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The Impact Of Specialty Pharmaceuticals As Drivers Of Health Care Costs

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ABSTRACT The pharmaceutical industry is shifting its focus from blockbuster small molecules to specialty pharmaceuticals. Specialty pharmaceuticals are novel drugs and biologic agents that require special handling and ongoing monitoring, are administered by injection or infusion, and are sold in the marketplace by a small number of distributors. They are frequently identified by having a cost to payers and patients of $600 or more per treatment. The total costs of the new agents are likely to have a substantial impact on overall health care costs and on patients during the next decade, unless steps are taken to align competing interests. We examine the economic and policy issues related to specialty pharmaceuticals, taking care to consider the impact on patients. We assess the role of cost-sharing provisions, legislation that is promoting realignment within the market, the role of biosimilars in price competition, and the potential for novel drug development paradigms to help bend the cost curve. The economic aspects of this analysis highlight the need for a far-reaching discussion of potential novel approaches to innovation pathways in our quest for both affordability and new technology.

Specialty pharmaceuticals are novel drugs and biologic agents that require special handling and ongoing monitoring, are administered by injection or infusion, and are sold in the marketplace by a small number of distributors. Although the category lacks a clear definition, specialty pharmaceuticals are frequently identified by having a cost to payers and patients of $600 or more per treatment.[1] These pharmaceuticals include many of the latest breakthrough treatments for a range of conditions, including cancer, rheumatoid arthritis, HIV, and multiple sclerosis. They are often considered part of the "personalized medicine" paradigm, in which clinicians strive to provide the right drug to the right patient at the right time.[2]

The costs of specialty pharmaceuticals are receiving increased attention from policy makers because of both the prices of individual products and their aggregate impact on health care costs. With an estimated US market of $87 billion in 2012[3]—which is growing at 8.8 percent annually, double the rate of the overall prescription drug market[4]—specialty pharmaceuticals could account for 50 percent of drug spending by 2019.[5]

In a review of oncology products approved by the Food and Drug Administration (FDA) in 2012, we found that all of them were priced above $60,000 for one year of therapy (Exhibit 1). The rise of specialty pharmaceuticals has helped drug companies offset the revenues they have lost from the expirations of patents on small-molecule agents. These agents differ from biologics in that they are administered orally; are produced via a well-defined manufacturing process; and are synthesized chemically, which makes them easy to characterize. Aspirin, beta-blockers, and

statins are examples of small molecules.

Currently, 86 percent of prescriptions in the US market for small-molecule agents are for generic medications. This is an astonishing change from 1995, when only 40 percent of retail prescriptions were for generic medications.[6,7] The industry therefore sees specialty pharmaceuticals as a way to offset losses from brand-name small molecules' losing patent protection.

Many specialty pharmaceuticals are likely to improve both life expectancy and quality of life for patients. However, the financial implications of their increased use cannot be ignored. The increase in total drug costs related to the new agents is likely to have a substantial impact on overall health care costs, and patients will feel the growing burden through increased insurance premiums and out-of-pocket costs.

Financial toxicity is already a substantial concern for patients. It has been estimated that twice as many people with cancer as without it declared bankruptcy between 1985 and 2009.[8] In a recent pilot study of 254 patients with cancer who contacted a national copayment assistance foundation, 68 percent reported cutting back on leisure activities, 46 percent said they had reduced spending on food and clothing, and 24 percent reported not filling prescriptions.[9]

As the pharmaceutical industry shifts its focus from blockbuster small molecules to specialty pharmaceuticals, it is important for policy makers and researchers to gain a deeper understanding of the financial impact of this change. In this article we examine a number of salient themes, including the role of cost-sharing provisions, legislation that is driving realignment within the market, the role of biosimilars, and the potential for novel drug development paradigms to help bend the cost curve.

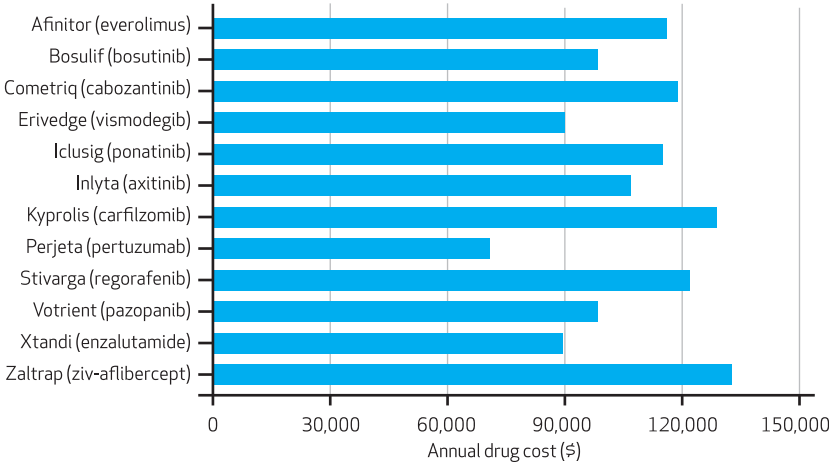
New Agents And Cost Implications

The aggregate impact of specialty pharmaceuticals on individuals' medical costs is not well documented. However, a basic analysis provides context to show why the issue is so important. Let us assume that every person covered by a hypothetical insurance plan had a yearly out-of-pocket medical expense of $3,500 to cover his or her premiums, absent the use of any specialty pharmaceutical. The derivation of this value is presented in the online Appendix,[10] as are the underlying assumptions of the cost model.

In this example, the financial impact of the introduction of a specialty pharmaceutical, at a cost to payers and patients of $100,000 per treated patient, was calculated as a function of disease prevalence in the covered population. Overall, health care costs would be expected to increase by $250 for every 0.25 percent of the population using the specialty pharmaceutical, or $1,000 for every 1 percent increase in utilization (Exhibit 2).

EXHIBIT 1

Annual Cost Of Oncologic Drugs Approved By The Food And Drug Administration In 2012



SOURCE Authors' analysis.

This is an intentionally simplistic assessment of the impact of new agents on premiums. However, the analysis shows that the growth of the specialty pharmaceutical category will have a direct impact on people's health insurance premiums. When one takes into account the breadth of diseases that are likely to be treated with specialty pharmaceuticals during the next few years, it is clear that a person's annual insurance premium could increase by thousands of dollars.

The analysis also suggests that in an era of constrained growth in health insurance premiums, for the pharmaceutical industry to be successful, it will have to compete more directly with the delivery system for a share of health insurance dollars. Ideally, the industry would do so by reducing the use of other medical services, such as hospital treatment. Payers, providers, and patients could face a choice about how to allocate fixed premium dollars: to support existing technology and infrastructure or to invest in novel technologies such as specialty pharmaceuticals.

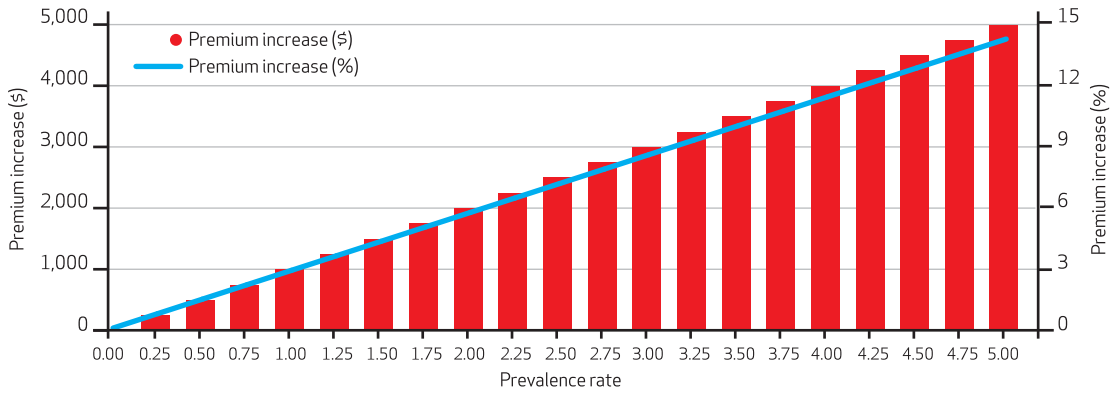
Cost Sharing

A standard way to stem the rise in health care costs resulting from the greater use of products or services is the use of cost sharing through copayments (having patients make fixed cost-sharing payments) and coinsurance (having patients pay a fixed percentage of the cost). In this article our discussion centers on two points concerning these approaches.

First, the insurance market has focused on the

EXHIBIT 2

Rate And Percent Increase In Insurance Premiums For A New Specialty Drug Costing $100,000 Per Treated Patient, Depending On Disease Prevalence



SOURCE Authors' analysis. **NOTES** "Premium increase ($)" (the red bars) denote the absolute increase in premium paid; it relates to the left-hand *y* axis. "Premium increase %" (the blue line) relates to the right-hand *y* axis. For every 1 percent increase in the share of the population using the new drug, overall health care costs would be expected to increase $1,000. See the online Appendix (see Note 10 in text) for information about the derivation of the included values.

economics of moral hazard. However, we feel that the roles of prospect theory[11] and emotion in the choice of cancer care are equally, if not more, important.[12]

Moral hazard, as used in this article, refers to the impact of insurance on individual behaviors. Under the moral hazard theory, the consumption of health care services is increased by the presence of insurance because people do not have to bear the full cost of using these services. Thus, they elect to receive more services (with lower marginal benefit) than they would purchase if they had to pay the full cost, because the subsidized cost is commensurate with the benefit. One approach that can be used to reduce the impact of moral hazard on consumption is to increase cost sharing for patients.

The moral hazard framework contrasts with prospect theory, which describes the way in which patients weigh the risks and benefits of a decision under conditions of gains and losses. According to prospect theory, patients making a decision under a condition of loss, such as a diagnosis of cancer, can become risk-seeking in weighing treatment options. The role of emotion in decision making can add to the sense of loss for patients with a cancer diagnosis. In contrast to moral hazard, prospect theory and emotion lead one to believe that treatment decisions are not driven by cost considerations, even though the decisions can have dire economic consequences for patients and their families.

As a result, many people with life-threatening illnesses appear to be price-inelastic for specialty pharmaceuticals—that is, they are willing to bear high out-of-pocket costs to receive treatments that they feel could save their lives. This suggests that demand for specialty pharmaceuticals, especially in oncology, may be driven not by moral hazard but by more complex decision-making processes that largely ignore financial considerations in treatment choice.

Second, by offsetting out-of-pocket costs, copayment assistance and MediGap programs help blunt the impact of cost sharing for people who are unable to pay for specialty pharmaceuticals. Providing assistance that lowers out-of-pocket costs in this manner is likely to reduce the effectiveness of cost sharing as a remedy for moral hazard in the specialty pharmaceutical market.

The scope of these programs is large. For example, the Partnership for Prescription Assistance programs of the Pharmaceutical Research and Manufacturers of America served eight million Americans in the period 2005–14,[13] and the Centers for Medicare and Medicaid Services maintains a list of copayment assistance programs accessible to many patients.[14]

From an ethical perspective, assistance programs could be considered to be an appropriate response to the financial burden of cost-sharing provisions on patients. However, the Congressional Budget Office estimated that the impact of Medigap programs on demand for health services will increase federal outlays for Medicare by $58 billion during the next decade.[15]

The growth of the specialty pharmaceutical market highlights the need to understand the drivers of demand for health care services and specialty pharmaceuticals. Given the current state of knowledge, policy makers must balance ensuring that financial incentives within insur-

ance schemes are designed to reduce consumption of low-value products and services and ensuring that benefit designs do not place outsize financial burdens on patients with severe illnesses, such as cancer.

The 340B Program And The Market

Legislation can sometimes have unintended effects on markets. One such piece of legislation is section 340B of the Veterans Health Care Act of 1992, which established the 340B program.

HISTORY OF THE 340B PROGRAM The purpose of the program is to ensure access to pharmaceutical agents at safety-net hospitals. Before 1990 the pharmaceutical industry made special prices available to these hospitals to support their unique charitable missions. As the concept of pharmaceutical benefit management programs was developed in the private health care market, the Omnibus Budget Reconciliation Act (OBRA) of 1990 created the Medicaid Drug Rebate Program. This program required pharmaceutical companies to offer state Medicaid programs rebates similar to those offered in the private market. The act ensured that state Medicaid programs had access to the lowest prescription drug prices in the market.

This legislation was needed since Medicaid is administered by the states instead of by the federal government. In spite of the national scope and large size of the Medicaid program overall, some state-level plans lacked the market power to secure favorable pharmaceutical prices.[16]

However, OBRA had a detrimental effect on safety-net hospitals. The price discounts that hospitals received could suddenly be used to establish Medicaid rebates because they were often the best prices in the market. Thus, pharmaceutical companies were less willing to provide aggressive discounts to safety-net-hospitals.

To address this issue, Congress included section 340B in the Veterans Health Care Act. The section established a new mechanism to provide discounts on certain outpatient medications for the small number of hospitals that provided high levels of uncompensated care (originally estimated to be ninety facilities). Prices under this program would not be considered in establishing Medicaid rebates under OBRA.

THE 340B PROGRAM TODAY Although the legislative history makes it clear that the 340B program was intended to have a modest scope, the program has had an outsize effect on the health care delivery system. The price discounts available to participants in the program are estimated to be 30–50 percent of the market price.[17]

Given the enormous financial benefit of being included in this program, the number of hospitals enrolled in it reached 591 in 2005 and 1,673 in 2011—one-third of all US hospitals.[18] Furthermore, the market impact of the 340B discount is magnified by the lack of specificity in the program. The 340B regulations do not limit the application of discounts received by hospitals to medications used in the care of indigent patients, nor do they require hospitals to pass their cost savings along to payers or patients.[19] A 2010 report from the Department of Health and Human Services Office of Inspector General found that the drug margin—that is, the difference between the cost of acquiring the drug and the reimbursement for administering it to a patient—on Medicare Part B prescriptions at hospitals participating in the 340B program was more than 30 percent.[20]

Independent clinical practices are reimbursed by Medicare at the average sales price (ASP) of an agent plus 6 percent—an addition that is meant to compensate providers for the operational complexity associated with the purchasing, storing, mixing, administering, and dispensing of therapies. Participating hospitals are also reimbursed at ASP plus 6 percent within Medicare, but their acquisition costs for pharmaceuticals are substantially discounted compared to the costs of private oncologists, for example.

The disproportionate financial incentives favoring hospitals in the 340B program have contributed to a dramatic shift in the business model of clinical practice. Participating hospitals have a large incentive to acquire physician practices that have high rates of use of specialty pharmaceuticals. A recent *New York Times* article provided an analysis showing that an oncologist working at a hospital could generate $1 million in profit through the 340B program if the purchased products were used to treat patients with commercial insurance.[21] Although the program is not the sole driver of hospitals' practice acquisition strategies, it is clearly a powerful contributor to this change in the marketplace.

The increasing scale of the 340B program drove its cost from $1 billion per year previously to $6 billion in 2010.[1] It is projected to cost $12 billion by 2016.[22] And there are concerns that the program may cause a further market distortion: Manufacturers may raise their prices in the market in an effort to compensate for the loss in revenues related to the program.[22]

Many of the market distortions that have already resulted from the 340B program may have negative economic effects on patient care. For example, a 2013 study found that between 2005 and 2011 the share of chemotherapy administration services provided in community physicians' offices declined from nearly 90 percent to 66 percent. This reflects a significant shift

$100–$200

Million

Biosimilars cost $100–$200 million to develop and take 8–10 years to produce. In comparison, generic medications cost $1–$5 million to develop and take 3–5 years to produce.

to hospital-based settings, where patients may face higher facility costs than they would in provider-based clinics.[23]

Costs per treatment episode are 28–53 percent higher in hospital outpatient settings than in physician office settings, and private payers pay more for hospital outpatient care than for care received in physician offices.[24,25] Similarly, hospitals bill commercial health insurance plans an average of 189 percent more per dose for routinely prescribed cancer drugs, compared to physician offices, which results in "significant increases in member financial burden."[26]

New regulations related to the 340B program are expected in 2014 from the Department of Health and Human Services. Advocates of the present state of affairs argue that it meets the original intent to "stretch scarce federal resources as far as possible, reaching more eligible patients and providing more comprehensive services."[27] In contrast, a recent policy statement from the American Society of Clinical Oncology recommended that policy makers "consider policy changes consistent with the original intent of the program and that take into account the changing demographics of oncology care."[28]

The 340B program was originally intended to serve as a narrow technical adjustment to the Medicaid Drug Rebate Program. However, its effect has been disproportionately significant across the entire health care marketplace, in terms not only of its direct cost but also of its impact on the structure of care delivery. Given the high price of specialty pharmaceuticals, continuation of the 340B program as it is now implemented could have even greater effects on patients and the market.

Biosimilars And Price Competition

Another important mechanism to control costs is to increase the use of off-patent agents. Specialty pharmaceuticals are predominantly submitted to the FDA for approval under a biologics license application. This approval pathway is not subject to the generic drug provisions of the Drug Price Competition and Patent Term Restoration Act of 1984 (commonly referred to as the Hatch-Waxman Act), so there is not a standard pathway for competitors to enter the market once a specialty pharmaceutical's patent expires.

To address this issue, the Affordable Care Act included provisions for the approval of biosimilar products, with the goals of generating price competition in the biologics marketplace and helping decrease costs in the broader market. The FDA has provided draft guidance on the scientific and safety criteria that must be met for biosimilar products to be approved, as well as on the types of meetings that will be required between the agency and drug developers during the review process.[29–31] However, the initial reviews will be conducted product by product, and the path forward remains murky.

Several biologic agents will lose their patent protection in the period 2013–18 (Exhibit 3). However, the effect of biosimilars on the cost of specialty pharmaceuticals is likely to remain limited in the immediate future. Unlike generic medications, which are estimated to cost $1–$5 million to develop and take 3–5 years to produce, biosimilars will cost $100–$200 million to develop and take 8–10 years to produce.[32]

Approval will require the generation of new clinical data to support the safety of the biosimilars, and they will not be considered interchangeable with the original molecules. Because of the cost and complexity of biosimilar development and production, it is expected that biosimilars will be discounted 20–40 percent from the brand-name product. In contrast, the FDA estimates that generic small molecules are discounted 80–85 percent from the brand-name products with which they compete.[33]

In 2010 the Congressional Budget Office estimated that biosimilars would yield only a 2 per-

EXHIBIT 3

Biologic Agents Coming Off Patent, 2013–18

Brand name (generic name)	Drug class	Year of patent expiration
Epogen or Procrit (epoetin alfa)	Red blood cell stimulating agent	2013
Neulasta (pegfilgrastim)	White blood cell stimulating agent	2015
Rituxan (rituximab)	Monoclonal antibody used in multiple cancer types	2015
Avastin (bevacizumab)	Monoclonal antibody used in multiple cancer types	2019
Herceptin (trastuzumab)	Monoclonal antibody used in multiple cancer types	2019

SOURCE Authors' analysis of data from Grabowski HG, Guha R, Salgado M. Regulatory and cost barriers are likely to limit biosimilar development and expected savings in the near future. Health Aff (Millwood). 2014;33(6):1048–57.

cent reduction in pharmaceutical costs by 2019.[34] Equally important, biosimilars are unlikely to dramatically decrease patients' out-of-pocket costs. In addition, the uncertainty surrounding the therapeutic equivalence of biosimilar products is likely to weigh on patients, further decreasing biosimilars' impact. It is important to consider the role of biosimilars in controlling costs, but that role is likely to be limited.

Novel Drug Development Approaches

Together the approaches outlined above—including cost sharing, tiers, the revision of the 340B program, and the introduction of biosimilars—are likely to have an incremental impact on the costs of specialty pharmaceuticals and on drug costs more broadly. This is because none of the approaches addresses fundamental issues within the current cost structure of the market. We believe that more substantial changes are needed to reduce costs.

To the extent that the costs of research and development drive investment and pricing decisions for pharmaceutical companies, a "grant and access pathway" is one potential solution. In this pathway, drug developers would compete for federal grants to support the costs of developing an agent. In return for access to this nondilutive financing mechanism—that is, one in which the ownership of the ultimate product is unaffected by the infusion of capital—developers would agree to concessions on prices. This approach would protect investors' returns while also reducing the need for private capital in the development of novel therapies.[35]

Other approaches to reducing the costs of drug development could include relying on preclinical biomarker development to better identify target populations for clinical trials and involving patient advocacy groups in trial design, patient recruitment, and participant retention.[36] In reexamining the clinical research business model, many opportunities for reducing the costs of drug development become apparent.[37,38]

Conclusion

The development of specialty pharmaceuticals is emerging as the major portfolio strategy for the pharmaceutical industry. The transformation of this category of drugs from a minor segment of the industry to its dominant role in the brand-name pharmaceutical market has significant implications for payers, patients, and policy makers. In this article we have highlighted some of the policy issues raised by the growth of this category. As we have outlined, cost and access issues related to these products are likely to dominate health policy and health financing discussions during the next several years.

The economic aspects of our analysis highlight the need for a far-reaching discussion of potential novel approaches to innovation pathways in the life sciences in the quest for both affordability and new technology. Specialty pharmaceuticals have already transformed the pharmaceutical industry. It remains to be seen whether the health care market is prepared for the implications of this profound development. ■

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