurance for psychotropic medications and therefore enhance these beneficiaries' access to needed treatment. This subset of Medicare beneficiaries with mental disorders will clearly gain as a result of the legislation.

FDA Regulation and Approval of Psychotropic Drugs

Regulation of the development and testing of psychotropic drugs presents a policy challenge. A large share of antidepressant, antipsychotic, and mood-stabilizing agents are used in the continuation and maintenance treatment of schizophrenia, bipolar disorder, and major depression. Positive economic consequences of treatment (such as reduced absenteeism and enhanced job performance) may not appear for 3 to 24 months after the treatment is begun. Regulatory evaluation and approval typically require information about the safety and effectiveness of medication after six weeks of drug exposure. Accordingly, decisions about payment, inclusion, placement in formularies, and clinical management are usually not informed by data on long-term clinical or economic consequences. In addition, psychotropic drugs are being used more and more for off-label purposes, for which there is little systematic clinical evidence of benefit. Thus, there appears to be a market for unbiased, easily accessible, and understandable pharmaceutical information that includes long-term clinical and economic outcomes of drugs to better guide decisions by clinicians, patients, and health care institutions.

The trend toward having the consumers share more of the cost of medications places more emphasis on their preferences for treatment.

This may be particularly important for persistent chronic diseases, such as mental illness, for which the cost burden may be high and treatment benefits may be accompanied by trade-offs in dosing and side effects. DTCA and other marketing efforts sponsored by pharmaceutical manufacturers are currently among the most accessible sources of information regarding pharmaceutical treatments' benefits and trade-offs for patients and their physicians. For all these reasons, some researchers and policymakers have called for the creation of an agency charged with developing and providing more complete, balanced, and timely information to the market.

Institutions Shaping the Policy Responses to These Trends

A number of distinct payers, managed care organizations, and public agencies influence the availability, utilization, and cost of psychotropic drugs. Together, these institutions affect what drugs will be available and when, as well as the rules under which the drugs will be purchased and which parties will bear the costs of particular prescription drug transactions. In this section we briefly review the important payers and institutions.

Pharmacy Benefit Managers (PBMs) and Formularies

Most private insurers and health plans hire pharmacy benefit managers (PBMs) to buy drugs and manage their prescription drug benefit. PBMs operate under contracts with health insurers and, in some cases, employers. These contracts seldom carry much financial risk. Rather, they typically charge a fee for maintaining the benefit and, in rare cases, include a bonus payment for performance on cost and/or quality measures.

Formularies and their associated incentives are the most important tools used by PBMs to control drug costs. Formularies are lists of drugs with information about how they can best be used. Formularies derive economic importance from their ability to steer patients to specific drugs or, in industry parlance, "to move market share." The savings that a formulary can generate depends on how well it is used to direct patients to less expensive agents in a therapeutic class. Private health plans that institute formularies often list only a subset of drugs within a therapeutic class as preferred drugs. A recent study of California formularies by

William M. Mercer, Inc. (2001) showed that in the SSRI therapeutic class, most formularies identified two or three drugs as preferred agents.

The link between the PBMs' negotiating power and their ability to redirect demand for particular drugs results in trade-offs among enrollee choice, flexibility in drug use, and the cost of prescription drugs. Formularies come in three general forms: open, closed, and mixed. These arrangements, especially for mixed and closed formularies (sometimes called *incentive formularies*), strengthen the plan's ability to steer patients toward particular drugs (and restrict access to other medications) through price incentives. Incentive formularies cover about 67 percent of privately insured people (Kaiser Family Foundation 2004c). A popular form of an incentive formulary is the three-tiered formulary, under which insured consumers are offered three levels of copayment for prescription drugs. Generic drugs carry the lowest copayment (e.g., $10); preferred or on-formulary drugs carry the second-tier copayment (e.g., $15); and non-formulary drugs carry the highest level of cost sharing (e.g., $35). PBMs create competition among manufacturers within a therapeutic class (such as the SSRIs) for the placement of their products in the second rather than the third tier. This permits PBMs to bargain for price concessions from manufacturers.

The incentives and rules that accompany a formulary are critical to determining the economic power of a formulary arrangement. These rules include prior authorization requirements, the responsiveness and accessibility mechanisms by which consumers can appeal formulary provisions that do not cover the drugs recommended by their physician (PBMs and health plans have internal processes by which such appeals can be adjudicated), generic substitution requirements, and differential cost-sharing levels. The use of these rules in conjunction with a formulary may translate into significant cost savings. The Congressional Budget Office estimated the PBMs' cost savings under a Medicare drug benefit from the implementation of formulary and other management methods to range from 10 to 30 percent (Congressional Budget Office 2002). The range is calculated by the strength of the rules and the incentives for PBMs to save money.

Medicaid Prescription Drug Benefit Design

Medicaid programs are not required to include prescription drugs in their benefit packages, although all have elected to do so. In this section we focus on the tools that states use to control prescription drug

spending under Medicaid. The first approach is to delegate responsibility and assign financial risk to a managed care organization. In 2002, approximately one-half of Medicaid beneficiaries were enrolled in managed care arrangements. For these enrollees, the health plan typically buys prescription drugs in the same way as private insurance does, using PBMs. The health plan also is responsible for the benefit design of the drug plan and the management of its utilization.

The second approach to controlling drug spending is for the states to design policies that govern the Medicaid drug benefit. In general, those states that elect to cover outpatient prescription drugs in their Medicaid program must cover all FDA-approved drugs of every manufacturer that has entered into an agreement with the secretary of health and human services to pay rebates to the states for the products they purchase (Social Security Act). These rebates are based on the difference between the retail prescription drug prices and a price determination process set out in a 1990 statute (discussed later). Within this general framework, the states have considerable flexibility to design their outpatient drug benefit to be similar to that of private plans and thus influence access to medications and associated spending. For example, the states may exclude a drug from coverage if the prescribed use is not for a medically accepted indication. States may also adopt formularies that exclude some drugs from Medicaid coverage. They may also restrain the use of prescription drugs through other benefit tools such as amount, duration, and scope limitations; prior authorization requirements; and prospective and/or retrospective drug utilization review (DUR).

Prior authorization provisions in the Medicaid managed care programs typically exempt mental health drugs (Kaiser Family Foundation 2004a). A handful of states require prior authorization of clozapine, a psychotropic drug, and two states require prior authorization of SSRIs (Kaiser Family Foundation 2004a). All states are required to have DUR programs for outpatient drugs to ensure that prescriptions paid for by Medicaid are appropriate, medically necessary, and not likely to result in adverse medical conditions. States report that DUR programs can produce significant savings, and many states use several of these tools simultaneously.

Finally, the states may require or encourage the substitution of generic drugs for a prescribed brand-name drug when a generic equivalent is available. Generic drugs are chemical copies of existing brand-name drugs that have been tested and marketed after the FDA has reviewed

them. The biggest difference between a generic and the brand-name drug that it copies is usually the price (U.S. Food and Drug Administration 2001). Generic drugs typically sell at 30 to 50 percent of the brand-name drug's price a year after the generic drug is launched. In 2000, 16 of 44 state Medicaid programs surveyed by the Kaiser Family Foundation had legislation or regulations requiring pharmacists to substitute generic drugs when they were available. In seven of these states, the prescribing physician could override this substitution by writing "brand medically necessary" on the prescription. States also have the flexibility to encourage generic drug use through differential copayments, differential dispensing fees, and differential payment rates.

Medicaid Prescription Drug Purchasing

The states buy medications for Medicaid recipients enrolled in fee-for-service arrangements. Over the past 12 years, states have purchased drugs under rules stated in the Omnibus Reconciliation Act of 1990 (OBRA90). This act established a set of drug procurement rules for Medicaid known as a most favored customer (MFC) clause. Under its provisions, Medicaid and local governments (which buy psychotropic medications in conjunction with state Medicaid programs for allocation through the community-based mental health system) pay manufacturers the lowest price offered to any private-sector purchaser of a given product. OBRA90 also contains a provision permitting Medicaid to purchase drugs at a percentage discount if the best private price is not low enough. In return, the manufacturer's products participating in the program are included in any Medicaid formulary (Scott-Morton 1997). Specifically, the law requires manufacturers to sell drugs to Medicaid at 87.5 percent of the average manufacturer price (AMP) or the "best price," whichever is lower. There also is a cap on how much a price can be increased. These rules affect manufacturers' pricing decisions in the private market. Because privately negotiated discounts also, by law, must apply to Medicaid, the loss of revenues associated with granting discounts to private customers is increased. Therefore, manufacturers are less willing to offer discounts to private customers. The result is to raise the average manufacturer prices. The amount of pressure is directly related to Medicaid's share of sales for a particular product. There also is an incentive to stagger the release of the product by dosage form and delivery method so as avoid the constraints imposed on price increases

for existing products and thereby maintain the flexibility to price new products.

The Medicaid rebate program is especially important to psychotropic drugs because Medicaid's purchases account for such a large share of classes of drugs like antipsychotic agents. Medicaid procurement policy can therefore have a large effect on private-sector prices (including Medicaid HMOs), product launch strategies, and therapeutic R&D decisions. Finally, because of Medicaid's price rules, pharmaceutical manufacturers have an incentive to set relatively high prices at the time the product is launched, since the opportunities to raise it are strictly limited.

The Food and Drug Administration

The Food and Drug Administration (FDA) regulates the availability of drugs sold in the United States. As such, it plays a central role in determining what psychotropic drugs will be marketed here. The FDA is responsible for evaluating new drugs for safety and effectiveness before they can be marketed to the public (U.S. Food and Drug Administration 2001). The FDA also oversees publicly available information about drugs and continuously monitors drugs for adverse events. Finally the FDA regulates the promotion of prescription drugs. Thus, the ways in which safety and efficacy are assessed and promotion is regulated affect the quality of available treatments, price competition in the market, and, ultimately, the use and funds spent on psychotropic drugs.

Determinations of the safety and efficacy of new drugs are usually based on the results of short-term clinical trials (typically six weeks of exposure). The FDA or other public agencies do not systematically study the long-term efficacy and cost effectiveness of new drugs. Therefore, since many of the most important and expensive psychotropic drugs are used for continuation and maintenance treatment, the effects of these drugs as used in practice are not known. This gap in knowledge limits the decision-making capacity of payers, physicians, and clinical organizations.

Drugs are approved by the FDA for specific purposes, but they can be prescribed for other purposes (so-called off-label use). Although drug manufacturers are not permitted to actively promote off-label uses of their drugs, such usage is common. No government agency is charged with evaluating off-label uses for FDA-approved medications. Clinical journals, however, may publish studies evaluating the effectiveness of

drugs for off-label uses. If there appear to be significant financial and clinical advantages to the off-label use of a product, a drug manufacturer may apply for FDA approval to list the new indication for use. SSRIs seem to be widely used for off-label indications, even though their effectiveness for these purposes is not known. This lack of information may contribute to the denial of use for some patients who would benefit from these medications because Medicaid and most private payers are not clearly obliged to pay for uses of prescription drugs that are not approved by the FDA.

The FDA is also responsible for reviewing and approving the introduction of generic drugs into the U.S. market. The FDA reviews generic products in the context of patent policy and the Hatch-Waxman Act of 1984, which defines the rules under which generic products may enter the market. Generic products are not subject to all the testing required for initial FDA approval. Rather, their manufacturer must demonstrate bioequivalence and appropriate manufacturing processes. Generic manufacturers may initiate testing for bioequivalence before a brand-name drug's patent has expired. In addition, the FDA may approve a generic drug for marketing if its sponsor has successfully challenged the validity of a patent or shown that a new generic will not infringe on an existing patent. In recent years, key members of the newer generation of antidepressants—Prozac (fluoxetine), Remeron (mirtazapine), and Paxil (paroxetine)—have lost their patent exclusivity. The entry of generic equivalents has consequently altered the market's price structure. For example, a one-month supply of brand-name Prozac (20 mg) has a current list price on drugstore.com of $104.99 (down from its average patent-protected price of $110 in 2001), while the same dose and amount of the generic fluoxetine has a list price of $15.99. This price drop represents substantial savings for consumers.

Conclusion

Psychotropic drugs have become increasingly central to evidence-based practice for a wide range of mental disorders. Advancements in pharmaceutical-based therapies have altered the treatment of anxiety disorders, depression, and schizophrenia. Consequently, drugs have become a major element in the cost of mental health care, placing psychotropic drugs squarely on the public policy agenda. In this article, we outlined

those issues that challenge policy in the domains of drug purchasing, care management, and regulation of the drug development and testing process. Organization and financing issues for payers are particularly important to balancing cost containment and continued innovation in mental health care. Medicaid policies are critical because of the important role played by Medicaid in paying for the care of mental illness, particularly for those beneficiaries with a severe mental illness.

Endnote

1. Note that the media and others have focused on the Kessler study's 22 percent rate of appropriate treatment. This statistic, however, includes people that did not receive any treatment for their depression in the denominator and not just those people receiving treatment, as did the other studies mentioned earlier.

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