

Economic Realities in Health Care Policy

VOLUME 3, ISSUE 1

IN THIS ISSUE:

Pharmaceutical Marketing and Promotion

Creating Access to Innovation



LETTER FROM THE EDITORS

The promotion and marketing of pharmaceutical products continues to be a controversial topic in the current health care debate and is the subject of this issue of *Economic Realities in Health Care Policy*. A previous issue in this series focused exclusively on the economics of direct-to-consumer advertising, whereas here we present data and evidence on a broader terrain with a particular focus on the potentially important role marketing and promotion play in enabling the flow of information that is quite difficult to convey to patients and physicians.

Our introductory essay frames the debate by describing the value of information in general and how it is particularly relevant to health care. Today's debate over pharmaceutical products is often concerned with access to treatment; while prices play a role in determining who has access to medicines, information about new treatments is crucial to creating access to medicines. If physicians and patients do not know enough about a medicine to use it, then they quite clearly do not have access to it regardless of its price.

The primary article in this issue, written by Professor Paul Rubin of Emory University, reviews several recent studies and offers additional new insights on the economics and potential value of the pharmaceutical industry's investment in marketing and promotion. He finds that such spending benefits both patients and physicians in a variety of ways. The evidence suggests that pharmaceutical representatives are valued highly by physicians as a reliable source of information, that product samples play several useful and important roles for patients, and that there is no clear link between promotional spending and pharmaceutical prices. Given the importance of disseminating new medicines for improving health and quality of life, spending on promotion and marketing seems to benefit patients, by increasing knowledge about, and therefore access to, new treatments, as well as the firms who do the spending, by increasing the pool of patients under care.

We hope this issue will help illuminate the debate over the marketing and promotion of pharmaceutical products by demonstrating the critical value conveyed through such practices to patients and consumers of these medicines. Future issues of *Economic Realities in Health Care Policy* will address the role of intellectual property rights in drug development, the complementary role of public and private sources of research funding, and other issues of interest to the health policy community. As always, we appreciate the many comments we get from you and encourage you to share your thoughts and suggestions with us.

Richard L Manning, PhD
Neal A. Masia, PhD
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What Is Information Worth?

Richard L Manning, PhD, and Neal A. Masia, PhD, Pfizer Inc

If you were asked to name the most valuable commodity in existence—one that makes economies go; one that allows people to move from one decision to another with speed and accuracy; one that helps people buy what they need, helps them get a job, make more money, live a more satisfying life; one that lowers a business' cost of manufacturing and distribution; and moreover, one without which essentially all economic activity would grind to a halt—what would you choose?

Perhaps the most valuable commodity is one that few people think of as a commodity at all, but one which is in many cases under-priced, under-valued, and under-provided. That commodity is information.

Economic theory depends on the assumption that information is freely available—not just available, but costless to acquire. In the fantasy world of free information, markets are perfect. In this world, no one ever chooses the wrong menu item at a restaurant or takes a wrong turn when driving; everyone always chooses the right college (actually, if information were free, nobody would need to go to school at all!) and marries the right person. In this world there are no self-help books.

In the world of free information, nothing would be spent on advertising goods and services; there would be no need for the Internet, no need for credit reporting agencies, and no need for many of the jobs that many of us do on a daily basis.

Of course, in the real world, information is not free and substantial resources are devoted to acquiring information about things that are vital to people's lives and livelihood. Not having perfect information means that people often do not know, at any point in time, what they need to fill their wants and needs. Only by acquiring information are their wants and needs fully understood and ways to meet them realized.

Perhaps nowhere is the need for freely available information more apparent than in the area of health care. Information about available preventions and treatments for serious conditions and diseases can save lives when communicated effectively.

Who Needs Health Care Information?

Patients

Although most people are interested in maintaining or improving their health, they often lack the information needed to make healthy choices and the time to find that information. When patients visit a physician for a checkup, they are paying for information about their health and how to treat any conditions they have. Patients can receive “free” information if they invest the time to navigate the Internet in search of information about medical conditions. A less time-consuming way to get free healthcare information is through the marketing of health services directly to consumers. An

advertisement for a health product on television or a billboard may remind someone to make an appointment with their doctor, inform them of a new treatment for a condition they have, or remind them to take their medicine.

Doctors

Doctors rely on information to learn about new cures, treatments, and procedures that can help their patients. Most doctors do not have the time to read all the new studies that are published in the numerous medical journals and still see their patients. Instead, physicians rely on medical conferences, article abstracts, the *Physician's Desk Reference*, informal communications with their colleagues, and direct marketing as efficient ways to receive information. As the following article details, representatives from pharmaceutical and medical device companies are among the most frequent sources of information for doctors, providing a basis from which the doctor can seek additional information when needed.

Can Marketing Information Be Trusted?

How can we be sure that information provided by a company about its products is truthful? There are two ways the market self-corrects for false information. First, pharmaceutical representatives depend on good, long-term relationships that are built on trust. If a medical representative provides information that a physician believes to be or later learns to be false, substantial damage is done to the relationship, and the physician is less likely to rely on information from the representative or company again. Second, there is major competition among sellers of med-

ical products, so it is unlikely that inaccurate information will go unchallenged for very long. In addition to these ways that the market corrects for false information, there are state and federal government regulations that intensely govern the marketing and advertising of medical products and serious consequences for non-compliant companies. Only a product's scientifically proven capabilities, verified by strict regulatory agencies, can be used in its marketing.

The proof that these constraints work is that some products are not successful. The reality is that marketing cannot make a drug work better or worse on a given patient, and all the marketing in the world cannot make consumers repeatedly buy a product that they do not value.

What Does It Mean for Patients to Have "Access" to Medicines?

The debate over access to medicines currently centers on drug prices, but that view ignores a very important dimension of access. Patients need access to effective treatment—and medicines are only effective when physicians and patients understand how to use them. A bottle of pills sitting on a shelf or taken incorrectly will improve health no more than a prescription that goes unfilled or unwritten. A patient who is unaware that he might benefit from treatment does not have access to care, and neither does a patient whose doctor is unaware of the latest medical advances. So while prices are one important influence on access, availability of information is another. In the US, the most prominent source of information on medicines is the pharmaceutical industry, with research and manufac-

turing firms spending over \$20 billion promoting and marketing their products in 2002.¹ One key public policy question is whether that spending hampers access (by raising prices) or increases access (by driving up awareness of new treatments). An informed public debate on the topic has so far been absent, despite an increase in the evidence on the real impact of marketing and promotion on the behavior of physicians and patients and the price of medicines.

Most industry critics claim that promotion and marketing lead to overuse of medicines and unnecessary costs. The critics contend that pharmaceutical companies raise prices in order to pay for promotion and marketing efforts and that firms spend more money promoting their

products than discovering them.² Such critics discount or dismiss suggestions that marketing might have a positive impact on access to new medicines. Recent academic research, however, paints a different picture, with evidence that has been largely missing from the public debate.

The following essay attempts to encourage such debate by highlighting new research studies, data, and analyses focused on measuring the impact of promotion and marketing. It first discusses the impact of pharmaceutical promotion and marketing on physician behavior, patient behavior, and the public's health. It then explores whether there is really a connection between pharmaceutical marketing and prices.

The Economics and Impact of Pharmaceutical Promotion

Paul H. Rubin, PhD

Samuel Candler Dobbs Professor of Economics and Law, Emory University

In this essay, I discuss some recent research on the effects of pharmaceutical promotion and marketing. I first discuss the magnitude and nature of this spending and show that it provides useful and beneficial information to patients and physicians. I then discuss evidence of the relation between promotion and prices.

Part I. What Do Promotional Expenditures Do?

Here I discuss the purpose of promotional spending and analyze the sorts of information provided by this spending.

How Large Are Promotional Expenditures?

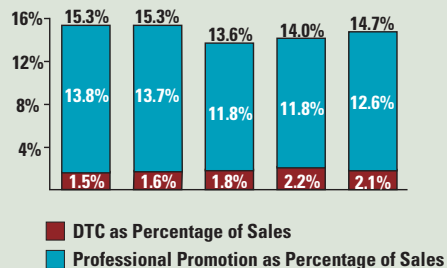
In order to understand the impact of pharmaceutical promotion and marketing on decision making and on patients, it helps to understand the magnitude of these expenditures. A recent, well-publicized report, frequently cited in Washington policy debates, claimed that pharmaceutical firms spend more on marketing than on R&D. The report claimed that pharmaceutical firms spend 35% of their revenues on marketing, general, and administrative costs. The authors of the report asserted that it is impossible to get a more detailed breakdown, and so they assumed that most of that spending was for promotion.³

A cursory look at readily available data shows the opposite to be true. The US General Accounting Office (a research arm of the US Congress) recently examined industry spending on promotion at the request of the Congress. The GAO report's data, combined with industry sales data, show that spending on pharmaceutical marketing and promotion has consistently accounted for about 14% to 15% of total revenues, as shown in Figure 1.⁴ Further, as illustrated in Figure 2, the GAO report shows that in 2001 the pharmaceutical industry spent substantially more on R&D than on marketing, continuing a long-standing trend.

Besides, a comparison of R&D spending with marketing is not very useful. Those

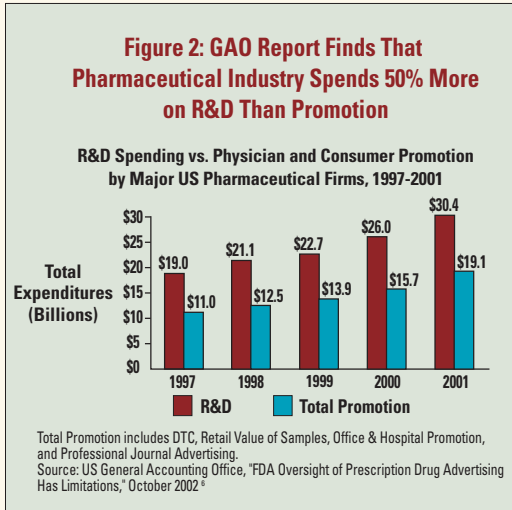
Figure 1: Share of Revenue Going to Promotion Has Been Flat

Sales and Marketing Spending as Percent of Total Sales (Including DTC as Share of Total), Major Pharmaceutical Firms, 1997 - 2001.



Source: GAO (marketing data) and PhRMA (sales), following methodology of Berndt et al., "Promotion of Prescription Drugs to Consumers," *New England Journal of Medicine* V346, no. 7, February 14, 2002²

who make such a comparison seem to think that R&D is “good” and marketing and promotion are “bad.” But R&D and marketing are both expenditures on information, and they are really not as different as critics seem to believe.



Consider a drug company with some new substance that might be a useful therapy. The company wants to know if the substance will actually be useful—that is, the company wants information about the substance. R&D is the effort to obtain that information: Does the substance treat a disease or condition effectively? Is it safe? Is there a market for it? The company will undertake elaborate tests to answer these questions to the FDA’s satisfaction. Just as importantly, a company’s credibility and reputation depend upon the fact that those tests are conducted in accordance with the intensely rigorous standards of the larger scientific community. All of these tests are an effort to gather more information about the substance and its properties.

Now assume that the substance has passed these tests and the company

decides to go ahead and produce the drug. During the R&D process it has gathered much information about the drug and what it does. But that information is useless unless it is conveyed to those who decide to use the product. This is the role of marketing—providing information to decision makers. Sometimes the information is best provided to doctors and sometimes to patients, but in any case it must get into the right hands before the drug is useful.

Both the R&D and the marketing process are concerned with information. In one case, the information is produced; in the other it is distributed. Neither process is valuable (to the company or to patients) without the other. Without R&D and information acquisition, there are no drugs to market. Without marketing and information provision, the information gathered during the R&D process will not benefit patients. R&D and marketing are to medicine what blades are to scissors: it takes both to make a useful tool.

The Role of Marketing and Advertising in Providing Information

Marketing and advertising are not typically thought of as means of conveying information, but that is exactly what these activities accomplish. Clever advertising, the design of a distinctive package, and a memorable trademark are all ways of conveying information to consumers who have a range of wants as well as a range of abilities to interpret and understand the information that is conveyed to them on a daily basis. Marketing efforts lower the cost of obtaining information in a wide range of circumstances.

One function of advertising is to provide information about quality of products to consumers. Imagine a world without brand names or advertising. If every can of chicken soup on the store shelf simply said, “chicken soup,” a consumer could not tell which variant was preferred. This would also reduce the incentive of the manufacturer to produce high-quality products. This is the quality-signaling function of advertising.

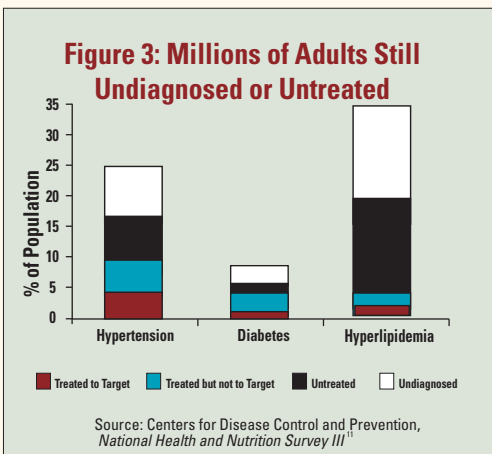
Another function is to provide information about terms of sale and characteristics of products. Think about ads for competing cell phone companies, with long discussions of phones, rates, geographic availability, and numerous other terms. All of this is information useful for transactions.

Advertising and promotion are even more important for new goods. In this case, advertising can inform consumers of a product they may not even have known existed. For example, a few years ago no one used small computers to keep track of contacts and appointments. Palm invented a machine that would do that. Advertising was an important way in which consumers learned about the existence of this product.

This kind of advertising is particularly important for pharmaceuticals. In a previously published article, I pointed out several ways in which direct-to-consumer advertising could provide this information.⁷ For example, a consumer might have been diagnosed with an untreatable condition for which a treatment is now available. Advertising can inform him of the treatment. Advertising can even make someone aware that he or she may have a treatable condition, as when advertising informs consumers of the symptoms of depression. Advertising can also tell of products with reduced side effects or easier ways of using the drug.

Not only is information among the most valuable of commodities; it is also very difficult and costly to provide in an effective manner. How many times in your school days did a teacher make an announcement in class followed immediately by a student asking a question that was covered in the announcement? (My students do it all the time.) Getting information into the hands of potential consumers is very valuable for all involved, but it is often difficult to get people to pay attention, understand, and internalize the information. Marketers are professionals at performing exactly these functions—even better than professors.

Although these issues are most commonly thought of in the market for everyday goods and services, they apply just as directly to the market for medical care—in many cases more acutely than elsewhere. This is especially true since this industry is continually producing new and improved products, and it is important—sometimes, literally vital—that physicians and consumers learn about these products.



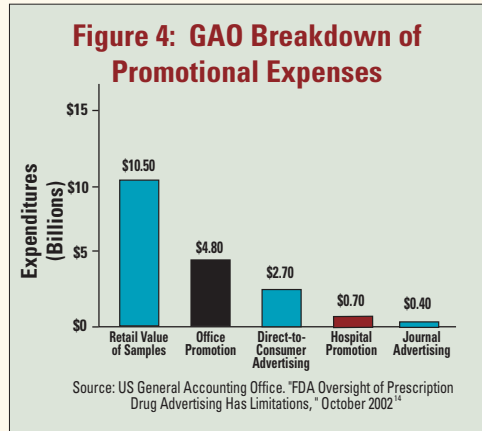
The wide-scale underdiagnosis and undertreatment of disease in the US provides a useful backdrop for any analysis of the appropriateness of increased prescription drug use. Public health officials have shown concern over the increasing incidence of diabetes, obesity, high cholesterol, hypertension, depression, asthma, Alzheimer's disease, and many other conditions.⁸ As revealed in Figure 3, many patients with such conditions are currently not treated or not treated to target.⁹ Undertreatment imposes a significant cost—for example, one study found untreated depression costs employers over \$30 billion per year.¹⁰ Each form of promotion discussed below—free samples, professional marketing, and DTC advertising—plays a role in increasing treatment rates, improving the quality of life for patients, and lowering the cost of undertreatment.

Where Do Promotional Dollars Go? What Do They Do?

It is useful to understand the allocation of promotional expenditures. Figure 4 presents GAO's breakdown of promotion and marketing spending into its various components. The GAO found that product samples account for about half of the value of marketing and promotion; marketing to health care professionals (which includes office and hospital promotion as well as journal advertising) accounts for 35% and consumer-oriented marketing accounts for just 15%.

Samples

Pharmaceutical firms distributed over \$10 billion worth of free product sam-

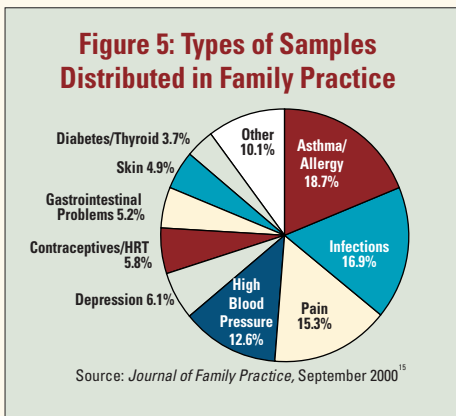


ples in 2001, accounting for more than 50% of total promotion and marketing.¹² Doctors may distribute samples for several reasons—for instance, to get patients started on therapy right away, to help patients who might not be able to afford medicines on their own, or to optimize dosing or choice of drug before committing to a particular course of treatment.

A recent poll of physicians reported that over 90% found product samples “valuable” or “extremely valuable” in their practices.¹³ Samples enable doctors to see for themselves how well specific medicines will work for particular patients. On the other hand, industry critics have speculated that free samples may do more harm than good by encouraging people to take medicines that they otherwise would not need. The available data on who receives samples and how doctors view their value suggest that in fact patients benefit from sample medicines and that samples are an important part of the health care safety net for low-income and uninsured patients.

Researchers have examined physicians' decisions to distribute samples to their patients. One study, funded by the

US Agency for Health Care Policy and Research, examined sample use in primary care practices and found that samples were used in about 20% of all patient interactions across a wide range of conditions. Figure 5 provides a breakdown of the types of samples distributed; the article also notes that in the vast majority of cases (95%), samples are distributed at the initiation of the doctor rather than the patient.

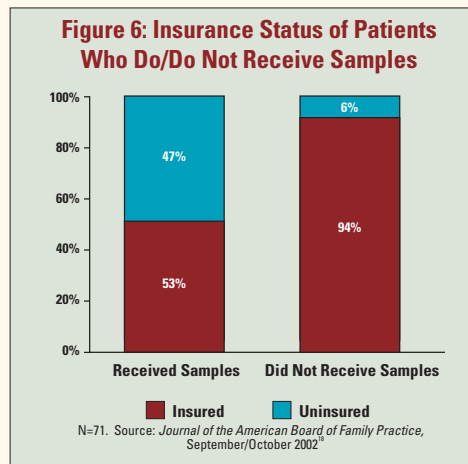


The study concluded that with regard to the impact of drug company representatives, patients “...profited in a spectrum of ways. While samples represented tangible cost savings, immediate relief, and convenience to the individual patient... patient education materials facilitated further understanding of their diagnosis, potentially leading to a higher degree of satisfaction with their health care.”¹⁶

Additional research has examined why doctors provide samples to some patients more than others. One study examined use of samples for 71 hypertension patients; Figure 6 demonstrates that the lack of insurance coverage was a key distinguishing characteristic of those who received samples. Nearly half of the patients who received samples had no insurance.

A separate survey of physicians looked at the key factors influencing physicians’ decisions to distribute free samples. The authors found that the “patient’s financial situation” was a considerable or strong influence 86% of the time and a patient’s insurance status was of influence 63% of the time.¹⁷ It is clear that physicians use samples to provide treatment for those who otherwise might not be able to afford it.

Samples give doctors the chance to see how a medicine works firsthand (thus increasing the likelihood that the right drug will be prescribed), and they also fill several key needs for patients.



Professional Marketing

The other large aspect of promotional expenditures is professional marketing—often called “detailing” because its main purpose is to provide product details to health care professionals. This accounted for roughly \$6 billion worth of marketing and promotion in 2001. Examples include in-office visits with doctors and other prescribers and advertising in professional and medical journals. The US Food and Drug Administration regulates

the content and delivery of such information.

Published research has examined whether doctors see value in pharmaceutical promotional efforts. Figure 7 summarizes a recent survey on how doctors rate the value of their interactions with pharmaceutical representatives. As indicated in the chart, over 90% of physicians surveyed said that the education provided by pharmaceutical representatives about specific drug therapies was either “somewhat valuable” (53%) or “very valuable” (38%). A separate study found that “the sources of greatest practical importance (to physicians) were those involving the transfer of information through the medium of personal contact.”¹⁹ Such contact comes mainly in the form of visits from pharmaceutical representatives and attendance at industry-sponsored education events.

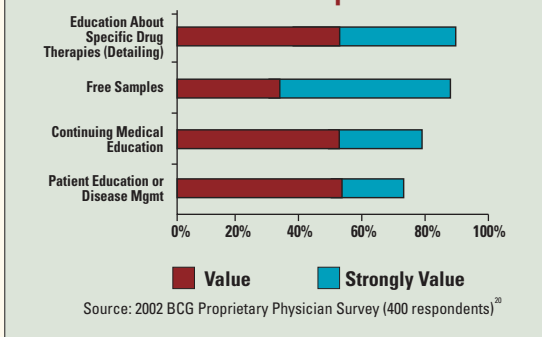
The fact that physicians value their interactions with representatives does not

mean that physicians simply believe everything they hear. A recent study of doctors examined in greater detail the relationship between physicians and pharmaceutical representatives, separating discussions into two categories— “unsolicited” and “solicited.” “Solicited” discussions involve requests from the doctor for information from the representative, including new study results, information on potential side effects, and so on; “unsolicited” discussions are initiated by the representative. Figure 8 (page 12) shows how credible physicians find the information they get from representatives in each type of visit.

The study suggests that doctors find pharmaceutical representatives to be a highly credible information resource. On the other hand, doctors exhibit some skepticism when approached with new information that they have not requested. One possible explanation is that new information is often presented to doctors very quickly, in a meeting lasting just a few minutes. The physician often returns to the industry representative with questions once the information has been reviewed. Rather than exerting undue influence on physicians, industry representatives actually appear to play a valuable role in providing necessary, timely information. These representatives are the primary conduit to physicians of the wealth of information residing throughout the pharmaceutical company and at the Food and

The fact that physicians value their interactions with representatives does not mean that physicians simply believe everything they hear.

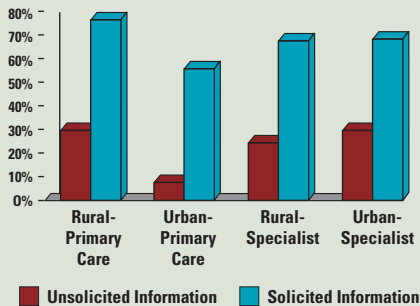
Figure 7: How Physicians Value Interactions with Pharmaceutical Representatives



Drug Administration. The study suggests that while physicians are not easily persuaded by unsolicited information, those same physicians depend on industry representatives for credible data on the frequent occasions when they find the information useful or valuable. Whether or not the information is solicited, it always comes from the same body of FDA-approved evidence.

Figure 8: Pharmaceutical Representatives as a Physician Resource

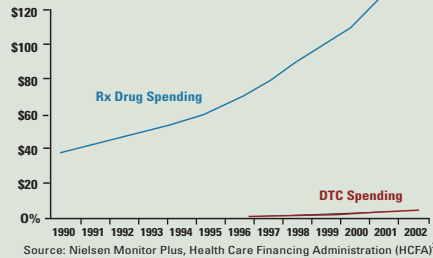
Percentage of Doctors Who Get Information from Representatives and Find Responses "Credible"



N=118. Source: Slotnick, H.B. et al. "How Physicians 'Learn' from Pharmaceutical Representatives: An Exploration," *The Journal of Continuing Education in the Health Profession*, Vol 19, pp 84-96, 1999.²¹

In a separate survey, researchers found that one-third of physicians agreed with the statement that "most doctors now rely on pharmaceutical companies for most of their knowledge of the latest medical advances."²² Further, studies have found that marketing efforts are critical to ensuring that advances in therapy are quickly adopted in specific disease areas.²³ Such research suggests that without the information provided by pharmaceutical representatives, utilization of medical innovations would decrease substantially—in other words, the absence of information would severely restrict access to innovative products. Note that the spread of new medicines has been

Figure 9: DTC Spending vs. Total Pharmaceutical Spending (\$ billions)



Source: Nielsen Monitor Plus, Health Care Financing Administration (HCFA)²⁸

shown to reduce other types of health care spending such as hospitalization,²⁴ implying that without information on new medicines, overall health spending might increase. Moreover, research has shown that improved pharmaceuticals are important contributors to increases in life expectancy and real incomes.²⁵

Direct-to-Consumer Promotion

The category of promotion most visible to patients—direct-to-consumer (DTC) advertising—is actually the smallest. In 2002, the pharmaceutical industry spent about \$2.7 billion on all DTC ads, including over \$2 billion on television ads. Still, as demonstrated by Figure 9, while the total amount of DTC advertising is substantial, it represents only about 2% of total pharmaceutical industry revenues.

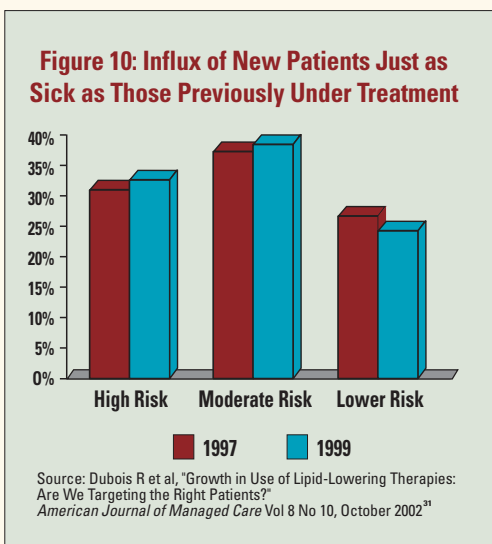
This monograph series has previously devoted a full issue to DTC advertising.²⁷ This report presents more recent research into the potential public health impact of DTC and its impact on the physician-patient interaction.

Professors at the Harvard Medical School and MIT recently published a study (funded by the Henry J. Kaiser Foundation) examining the effects of the increase in prescription drug advertising

across a range of therapeutic classes.²⁸ One important question in the research was whether DTC advertising has had an impact on prescription drug spending and, if so, whether such increases were the result of market share growth for the advertised brands or increased treatment of disease generally in the advertised product's disease category. If the main impact of DTC spending is to increase the total pool of patients under treatment, then there is a likely public health benefit, particularly in therapeutic areas where underdiagnosis is a problem. On the other hand, if advertising leads only to changes in market share—that is, causing patients already taking medicine to switch brands—then the public health benefits of such advertising might be less. However, even in this case, there might be benefits if advertising of factors such as reduced side effects or more convenient dosing leads to a better match between patients and medications. This in turn might lead patients to increase compliance with physician instructions, also leading to health benefits.

The authors found that consumer advertising had a statistically significant impact on total product sales for a therapeutic class but not on market share within a class. Those results, taken together, imply that advertising increases treatment rates without affecting the doctor's choice of treatment. In other words, DTC advertising pays off for pharmaceutical firms by encouraging people to see their doctors—which sometimes (but no more than usual) results in additional prescriptions for the advertised product. At least one other recent economic study found the same result.²⁹

Another recently published study examined whether DTC advertising for cholesterol medicines in particular was driving unnecessary utilization of prescription drugs.³⁰ Cholesterol treatments are among the most heavily advertised medicines; and most observers would agree that for the advertising to be worthwhile, the number of patients undergoing drug therapy must increase. Policymakers and payers have a keen interest in knowing whether the advertising is bringing in patients who fit the profile of those most in need of treatment, or whether the increased utilization is for patients who really do not need such treatment. This particular study focused on patients in managed care plans in 22 states, for whom the use of cholesterol medicines increased significantly between 1997 and 1999 (as advertising and promotion for such medicines increased). In 1997, 5% of the enrollees were taking cholesterol medicines; by 1999, 8% of enrollees were on such medicines—an increase of about 30,000 patients out of roughly 800,000 total enrollees in the managed care plans. The key question is



whether the risk profile of the expanded patient group under treatment by 1999 was any less severe than those under treatment in 1997—in other words, whether the new patients (presumably brought in because of the increase in advertising and promotion) were at any less risk for major heart problems than those who were already being treated. The authors were able to categorize patients, based on federal treatment guidelines, into seven risk categories.

Those in Category 1 were at highest risk and had documented heart disease; those in the lowest categories had merely been diagnosed with high cholesterol or were at risk for such a diagnosis. Figure 10 shows the proportion of patients using cholesterol medications in each year that fell into each risk category.

The study found that the influx of patients did not make the overall population under care look less “risky,” or less in need of treatment. If anything, the increase was disproportionately in the highest risk categories; in 1997, 17% of patients under care were in the two high-risk categories, but by 1999, 21% of patients were high-risk. At least some of those high-risk patients were likely

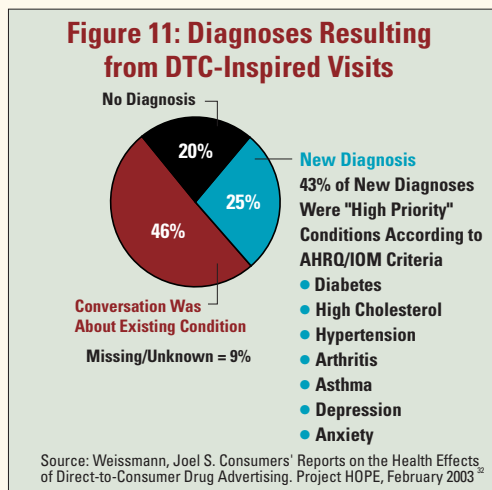
encouraged to see their doctor by television advertising.

More broadly, a recent survey of physicians conducted by the Harvard School of Public Health examined what happened when patients appeared in the doctor’s office to discuss medicines they had seen advertised. As shown in Figure 11, about 25% of such conversations resulted in a new diagnosis, nearly half of which were for high priority conditions. The evidence suggests that in many cases public health officials should welcome the information provided through consumer advertising for medicines.

Part II. Promotion and Prices: Does Marketing Increase Drug Prices?

Part I provided considerable evidence on the potential public health benefits of pharmaceutical promotion and advertising. While those benefits may be enormous, the advertising and promotion would not occur if they did not provide a financial return to the companies paying the bills. And while expanding access to appropriate pharmaceuticals by providing information clearly serves patients well, if such information causes prices to increase, the impact on access could run in the opposite direction. To date, the public debate has focused much more on the potential connection between promotion and prices than on the connection between promotion and the use of medicines generally. This section addresses the price issue directly.

Many observers assume that pharmaceutical firms must “pay” for marketing by



(Continued on page 16)

Box 1

Can Advertising Pay Without Price Increases?

Imagine a company, WidgetCo, that currently sells a million widgets per year for \$1 a piece with production costs of 50¢ per widget, for tidy profit of \$500,000 per year. Suppose that the company spends \$150,000 on a new advertising campaign. As Chart 1 illustrates, there are many ways WidgetCo can earn a return on its investment.

On the one hand, the campaign might make the widgets seem more desirable to existing customers, enabling WidgetCo to raise prices. Suppose WidgetCo increased prices by 20%. Since WidgetCo currently sells one million widgets per year, a 20¢ price increase will raise revenues by \$200,000, to \$1.2 million. Total costs will now equal \$500,000 for production plus \$150,000 for advertising, or \$650,000. Total profits will therefore increase to \$550,000 for a \$50,000 net increase. That provides a healthy 33% return on the advertising investment (\$50,000 on an investment of \$150,000).

On the other hand, suppose the advertising campaign is designed to increase awareness of the existence of WidgetCo brand widgets to new customers. If the campaign increases WidgetCo sales by 40%, 1.4 million widgets are now sold. Sales will increase to \$1.4 million at the going rate of \$1. Since costs are 50% of revenues, production costs will rise to \$700,000. Adding in the \$150,000 cost of the ad campaign,

total costs will be \$850,000, and total profits will be \$550,000 (\$1.4 million minus \$850,000). Profits have again increased by \$50,000—providing the same return on investment of 33%, without a price increase.

Finally, what if WidgetCo announces in its advertising that it is now lowering prices to 90¢? This will probably expand the customer base even further, though WidgetCo will now only earn just 40¢ on each sale (because it still costs 50¢ to produce each widget). What will it take for WidgetCo to

Chart 1: Many Ways for WidgetCo to Earn a Return on Advertising

	Scenario 1 - Persuasion Allows 20% Price Increase	Scenario 2 - Awareness Drives 40% Volume Growth	Scenario 3 - 10% Price Cut and Awareness Spur 75% Volume Growth
Original Revenue	\$1,000,000	\$1,000,000	\$1,000,000
Original Cost	\$500,000	\$500,000	\$500,000
Original Profit	\$500,000	\$500,000	\$500,000
Advertising Cost	\$150,000	\$150,000	\$150,000
New Price	\$1.20	\$1.00	\$0.90
New Volume	1,000,000	1,400,000	1,750,000
New Total Revenues	\$1,200,000	\$1,400,000	\$1,575,000
New Production Cost	\$500,000	\$700,000	\$875,000
New Total Cost (Includes Advertising)	\$650,000	\$850,000	\$1,025,000
New Profit (Total Revenues - Total Costs)	\$550,000	\$550,000	\$550,000

get a \$50,000 increase in profits in this case? Total profits must equal \$550,000. If they sell 1.75 million widgets—or 75% more than current sales—WidgetCo will have production costs of \$875,000 and advertising costs of \$150,000, for a total cost of \$1.025 million. At the new price of 90¢, revenues will be \$1.575 million, for a total profit of \$550,000, a net profit increase of \$50,000, and the same net return of 33%.

charging higher prices. While this assumption may have a certain intuitive appeal, the available evidence suggests that the story is more complicated and that in fact the opposite might be true.

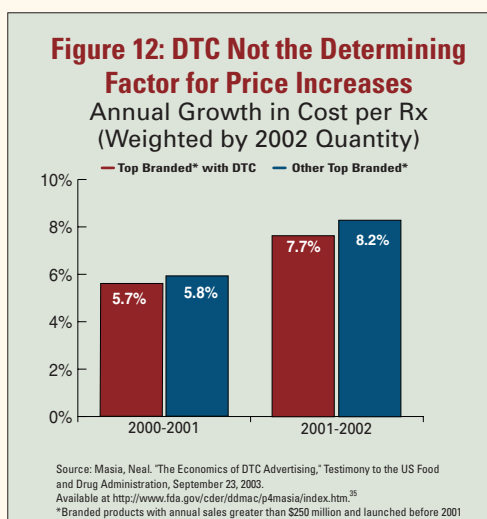
Even if a company would like to use advertising to increase its prices, it may not be able to do so. After all, for many products, there are competing sellers. While Company A may try to increase demand for its product by advertising, Company B is trying the same thing. The result is often that consumers (and, for pharmaceuticals, third parties such as prescribing physicians and managed care organizations) begin to view the products as competitors and focus on price as a way of deciding which to use. A recent study on pharmaceutical marketing to physicians in the *Journal of Marketing* found that on net, "...detailing and free samples are mostly informative and increase price sensitivity."³³ In other words, detailing and samples made doctors and patients more aware of their treatment options and more sensitive to prices, suggesting that prescription drug advertising could make prices lower.

More generally, economic theory suggests there is no predictable link between advertising for a product and the price of that product. Advertising sometimes can result in higher prices, sometimes in lower prices.³⁴ A business might earn a return on advertising investments through price increases, or sales volume growth, or both. Put another way, prices do not need to increase for advertising or promotion to be "worth it" for a business. Box 1 (page 15) demonstrates a few of the many possible ways for a company to earn a return on its investment in advertising.

To illustrate the "missing link" between marketing and prices, we turn now to a more concrete analysis of the case of DTC advertising.

Illustration: DTC Advertising vs. Price

DTC advertising has been a specific focus of attention for those who believe that marketing expenses lead to higher prices.³⁶



At a US Food and Drug Administration hearing on Direct-to-Consumer advertising held in September 2003, a presentation from Pfizer included the results of a study comparing prices, price changes, and levels of advertising for products in the US with sales in 2002 of more than \$250 million that had been launched prior to 2001 (ensuring that sales growth was based on full-year sales). Of the 76 drugs that fit the study criteria, 33 were advertised directly to consumers in 2002, and 43 were not. The annual percentage change in aver-

age price per prescription in 2001 and 2002 for each category was used to compare price growth for those products with advertising and without. The results of the analysis are presented in Figure 12.

The data suggest that products advertised directly to consumers experienced slightly lower price increases than products promoted only to physicians; most importantly, there was no link between advertising and price changes.

Conclusion

Pharmaceutical firms invested over \$32 billion in 2002 to discover innovative new medicines.³⁷ What will happen when those investments yield new cures for Alzheimer’s disease, or heart disease, or cancer—or when in the course of their research, scientists discover new uses for existing therapies? After the medicines make it through the multi-year approval process and are available to the public, they will be used only if doctors and patients learn about them.

The organizations with the strongest incentives to inform both patients and their doctors about those new treatment options are, of course, the companies that invent them and have the exclusive right to sell them. Proponents of policies that would curtail the provision of such information often believe that such restrictions will ensure “fair access” to treatments, on the erroneous belief that less spending on advertising would lead to lower prices. This review suggests that marketing and promotion do not raise prices. Restrictions on marketing would in fact diminish access to innovative care by slowing the dissemination and adoption of new treatments. Further, restricting the industry’s ability to provide information on its products would surely lower the financial prospects for any new drug—providing a sure and strong disincentive for additional research investments.³⁸ Although blocking the primary source of information on new treatments would undoubtedly hurt the pharmaceutical industry, the long-run impact on patients would be worse. Public policies should be designed to make it easier, rather than more difficult, for consumers and physicians to learn about health care innovations that can improve—or even save—their lives.

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