Benefit Design And Specialty Drug Use

Increased cost sharing for specialty drug products will not reduce their use but will transfer a greater share of their costs to patients.

by Dana P. Goldman, Geoffrey F. Joyce, Grant Lawless, William H. Crown, and Vincent Willey

ABSTRACT: In this paper we examine spending by privately insured patients with four conditions often treated with specialty drugs: cancer, kidney disease, rheumatoid arthritis, and multiple sclerosis. Despite having employer-sponsored health insurance, these patients face substantial risk for high out-of-pocket spending. In contrast to traditional pharmaceuticals, we find that specialty drug use is largely insensitive to cost sharing, with price elasticities ranging from 0.01 to 0.21. Given the expense of many specialty drugs, care management should focus on making sure that patients who will most benefit receive them. Once such patients are identified, it makes little economic sense to limit coverage. [*Health Affairs* 25, no. 5 (2006): 1319–1331; 10.1377/hlthaff.25.5.1319]

THE ADOPTION OF MULTI-TIER FORMULARIES and other cost-control mechanisms such as prior authorization requirements, mandatory generic substitution, and mail-order pharmacies have helped slow the growth in outpatient prescription drug spending, from 16 percent in 2000 to 8 percent in 2004.[1] Although demand is still increasing, employers and health plan sponsors are much less concerned about runaway spending on oral medications than they were just several years earlier.

By contrast, the demand for specialty drugs—which include most injectibles and biologic agents—continues to accelerate. Biotechnology-derived agents target a gene or protein and typically are injected or infused. They are often used to treat complex chronic conditions such as anemia, cancer, growth hormone deficiency, and multiple sclerosis (MS). Many of these agents provide highly sophisticated treatment where few other viable treatment options exist, but at prices that can be much higher than those of traditional medications. Since only a small percentage of health plan members have these conditions, the total population of specialty drug users is quite small, ranging from 1 percent to 5 percent of a typical

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plan's members.[2] However, the overall cost of specialty drugs is expected to rise sharply in the near future as new drugs enter the market for the treatment of diabetes, osteoporosis, and rheumatoid arthritis (RA)—diseases that affect much larger populations.

Given the growth in both the number of products available and the expense involved, many insurers are contemplating a variety of payment and distribution strategies to control their use and costs. At the same time, the high cost of specialty drugs, usually combined with other expenses that are associated with treating a chronic condition, means that many users are at financial risk for high out-of-pocket spending. Thus, the challenge lies in how to best manage the use of these drugs to ensure appropriate and affordable access.

In this paper we use data from more than fifty health plans to document the variability in coverage of specialty drugs and the consequences for plan spending and patients' out-of-pocket spending. Our analyses focus on four diseases whose treatment with specialty products is common: cancer, kidney disease, RA, and MS. We examine how responsive specialty drug use is to changes in benefit design, and we contrast this demand curve to that of traditional oral agents.

Study Data And Methods

First, we aggregated spending on specialty drugs covered under the medical and pharmacy benefit. Second, we computed an index of plan generosity and examined the relationship between cost sharing and spending. The salient details are discussed below.[3]

■ **Data.** We assembled pharmacy and medical claims from fifty-five health plans offered by fifteen large employers in 2003 and 2004.[4] The data cover approximately 1.5 million beneficiaries (amounting to 2.3 million person-years) continuously enrolled in a plan for an entire year. We restricted our attention to patients with at least two primary diagnoses for cancer, kidney disease, RA, or MS as indicated by *International Classification of Diseases*, Ninth Revision (ICD-9) codes. These four conditions were selected because they are chronic diseases that are commonly treated with specialty drugs. For this study, kidney disease was defined as having chronic renal insufficiency, anemia, or end-stage renal disease.[5] For cancer patients, we included spending on renal-related agents as well as chemotherapeutic agents to account for the relatively large fraction of patients taking specialty products for anemia. The claims captured all health care claims and encounters, including prescription drugs and inpatient, emergency, and ambulatory services. Most drug claims include information on the type of drug, drug name, National Drug Code (NDC) number, dosage, days supplied, and place of purchase (retail or mail order). The medical claims included the date of service, diagnosis and procedure codes, and type of facility and provider.

■ **Use of specialty drugs.** Historically, injectible medications have been administered by a physician or nurse in a clinical setting and covered under the medical

benefit. As such, medical benefit plan designs were intended to compensate physicians for professional services related to the administration of these medications, as well as to reimburse them for the medications' cost. Specific medication costs are not identified, and, for the patient, coverage typically involves a single copayment for each physician office visit. However, many newer injectibles can be administered by the patient at home and accessed through physicians, community pharmacists, or mail-order pharmacies. In addition, specialty drugs paid for through the major medical benefit are 20–30 percent more expensive on average than those paid for through the pharmacy benefit.[6] As a result, more specialty drugs are moving under the pharmacy benefit, and traditional cost-control measures are being applied, such as bulk purchasing for best product price, copayments, and closer scrutiny of use and outcomes.

We used medical claims data to identify use of specialty products from physicians' offices, home care agencies, and outpatient facilities such as outpatient hospital clinics. All claim records were scanned to flag whether any prescription drug was administered; we then used the Healthcare Common Procedure Coding System (HCPCS) or the Current Procedural Terminology (CPT) code to identify the biologic agents. (For example, a code of J0880 refers to an injection of darbepoetin alfa.) To identify biologics distributed through retail and mail-order pharmacies, we constructed lists of all products associated with any HCPCS code and then searched for pharmacy claims using the drug names and NDCs.

■ **Plan generosity toward specialty drugs.** Our main interest was to estimate how use of specialty drugs responds to cost sharing. But one cannot infer how generously a plan will cover specialty drugs—or any drug for that matter—merely by looking at its stated medical or pharmacy benefits. Multi-tier formularies are now the standard, and they offer discounts for purchases through mail-order or in-network pharmacies. Deductibles, out-of-pocket maximums, and benefit caps also complicate these calculations. These added complexities mean that the price a consumer will pay for a given drug depends not only on its tier, but also on where it is dispensed and at what time of the year. For biologics, this issue is further confounded because many products are administered by a health care professional and paid for as part of medical services.

As a consequence, we measured plan generosity as the ratio of total out-of-pocket payments for certain categories of specialty drugs relative to total payments. So, for example, when we examined use of drugs to treat RA, we computed the ratio of total out-of-pocket payments for RA-related specialty drugs divided by their total cost. Plans with higher cost sharing are less generous by construction.[7] Since the use of some specialty drugs is rare, estimated cost-sharing rates can be quite variable across plans and can range from zero to 100 percent. We conducted additional analyses based on two cutoffs for plan size; that is, we ran models restricting our attention to plans with at least 10 and then 100 members who used each class of specialty products in that year. The results in general were not

sensitive to this exclusion restriction, nor were they sensitive to models that weighted by the number of patients in the plan with the condition.

■ **Other factors affecting specialty drug use.** Our models included controls for patient characteristics available in claims data: age, sex, work status of the sponsor (active or retired), and status (primary beneficiary or dependent). Because the information in claims data is limited, we included socioeconomic measures that are likely to influence the demand and supply of specialty drugs such as urban residence and median household income in the ZIP code of residence. We controlled for the most common comorbid conditions based on the presence of ICD-9 diagnostic codes in the medical claims: hypertension, chronic heart failure, diabetes, asthma, lipid disorder, depression, arthritis, migraine, and gastric acid disorder.

■ **Statistical analysis.** Our analyses used a two-part model for each of the four conditions (cancer, kidney disease, RA, and MS). The first part of the model, including all patients with the sentinel conditions, used probit regression to estimate the probability that a member used any specialty drug. The second part used a generalized linear model with a logarithmic link function and normally distributed errors to estimate the level of drug spending among members with at least some use. We chose the generalized linear model because it predicted specialty drug spending better than the standard two-part model, but our conclusions are insensitive to this choice.

For each disease, we used the results from the two-part model to estimate a price elasticity of use, as well as an overall elasticity on spending. We used estimates from the first part of the model to predict the probability of specialty use for each person with the condition at the first and third quartiles of plan generosity. We used the second part to predict spending conditional upon having at least one claim. Total spending was predicted using the product of the two. The predictions were then averaged over all individuals in that disease group, and an (arc) elasticity was computed.[8]

Study Results

■ **Most commonly used specialty drugs.** The most commonly used specialty drugs include treatments for cancer, RA, anemia, psoriasis, and MS (Exhibit 1). The expense of some of them is apparent. For example, total spending in 2004 for etanercept (Enbrel), a treatment for RA and psoriasis, was $16 million, or about $10,000 per user. Spending on leuprolide acetate (Lupron) for prostate cancer totaled $6.3 million for 1,943 users, or about $3,200 annually per user. The seventeen hemophiliacs taking recombinant factor VIII spent more than $1.7 million on the drug, for an average of more than $100,000 per user. This extreme example highlights two defining characteristics of specialty pharmaceuticals: They are used less frequently but are more expensive than typical pharmaceutical treatments.

■ **Patient characteristics.** Patients with cancer are much older (average, sixty-eight years) than the general covered population, as one would expect given the

EXHIBIT 1
Most Common Spe

Product	To sp
Etanercept injection	16
Darbepoetin alfa injection	9,(
Interferon beta-1a	6,(
Rituximab	6,!
Infliximab	6,!
Pegfilgrastim	6,
Leuprolide acetate suspension	6,
IV immune globulin	5,
Paclitaxel	3,
Mycophenolate mofetil oral	3,
Docetaxel	2,
Oxaliplatin	2,
Interferon beta-1b	2,
Tacrolimus	2
Carboplatin injection	2
Filgrastim	2
Zoledronic acid	1
Recombinant factor VIII	1
Gemcitabine HCl	1
Trastuzumab	1

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EXHIBIT 1
Most Common Specialty Pharmaceutical Products Used In 2004

Product	Total spending ($)	No. of users	Primary use
Etanercept injection	16,212,909	1,532	TNF inhibitor for reducing inflammation in RA
Darbepoetin alfa injection	9,079,720	1,275	Erythropoiesis-stimulating protein used to treat anemia in patients with kidney disease or undergoing chemotherapy
Interferon beta-1a	6,815,551	634	Immunomodulator for relapse-remitting MS to decrease the frequency of clinical exacerbations and delay the accumulation of physical disability
Rituximab	6,556,596	260	Monoclonal antibody therapy used to target cancer cells in non-Hodgkins lymphoma patients; also used for RA
Infliximab	6,513,118	449	TNF inhibitor used in conjunction with first-line drugs to reduce inflammation in RA; also used to treat Crohn's disease
Pegfilgrastim	6,412,737	604	Colony-stimulating factor that stimulates production of white blood cells in patients receiving anticancer drugs
Leuprolide acetate suspension	6,287,387	1,943	Gonadotropin-releasing (LHRH) hormone analog to stop production of testosterone/estrogen to stop growth of diseased cells involved in prostate cancer and endometriosis
IV immune globulin	5,516,199	160	Immunizing agent to prevent or reduce the severity of certain infections in patients at increased risk of infection
Paclitaxel	3,549,327	396	Anti-neoplastic used to target cancer cells in patients with metastatic breast/ovarian cancer and some lung cancers
Mycophenolate mofetil oral	3,276,388	825	Immunosuppressant used in combination with other medications to keep bodies from attacking and rejecting transplanted organs
Docetaxel	2,914,423	279	Anti-neoplastic used to target cancer cells in patients with breast cancer, prostate cancer, or non-small cell lung cancer
Oxaliplatin	2,835,209	130	Anti-neoplastic used to target cancer cells in patients with cancer of the colon or rectum
Interferon beta-1b	2,831,988	249	Immunomodulator for relapse-remitting MS to decrease the frequency of clinical exacerbations and delay the accumulation of physical disability
Tacrolimus	2,692,113	541	Immunosuppressive agent used to prevent the body from rejecting a transplanted organ
Carboplatin injection	2,455,462	375	Alkylating agent that targets cancer cells for the treatment of ovarian cancer
Filgrastim	2,422,763	405	Growth factor used to decrease the chance and the duration of problems due to low white blood cell counts
Zoledronic acid	1,838,856	298	Bisphosphonate used to slow bone breakdown and decrease the amount of calcium released from the bones into the blood in patients with cancer-related hypercalcemia, multiple myeloma, or certain types of bone metastases
Recombinant factor VIII	1,723,558	17	Synthetic protein that activates substances in blood to form clots and decrease bleeding episodes in patients with hemophilia A
Gemcitabine HCl	1,686,354	187	Pyrimidine analog that slows or stops the growth of cancer cells in patients with adenocarcinoma of the pancreas
Trastuzumab	1,595,758	56	Monoclonal antibody therapy used to target cancer cells in patients with metastatic breast cancer whose tumors overexpress the HER2 protein

EXHIBIT 2
Sample Characteristics, Patients With At Least Two Primary Diagnoses For Cancer, Kidney Disease, Rheumatoid Arthritis (RA), Or Multiple Sclerosis (MS), 2004

Characteristic	All	Cancer	Kidney disease	RA	MS
Number of patients	1,219,078	42,997	45,068	9,066	2,537
Demographics					
Age	46.72	67.78	61.88	61.17	52.20
Age 65 or older (%)	25	63	49	42	14
Male (%)	48	50	41	28	24
Income ($ thousands)[a]	31.52	31.07	30.87	30.64	31.61
Married (%)	55	69	61	67	69
Currently working (%)	58	18	31	31	50
Primary beneficiary (%)	51	70	66	60	59
Health conditions					
Cancer	3.5%	100.0%	12.5%	6.6%	3.8%
Chronic renal insufficiency	1.0	3.1	28.2	2.6	1.3
Anemia	2.9	11.0	77.8	10.4	6.2
End-stage renal disease	0.1	0.3	3.1	0.1	0.1
RA	0.7	1.4	2.4	100.0	1.3
MS	0.2	0.2	0.4	0.4	100.0
Hypertension	13.9	31.4	35.2	27.4	15.4
Heart disease	18.2	41.8	48.4	35.6	19.6
Diabetes	5.6	12.1	20.9	9.1	5.2
Asthma	2.0	2.4	3.4	4.1	2.2
Lipid disorder	5.4	11.0	9.8	9.0	5.7
Depression	3.0	3.5	5.6	5.0	9.1
Arthritis	3.9	9.2	11.5	17.5	4.1
Gastric disorder	2.5	5.3	7.6	6.0	4.0
Migraine	0.7	0.6	1.1	1.3	2.8
Lung disease	0.8	2.5	2.8	2.2	0.7
Total spending					
Medical	$4,578	23,041	25,925	13,529	10,784
Drug	1,460	5,200	5,293	5,793	9,783
Total	6,038	28,241	31,218	19,321	20,567
Out-of-pocket spending					
Medical	1,371	7,241	7,756	3,919	2,408
Drug	316	1,170	1,122	892	893
Total	1,687	8,411	8,878	4,811	3,301

SOURCE: Authors' calculations from claims data, 2004.
NOTE: Subsequent analyses use combined 2003 and 2004 samples.
[a] Median household income in three-digit ZIP code of residence from the 1990 census.

ney disease) in out-of-pocket expenses.

■ **Patients' financial burden.** To get a better estimate of the tails of the distribution, we included spending in 2003 in the distribution (Exhibit 3). (Spending figures for 2003 are not adjusted for inflation, but such an adjustment would not materially affect the results.) All of these patients are privately insured through large employers, and so one would expect coverage to be generous. Despite this fact, it is clear that patients with these diseases are still at risk for substantial spending. More than 10 percent of patients with cancer have out-of-pocket costs that exceed $18,585 in a year, and 5 percent have costs that exceed $35,660. A similar pattern holds for patients with kidney disease and, to a lesser extent, patients with RA. Patients with MS are at less risk, with a ninety-fifth percentile of $9,000.

EXHIBIT 3
Distribution Of Out-Of-Pocket Spending For All Beneficiaries And Those With Selected Conditions, 2003–04

	Percentile				
Disease	**Median**	**75th**	**90th**	**95th**	**99th**
All out-of-pocket spending					
MS	$1,185	$2,465	$ 5,116	$ 9,092	$ 42,830
RA	1,208	2,874	8,777	17,450	52,343
Cancer	1,509	5,097	18,585	35,660	91,381
Kidney disease	1,313	4,385	18,324	36,603	100,303
Medical services only					
MS	587	1,327	3,496	7,319	38,211
RA	628	1,772	7,122	15,417	49,556
Cancer	989	4,081	16,385	32,532	84,643
Kidney disease	769	3,205	16,450	33,760	95,068
Drugs only					
MS	436	852	1,749	2,778	5,284
RA	446	816	1,586	2,542	6,407
Cancer	336	677	1,441	2,576	12,416
Kidney disease	386	763	1,533	2,551	9,995

SOURCE: Authors' calculations from claims data, 2003–04.
NOTES: MS is multiple sclerosis. RA is rheumatoid arthritis.

■ **Medical versus drug spending.** Given the high cost of specialty products, it is worth considering to what extent the financial risk for these conditions is generated by drug spending. A close inspection shows that the risks associated with medical spending is much higher than for drugs (Exhibit 3). The ninety-fifth percentile for out-of-pocket drug spending for the four conditions is around $2,500, whereas annual out-of-pocket medical spending can be as high as $33,760 for kidney disease.

■ **Cost-sharing burden.** The long tails in out-of-pocket spending suggest that these patients face substantial cost sharing for some of their service use. This raises the question of whether cost sharing discourages use of specialty products. Our analysis used variation in coverage generosity across health plans and over time (2003–04) to identify how cost sharing affects specialty drug use for each patient population. Exhibit 4 provides a useful heuristic for our analysis. Each point on the plot shows the relationship between plan generosity and spending on kidney-related specialty products. Our measure of plan generosity is the effective coinsurance rate for kidney-related specialty products, as described earlier. As shown by the regression line, each one-percentage-point increase in the effective coinsurance rate for kidney-related specialty drugs leads to an insignificant $0.11 reduction in per patient spending ($p = .39$), or $0.25 ($p = .09$) when weighted by the number of users in the plan. Thus, there does not appear to be a strong relationship between plan generosity and use of specialty drugs by kidney disease patients. (There is one influential outlier with a low coinsurance rate and very high spending; excluding this

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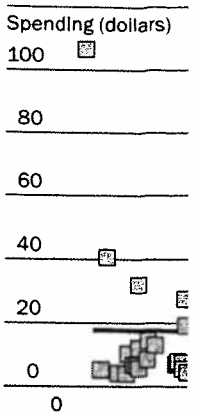
Effective Coinsi



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NOTE: N = 90 plans.

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EXHIBIT 5
Relationship B

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Kidney disease
Multiple sclerosis
Cancer

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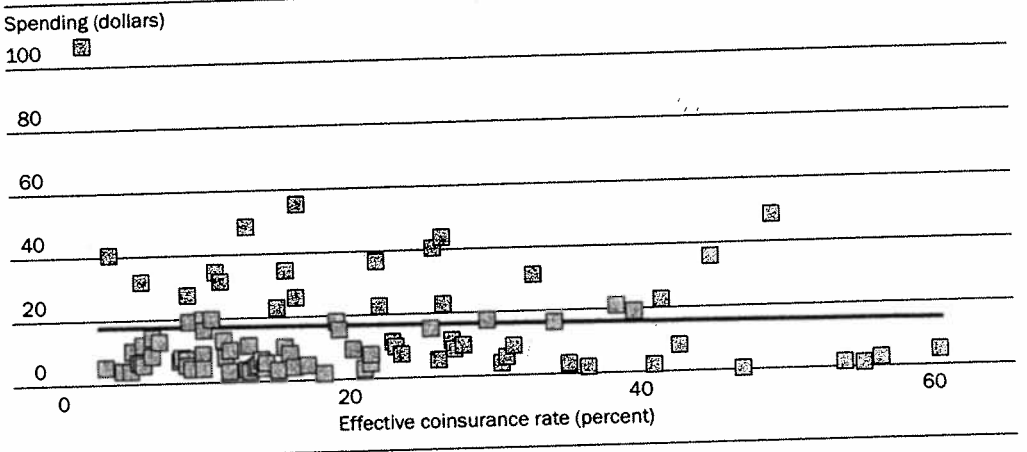
EXHIBIT 4
Effective Coinsurance Rate For Kidney-Related Products And Spending, 2003–04



SOURCE: Authors' calculations from claims data, 2003–04.
NOTE: N = 90 plans.

point would only serve to "flatten the regression line" and make the relationship even less strong.) Of course, other factors could bias this finding—for example, if patients in the more generous plans had fewer comorbid conditions. Thus, we ran multivariate models of individual use that control for other observable factors (Exhibit 5).

Because our measure of plan generosity is an average coinsurance rate, we report the effects of plan generosity as an elasticity that can be interpreted as the percentage change in spending (or use) associated with a 1 percent increase in effective coinsurance rates.[9] So, for example, if a plan were to double cost sharing for RA-related specialty drugs, our models indicate that overall spending on these drugs would fall by 21 percent ($p < .05$). For cancer drugs, however, spending would be reduced by only 1 percent. Using our two-part model, we can also compute the elasticity of whether patients use any drugs at all and the amount of conditional spending. In fact, we found that coinsurance did not significantly affect

EXHIBIT 5
Relationship Between Price Changes And Use Of Pharmaceuticals

Condition	Overall elasticity of specialty drug spending	Elasticity of any specialty drug use	Elasticity of conditional spending
Rheumatoid arthritis	−0.21**	−0.05***	−0.16
Kidney disease	−0.11	−0.06	−0.03
Multiple sclerosis	−0.07**	−0.03***	−0.05
Cancer	−0.01	−0.10*	0.11

SOURCE: Authors' calculations from claims data, 2003–04.
*$p < .10$ **$p < .05$ ***$p < .01$

the level of spending at all once a patient initiated specialty drug use. What is most striking about these results is how inelastic demand is—that is, how insensitive patients are to price—in comparison to traditional pharmaceuticals, for which it is not uncommon to see responses of 30–50 percent when copayments double.

Sensitivity Analysis

One possible explanation for why we observed inelastic responses is that our principal measure of plan generosity is measured with error, biasing our estimates toward zero. To test this, we instrumented for the effective coinsurance rate for specialty drugs with an identically constructed rate for nonspecialty drugs. The estimated price elasticities generally moved toward zero when we used this instrument (for example, the conditional elasticity for RA went from −0.16 to −0.04). This suggests that the inelastic responses we observed in the data were not driven by measurement error in the key independent variable.

We also examined the sensitivity of our findings to alternative specifications. Excluding binary indicators for comorbid conditions or plan type (health maintenance organization, preferred provider organization, point-of-service plan, or fee-for-service coverage) had little impact on the estimated elasticities.[10] Similarly, the use of medical plan characteristics (deductibles and copayments) instead of an index of average medical generosity did not change our conclusion that demand for these products is inelastic.

Discussion

As spending on specialty drugs increases, benefit managers' interest in monitoring and containing their use has intensified. Plans that cover physician-administered injectibles under their medical benefits are starting to move them to their pharmacy benefits, where they can be more easily subjected to the same utilization management as tablets and capsules. Further, health plans that cover these drugs under their pharmacy plan are increasingly requiring consumers to share the costs of high-cost drugs via coinsurance rather than copayments. For example, some plans may require beneficiaries to pay 25 percent coinsurance for high-cost drugs, with a maximum out-of-pocket expense of $1,000 per year. While existing specialty drugs treat diseases of relatively low prevalence, newer biologics are aimed at much larger patient populations such as diabetics and asthmatics. Demand for these products may not be as inelastic as what we observed in this study.

Insurance markets work best when there is the chance of substantial loss, when that loss is sufficiently rare and uncertain, and when the presence of coverage will not alter behavior much.[11] Viewed this way, specialty drugs appear to warrant greater, not less, coverage than traditional pharmaceutical agents.[12] It is worth considering each of these principles separately.

■ **Use is rare and uncertain.** Risk pools function best when many people con-

"Given the high cost of these specialty drugs, insurers would be better off finding ways to manage utilization."

tribute premiums to fund the occasional loss. Fire insurance is a useful example. In contrast, traditional oral agents fail this test. In our employer-based database with more than 1.2 million covered lives in 2004, more than 70 percent of members filled at least one prescription that year. Thus, the use of pharmaceuticals is the rule rather than the exception. Furthermore, many of the most common classes of medications—including treatments for cholesterol, high blood pressure, and diabetes—are chronic medications that are taken in known quantities over long periods and perhaps a lifetime. There is little uncertainty inherent in their use. People purchase the drugs at known intervals in a thirty- or ninety-day supply, and the price is (or at least could be) known without much upside fluctuation. As we have documented here, though, use of specialty drug products is much lower—around 1 or 2 percent of the insured population.[13] Also, many of these products are taken for short periods of time, and only when a chronic disease invokes extreme symptoms. A clear manifestation of the uncertainty is that it is very difficult to predict who will use biologic agents and with what level of compliance.

■ **Specialty drugs involve substantial losses.** Insurance has some costs associated with it, so people do not value insurance against small losses. The real value arises when the risk is catastrophic. While traditional oral agents can be expensive, most of them will not result in catastrophic spending. Whereas 17 percent of all beneficiaries had medical spending that exceeded $5,000 in 2004, only 7 percent had pharmaceutical costs above that limit, and when they did, it was often because they used biologics. On the other hand, our results demonstrate that patients using specialty drugs can face extreme financial burden not just for their biologic products but across the entire constellation of health care services.

■ **Demand is relatively inelastic.** One of the fundamental problems with insurance is that it can induce people either to behave in a risky manner or to consume care of little value. Conversely, if one can identify medical services where people use the same amount, irrespective of price, then this type of care is a good candidate for coverage. The RAND Health Insurance Experiment (HIE) randomly enrolled more than 2,700 families into health insurance plans that ranged from free care to 95 percent coinsurance. The results definitively demonstrated that when people have to pay for more of their care out of their own pockets, they use fewer medical services. But the type of service matters. Demand for inpatient and outpatient care was the least elastic, whereas use of dental and mental health services were most responsive to changes in the copayment.[14] This finding goes a long way toward explaining why virtually every health insurer covers hospital and ambulatory care but not necessarily these other services. More evidence has convincingly shown that demand for prescription drugs is elastic as well. Our own work suggests that doubling copayments

in the most common plans will reduce spending by about 33 percent. But this result does not carry over to specialty drugs. Our findings suggest much less elastic price responses of between 1 percent and 21 percent. These results imply that changes in demand have small effects on use of these services, a point highlighted by Exhibit 4.

■ **Welfare effects.** With some health care services, such as physician services, the high prices induced by insurance can be viewed as waste in the sense that they transfer money from insurance beneficiaries to health care providers (although doctors might object to calling it "waste"). Pharmaceuticals are different, however, in two key ways. First, they typically are inexpensive to produce—that is, they involve low marginal costs—so excess consumption is not an economic problem (although it might be a clinical worry). The fact that someone takes another pill will not cost society much in the way of resources, whereas an extra bypass surgery does. Second, the high prices of pharmaceuticals reflect a necessary reward to pharmaceutical innovation. Without monopoly pricing, society would have to find some other way to ensure future innovation, perhaps through processes such as patent buyouts or direct government investment in drug development.[15] In fact, while pharmaceutical prices appear high relative to marginal cost, most of the benefits from treatment accrue to patients. For example, Thomas Philipson and Anupam Jena find that despite the perceived high prices of antiretroviral therapy for HIV, only 5 percent of the more than $1 trillion in value generated by these drugs went to manufacturers.[16]

Ultimately, it is still an open question whether insurance provides too little or too generous an incentive to pharmaceutical innovation.[17] What is clear from this literature, however, is that when patients derive great benefit from a specialty drug—even one with high production costs—and their demand is inelastic, high cost sharing is undesirable in both a static and dynamic sense. Given the high cost of these specialty drugs, insurers would be better off finding ways to manage utilization so only patients who would benefit will get access to them, rather than pursuing high copayment policies designed to deter use by all patients regardless of clinical need.

INCREASED COST SHARING FOR SPECIALTY PRODUCTS will not reduce use of these products dramatically but will only serve to transfer a much larger financial burden from the health plan to the patient. It also will do little to reduce overall health care spending. Management of these drugs may rightly focus on making sure that only patients who will most benefit receive them, but once such patients are identified, it makes little sense to limit coverage.

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NOTES

1. C. Smith et al., "N ing," *Health Affairs*
2. *Specialty Pharmacy*
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4. Not every health
5. The cause of anen category. This agg with underlying when anemia pati
6. P. Pinsonault, "Un Issues," *Pharmaceu*
7. This index is simil Benefits and the U (2004): 2344–235 drug supplied is n
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11. M.E. Chernew, W. Illness," *Journal of H*
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15. M. Kremer, "Pater no. 4 (1998): 1137–
16. T.J. Philipson and Producer Surplus www.bepress.com
17. As long as insuran ing will improve Hands Good Hand *Political Economy* 10 Incentives for Me www.bepress.com sue that might jus

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1. C. Smith et al., "National Health Spending in 2004: Recent Slowdown Led by Prescription Drug Spending," *Health Affairs* 25, no. 1 (2006): 186–196.
2. *Specialty Pharmacy News*, January 2004.
3. Additional detail on our methods and results is contained in an online technical appendix at http://content.healthaffairs.org/cgi/content/full/25/5/1319/DC1.
4. Not every health plan was available in both years; in total there were ninety-one plan-years.
5. The cause of anemia cannot be ascertained in claims data, so all patients with anemia are included in this category. This aggregation is consistent given that specialty drugs used to treat anemia also do not vary with underlying disease. Sensitivity analysis demonstrated that the subsequent elasticities are similar when anemia patients are excluded.
6. P. Pinsonault, "Understanding Formularies: Formulary Strategies Evolve in Response to New Trends and Issues," *Pharmaceutical Representative* 34, no. 3 (2004): 20–23.
7. This index is similar in spirit to the market basket approach employed by D.P. Goldman et al., "Pharmacy Benefits and the Use of Drugs by the Chronically Ill," *Journal of the American Medical Association* 291, no. 19 (2004): 2344–2350. A true market basket could not be constructed for biologics, since the quantity of drug supplied is not recorded in medical claims.
8. The arc elasticity was computed as a quotient, where the numerator was one-half of the ratio between (1) the magnitude of the difference between the average predictions across the entire sample with the condition and (2) the sum of those averages; and the denominator was one-half of the ratio between (1) the magnitude of the difference between the twenty-fifth and seventy-fifth quartiles of our plan-generosity measure and (2) the sum of those quartiles.
9. The actual parameter estimates are available upon request. Contact Dana Goldman, dgoldman@rand.org.
10. This is shown in the online technical appendix; see Note 3.
11. M.E. Chernew, W.E. Encinosa, and R.A. Hirth, "Optimal Health Insurance: The Case of Observable, Severe Illness," *Journal of Health Economics* 19, no. 5 (2000): 585–609.
12. A.M. Fendrick et al., "A Benefit-based Copay for Prescription Drugs: Patient Contribution Based on Total Benefits, Not Drug Acquisition Cost," *American Journal of Managed Care* 7, no. 9 (2001): 861–867.
13. Although the fraction of users is low, that number is expected to greatly increase in the near future, as new drugs enter the market for the treatment of diabetes, osteoporosis, and other diseases that affect much larger populations.
14. J.P. Newhouse and the Insurance Experiment Group, *Free for All? Lessons from the RAND Health Insurance Experiment* (Cambridge, Mass.: Harvard University Press, 1994), Table 4.18.
15. M. Kremer, "Patent Buyouts: A Mechanism for Encouraging Innovation," *Quarterly Journal of Economics* 113, no. 4 (1998): 1137–1167.
16. T.J. Philipson and A.B. Jena, "Who Benefits from New Medical Technologies? Estimates of Consumer and Producer Surpluses for HIV/AIDS Drugs," Forum for Health Economics and Policy, 2005, Article 3, http://www.bepress.com/fhep/biomedical_research/3 (accessed 15 June 2006).
17. As long as insurance markets are competitive and production costs are low, then lower patient cost sharing will improve welfare in a static setting. M. Gaynor, D. Haas-Wilson, and W.B. Vogt, "Are Invisible Hands Good Hands? Moral Hazard, Competition, and the Second-Best in Health Care Markets," *Journal of Political Economy* 108, no. 5 (2000): 992–1005. See also A.M. Garber, C.I. Jones, and P. Romer, "Insurance and Incentives for Medical Innovation," Forum for Health Economics and Policy, 2006, Article 4, http://www.bepress.com/fhep/biomedical_research/4 (accessed 15 June 2006), for a different approach to this issue that might justify limits on monopoly pricing.