

Physicians Report On Patient Encounters Involving Direct-To-Consumer Advertising

Doctors see both positive and some negative effects on their patients and practices.

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ABSTRACT: We surveyed a national sample of 643 physicians on events associated with visits during which patients discussed an advertised drug. Physicians perceived improved communication and education but also thought that direct-to-consumer advertising (DTCA) led patients to seek unnecessary treatments. Physicians prescribed the advertised drug in 39 percent of DTCA visits but also recommended lifestyle changes and suggested other treatments. Referring to visits when the DTCA drug was prescribed, 46 percent said that it was the most effective drug, and 48 percent said that others were equally effective. Prescribing DTCA drugs when other effective drugs are available warrants further study.

PERHAPS ONE OF THE MORE CONTROVERSIAL health care issues to emerge during the past decade is direct-to-consumer advertising (DTCA) of prescription drugs. Although pharmaceutical companies have been attempting to influence physicians' prescribing habits through advertising and other means for decades, since the U.S. Food and Drug Administration (FDA) released guidelines in 1997 that facilitated broadcast advertising for drugs, DTCA has become far more prevalent and visible. Between 1997 and 2001 the amount spent on DTCA more than doubled, from \$1.1 billion to \$2.7 billion, although spending may have leveled off during the past year.¹ Spending on all promotional activities (including DTCA) totaled \$19.1 billion in 2001. By comparison, drug companies' spending on research and development (R&D) increased 59 percent, from \$19 billion to \$30.3 billion.² During this same time period, drug spending was steadily rising; many pa-

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tients found themselves inadequately insured for an important component of their care, and providers' ability to contain costs was strained.³ Because some critics believe that DTCA leads to overuse of costly drugs, it is not surprising that it has come under increasing scrutiny.⁴ The U.S. General Accounting Office (GAO) reported that in just one year the number of prescriptions for the most heavily advertised drugs increased eight times as much as prescriptions for other drugs.⁵ In the same report the GAO raised concerns over the FDA's ability to review drug ads for misleading content in a timely manner. Concern over DTCA has led to calls for stricter limits on advertising and ad content, changes in pharmacy benefits, and controls on formularies.⁶ Issues of whether to consider cost-effectiveness or to pay more for some treatments that are functionally equivalent to less costly options are particularly important, in light of Medicare's new drug benefit.⁷

The pharmaceutical industry takes sharp exception to these criticisms, claiming that DTCA helps educate patients.⁸ According to drug companies, better-informed consumers can be more effective partners in their own care, are more likely to seek treatment for conditions they did not know could be treated, and can advocate for themselves during the physician encounter. Recent research tends to support at least some of these assertions.⁹ At least one former critic has changed his views on this topic.¹⁰

Physicians bear ultimate responsibility for prescribing drugs in the United States. Indeed, the premise of the "learned intermediary" has protected drug companies from litigation in the past, although its future applicability has come into question.¹¹ Given the impact of DTCA on patient care, it is not surprising that physician groups have weighed in. The American College of Physicians feels that DTCA "is not a proper practice" and "undermines the patient-physician relationship," although it accepts the reality of the role of DTCA in American society.¹² The American Medical Association (AMA) perceives that DTCA places a time burden on physicians but accepts the practice as long as there are efforts to ensure clear and balanced information.¹³ Surveys of physicians show a mixed picture. Some physicians applaud DTCA for increasing patients' awareness, encouraging patients to seek medical advice for conditions that might otherwise go untreated, and improving doctor-patient communication.¹⁴ Negative views are also reported, sometimes in the same survey, including concerns that patients misperceive a drug's effectiveness, that time is wasted explaining a drug's pros and cons, that DTCA challenges physicians' influence and authority, that it increases prices for drugs, and that it fails to convey a balance of risks and benefits.¹⁵ Of increasing concern is whether patients pressure physicians to prescribe advertised drugs, perhaps against clinicians' better judgment.¹⁶

Lacking from much of the debate surrounding DTCA is empirical evidence of its impact on patients' health and health care. A recent national survey found that patients reported benefits from their interactions with physicians related to DTCA, including diagnosis of new conditions and delivery of other health care

services that are widely perceived as beneficial.¹⁷ However, patients may be limited in their ability to report on alternative treatments and may be biased toward perceiving positive short-term outcomes.

This paper describes the results of a national survey of physicians who reported on recent patient visits during which they discussed advertised drugs. Our goal was to describe physicians' perceptions of actual health care experiences and predicted outcomes and their attitudes toward DTCA as it affects medical practice. The study addressed the following questions: (1) What are physicians' perceptions of the effects of DTCA on their practices and the health of their patients? (2) How often and for what sorts of conditions do physicians prescribe advertised drugs requested by their patients? (3) What other health care recommendations and actions by the physician result from visits involving discussions of advertised drugs? (4) How often do physicians prescribe advertised drugs when other drugs or treatments may be equally or more effective? (5) What outcomes of care do physicians predict will occur when they prescribe advertised drugs for their patients?

Methods

■ **Study design.** The data are from a survey designed by a team of researchers from Harvard University/Massachusetts General Hospital and Harris Interactive. The team had full control over the content of the survey, access to the data, and control over interpretation of the results. Harris Interactive conducted the fieldwork. The sample was randomly selected from a national list of physicians provided by Medical Marketing Service. This list, which includes both AMA members and nonmembers, is drawn from the AMA Physician Masterfile and is updated weekly. We excluded pediatrics; specialties that have little direct patient contact (such as pathology); specialties that are otherwise unlikely to have DTCA-initiated discussions with patients (such as radiology); and physicians who spent fewer than twenty hours per week in direct patient care.¹⁸ The survey was conducted between 12 December 2001 and 12 June 2002. A questionnaire was mailed to 1,300 physicians, along with a check for \$35 as an incentive (nearly a third of respondents who did not respond in the early rounds received a total of \$70). The response rate was also enhanced by offering physicians the option of completing the survey online and by conducting telephone follow-ups to nonresponders. A total of 643 physicians either completed the questionnaire on paper and returned it by mail (606) or completed it online (37), for a response rate of 53 percent. The margin of sampling error for questions addressed to the full sample was plus or minus four percentage points.

■ **Questionnaire development.** The questionnaire was designed to give physicians equal opportunities to express positive or negative (and in some questions, neutral) views about DTCA and to report sequelae of DTCA that might be considered beneficial, inconsequential, or harmful.¹⁹ The largest portion of the survey was designed to gather data on the health care events surrounding the most recent visits during which patients initiated discussions about prescription drugs they had seen

advertised on television or radio or in newspapers or magazines. We refer to such visits as “DTCA visits.” To develop the questions, we performed an extensive literature review and then held a focus group with ten physicians run by a professional facilitator in Boston on 25 January 2001. The instrument underwent pilot testing, during which individual questions were cognitively tested. The instrument was revised based on our findings and pretested on ten respondents.

Respondents were first asked to recount how many patients overall they saw in the previous week and how many were DTCA visits, using the above definition. If none had occurred in the past week, we asked about the past month. We asked respondents to identify the condition or problem for which the advertised drug was normally prescribed, whether the patient was diagnosed with this or any other condition as a result of the visit, and whether or not the diagnosis represented a newly diagnosed condition. Seventeen conditions commonly thought to be the subject of DTCA discussions (such as allergies and heartburn) were precoded, and respondents were given space for “other” responses. Other conditions were reviewed by a physician and coded into clinically coherent categories. To indicate whether these conditions merit public health interest, we identified the fifteen “high-priority” conditions listed by the Agency for Healthcare Research and Quality (AHRQ) and adopted by the Institute of Medicine (IOM).²⁰

The questionnaire next asked, “Did you prescribe the advertised drug? (i.e., the drug about which the patient initiated a discussion).” If the advertised drug was prescribed, we asked whether the physician prescribed it to accommodate the patient when alternative treatment options were available. If the drug was not prescribed, we listed several reasons adapted from studies by the FDA and asked respondents to check all of the reasons that applied.²¹

As noted in our previous work, DTCA visits may result in treatments beyond the mere prescribing of the advertised drug.²² Thus, we asked physicians whether they prescribed or recommended any other treatments, including non-DTCA or over-the-counter (OTC) medications, lifestyle modifications, referrals, surgery, and so on. Finally, we wished to know the effect of the prescribed drug on the patient’s health. Because the survey focused on recent visits, data on actual outcomes were not available. Therefore, we asked responding physicians to predict the most likely effect of the DTCA drug (large positive, somewhat positive, somewhat negative, large negative, or no effect) on the patient’s overall health, symptoms, underlying severity, compliance, and side effects. For comparative purposes, we posed similar questions with respect to the likely effects of other (non-DTCA) treatments and recommendations that were made as a result of the discussion.

Other variables were measured to assess the nature of the physician’s practice. These included practice volume, geographic setting (city, suburb, small town, rural), and practice setting (solo, two physicians, group of three or more, group-model health maintenance organization [HMO], staff-model HMO, hospital, free-standing clinic, or other). In preliminary analyses, responses from some practice

settings did not differ substantially from each other, so for this paper we collapsed the categories to solo/group practice, HMO, and other.

■ **Analysis.** We compared differences between proportions using chi-square tests. Analyses were performed using SPSS. All reported *p* values are based on two-sided tests. To calculate the percentage of visits involving a DTCA discussion, we divided the number of visits involving a DTCA discussion by the total number of visits during the prior week (or prior month). To adjust for sampling biases due to known demographic differences in nonresponse rates, we weighted the responses by region, specialty, training (foreign versus U.S.), and years since graduation from medical school, to reflect the national distribution of physicians. The weighting targets were developed based on the AMA Physician Masterfile, which represents all doctors of medicine (MDs) in the United States. Finally, to examine possible recall bias, we repeated the analyses for just those respondents who had had a DTCA discussion in the past week.

■ **Characteristics of the sample.** Of the 643 respondents, 31 percent were in primary care (family and internal medicine), 37 percent were in medical specialties, and 31 percent were in surgical specialties (Exhibit 1). Compared with data from the AMA, there was a slight underrepresentation of primary care physicians and a slight overrepresentation of medical specialties. DTCA discussions occurred in a small

EXHIBIT 1
Description Of Study Sample: Physician Practice Characteristics, 2001-02

Characteristic	Percent
All	100%
Specialty ^a	
Primary care	31
Surgical specialties	31
Other medical specialties	37
Practice volume (mean±sd)	
Hours per week in direct patient care	41.4±15.7
Prescriptions per week	79.3±87.6
Location	
City	48
Suburb	28
Small town	20
Rural	5
Practice setting	
Solo	25
2 or more physicians	47
HMO (group or staff)	5
Other ^b	23

SOURCE: Authors' survey of physicians' experiences with direct-to-consumer advertising (DTCA) of prescription drugs, 2001-02.

NOTES: N = 643. HMO is health maintenance organization.

^aPrimary care includes family practice and general internal medicine. See text for discussion of excluded physicians.

^bIncluded hospital, freestanding clinic, and "something else" in survey questionnaire.

proportion of all physician visits (3.1 percent), but a majority of physicians (53 percent) had participated in at least one DTCA visit in the past week (data not shown).

Study Results

Physicians reported mixed feelings about the impact of DTCA on their patients and practices (Exhibit 2). More than 70 percent felt that DTCA helped educate patients about available treatments; 67 percent felt that DTCA helped them have better discussions with their patients. However, four out of five doctors believed that DTCA did not provide information in a balanced manner, and a similar number felt that it encouraged patients to seek treatments they did not need. Physicians as a group were more equivocal about other impacts of DTCA, with 46 percent agreeing that it increased patients' compliance and 32 percent, that it made patients less confident in their doctors' judgment. Overall, 40 percent felt that DTCA had a positive effect on their patients and their practices, 30 percent felt that it had a negative effect, and 30 percent felt that it had no effect (not shown).

The following results are based on physicians' reports concerning the most recent visit involving a DTCA discussion. The mean age of patients reported by physicians to have initiated a DTCA discussion was 50.8, and 59 percent were female. According to physicians, most such patients (84 percent) were in good, very good, or excellent health, although 66 percent had chronic conditions expected to last longer than twelve months, and 25 percent were seeing the doctor for a serious condition (defined as being likely to have serious health consequences if left untreated). Respondents were asked to name the condition treated by the advertised drug about which the patient initiated a discussion. The ten most common conditions were impotence (10.9 percent of all DTCA visits), arthritis (10.5 percent), allergies (9.6 percent), high cholesterol (8.7 percent), heartburn (8.4 percent), depression (5.8 percent), anxiety (5.6 percent), pain (3.8 percent), diabetes (3.6

EXHIBIT 2 Attitudes Of U.S. Physicians Toward Direct-To-Consumer Drug Advertising, 2001-02

	Strongly agree (%)	Somewhat agree (%)	Somewhat disagree (%)	Strongly disagree (%)
Positive aspects				
Helps educate and inform patients about treatments available to them	10.5	63.0	18.5	8.0
Helps you to have better discussions with patients	9.3	57.7	25.5	7.4
Increases patients' compliance with doctor recommendations, tests, or prescriptions	4.1	41.6	43.8	10.5
Negative aspects				
Encourages patients to seek treatments they do not need	24.3	54.3	19.1	2.2
Does not provide information on risks and benefits in a balanced manner	37.1	44.9	16.2	1.8
Makes your patients less confident in your judgment	4.3	27.7	47.6	20.4

SOURCE: Authors' survey of physicians' experiences with direct-to-consumer advertising (DTCA) of prescription drugs, 2001-02.

percent), and menopausal symptoms (3.3 percent). Physicians reported that 25 percent of DTCA visits resulted in a new diagnosis; the ten most common were impotence (15.5 percent of new diagnoses), anxiety (9.0 percent), arthritis (6.8 percent), menopausal symptoms (6.6 percent), allergies (6.0 percent), depression (5.7 percent), hypertension (4.7 percent), pain (4.6 percent), heartburn (4.1 percent), and high cholesterol (3.4 percent). Approximately 41 percent of conditions initially discussed during the visit and 30 percent of new diagnoses were “high-priority” conditions according to AHRQ/IOM criteria.

The physician prescribed the advertised drug in 39 percent of visits involving a DTCA discussion (Exhibit 3). Other actions taken included prescribing a different drug, referral to a specialist, suggesting a lifestyle change, and recommending an OTC drug or diagnostic test. No action was taken in 18 percent of visits. For some of these actions, the likelihood of undertaking them was related to the respondents’ overall perception of DTCA. For example, respondents who viewed DTCA positively were more likely than others to prescribe a DTCA drug, suggest a lifestyle change, or recommend a diagnostic test. Respondents with neutral or negative overall views toward DTCA were more likely to take actions other than prescribing the advertised drug or to take no action at all.

EXHIBIT 3
Actions Taken By Physicians On Behalf Of Patients Having Recent Direct-To-Consumer Advertising (DTCA) Visits, By Physician Attitude Toward DTCA, 2001–02

	All (%) (N = 643)	Overall perception of DTCA effect on patients and practice (n = 638) (%)		
		Positive (n = 260)	No effect (n = 197)	Negative (n = 181)
Prescribed DTCA drug****	39.1	51.2	37.3	25.7
Prescribed other drug	22.4	21.3	21.8	23.2
Referred to specialist	5.8	4.7	6.8	6.8
Suggested lifestyle change***	39.1	46.9	33.9	34.2
Recommended OTC drug	12.2	11.8	8.9	14.7
Recommended diagnostic test**	9.3	12.6	5.2	9.4
Any action taken***	82.1	87.8	78.6	77.4
Action taken other than prescription for DTCA drug ^a ***	43.0	36.6	41.5	51.8
Action taken represented a new treatment ^b *	55.8	60.9	52.6	51.6
No action taken as a result of discussion ^c ***	17.9	12.2	21.4	22.6

SOURCE: Authors’ survey of physicians’ experiences with direct-to-consumer advertising (DTCA) of prescription drugs, 2001–02.

NOTES: Numbers in the breakdowns do not add to the total because of missing data. DTCA visits are visits with physicians when patients initiate discussions about a drug they had seen advertised. OTC is over-the-counter. Significance results indicate result of chi-square tests for differences in proportions across categories.

^aTo calculate this number, we first calculated the number of visits for which a DTCA drug was not prescribed but at least one other action was taken. Then we divided this by the total number of visits.

^bDefined as either a change in existing treatment or not receiving treatment prior to visit but received some recommendation as a result of visit.

^cOther actions may have been taken independent of the DTCA discussion.

* $p < .10$ ** $p < .05$ *** $p < .01$ **** $p < .001$

Most DTCA visits (61 percent) did not result in a prescription for the advertised drug (Exhibit 4). The most common reasons were that a different drug was more appropriate or that another equally effective but less costly drug was available. Physicians in primary care and those practicing in HMOs were about twice as likely as others to cite this reason. In about a tenth of cases the DTCA drug was not prescribed because it was not on the formulary, but much of this effect can be traced to HMO physicians, who were more than four times as likely as others to cite this reason. About one-fifth of the time the physician did not prescribe the drug because of the patient's choice, after the discussion occurred.

Referring to the 39 percent of DTCA visits that did result in a prescription for the advertised drug, 46 percent of physicians felt that it was the most effective drug for the patient, compared with 48 percent who felt that it was as effective as other drugs for the patient and they wanted to accommodate the patient's request (Exhibit 5). Notably, 5 percent thought that other drugs or treatment options (such as OTC medications, diet, or exercise) may have been more effective for that patient's condition or health problem, but they wanted to accommodate the patient's request. Surgical specialists and non-primary care medical specialists were

**EXHIBIT 4
Physicians' Reasons For Not Prescribing The Advertised (DTCA) Drug During A DTCA Visit, 2001-02**

	All DTCA visits (%) (N = 643)	Specialty (%)			Practice setting (%)		
		Primary care (n = 202)	Surgical (n = 201)	Other medical (n = 240)	Solo/ group (n = 465)	HMO (n = 29)	Other (n = 147)
Did not prescribe DTCA drug*,*	61 (n = 393)	59.8 (n = 117)	55.9 (n = 113)	67.4 (n = 163)	57.9 (n = 279)	67.7 (n = 21)	67.9 (n = 91)
Reason for not prescribing drug ^a							
Different drug was more appropriate*,**	29.3	30.1	25.0	32.0	28.7	4.8	35.6
Less costly equally effective drug was available****,*	26.1	37.9	17.2	19.0	23.9	47.6	26.9
Another course of treatment more appropriate****,NS	24.1	15.7	37.4	23.2	24.7	9.5	26.0
No treatment necessary ^{NS,NS}	15.8	14.3	13.1	19.2	17.5	4.8	14.4
Drug had side effects/interaction with other Rx ^{NS,***}	10.2	10.4	9.1	10.4	7.1	4.5	19.2
Drug was not on formulary ^{NS,****}	8.4	11.8	5.1	6.4	6.0	38.1	8.6
Patient choice, after discussion ^{NS,NS}	21.8	24.2	16.0	23.8	23.1	28.6	17.3

SOURCE: Authors' survey of physicians' experiences with direct-to-consumer advertising (DTCA) of prescription drugs, 2001-02.

NOTES: Respondents could mark more than one answer. DTCA visits are visits during which patients initiated discussions about drugs they had seen advertised. HMO is health maintenance organization. Asterisks next to the text in the left-hand column show the results of chi-square tests for differences in proportions across categories for both specialty and practice setting; the first entry applies to specialty, the second applies to practice setting. NS is not significant at the .10 level.

^a Refers to the advertised drug discussed during the DTCA visit. Figures refer to percentage of respondents in each category who chose the reason. Respondents were able to select more than one response.

*p < .10 **p < .05 ***p < .01 ****p < .001

EXHIBIT 5
Physicians' Accommodation Of Patients' Requests When Prescribing An Advertised Drug During A DTCA Visit, 2001-02

	Specialty (%)			Practice setting (%)			
	All (%) (N = 643)	Primary care (n = 202)	Surgical (n = 201)	Other medical (n = 240)	Solo/ group (n = 465)	HMO (n = 29)	Other (n = 147)
Prescribed the drug*,*	39.0 (n = 250)	40.2 (n = 85)	44.1 (n = 88)	32.6 (n = 77)	42.1 (n = 186)	32.3 (n = 8)	32.1 (n = 56)
Explanation of patient accommodation**,NS							
It is the most effective drug for this patient	46.1	53.9	42.5	37.3	47.5	20.0	45.8
It is as effective as other drugs for this patient; and wanted to accommodate patient's request	48.4	45.1	47.5	55.9	48.1	80.0	43.8
Other drugs or treatment options may be more effective, but wanted to accommodate patient's request	5.5	1.0	10.0	6.8	4.4	0.0	10.4

SOURCE: Authors' survey of physicians' experiences with direct-to-consumer advertising (DTCA) of prescription drugs, 2001-02.

NOTES: DTCA visits are visits during which patients initiated discussions about prescription drugs they had seen advertised. HMO is health maintenance organization. Asterisks next to the text in the left-hand column show the results of chi-square tests for differences in proportions across categories for both specialty and practice setting; the first entry applies to specialty, the second applies to practice setting. NS is not significant at the .10 level.

* $p < .10$ ** $p < .05$

more likely than primary care physicians to report this action.

When physicians prescribed an advertised drug, a large majority predicted that it would result in positive patient outcomes, including improved overall health, relief of symptoms, reduced severity of illness, and better compliance (Exhibit 6). Approximately one-fifth of respondents predicted that the DTCA drug would have no effect on patients' overall health, underlying severity, or compliance, but fewer predicted that it would not affect symptoms. The remainder predicted a negative effect. Respondents who thought that other non-DTCA treatment options might have been better tended to predict no effect on outcomes, but the number of cases (thirteen) was too small to result in statistical significance. Finally, for comparative purposes, similar questions were posed regarding predicted outcomes of other treatments and recommendations made during the same visit. In the 261 cases where an action was taken other than prescribing the advertised drug, the results for each predicted outcome were within a few percentage points of the results provided above, as were the results for the subset of these cases where no drug was prescribed.

Because physician reports could have been subject to recall bias, we repeated the analyses for respondents who had a DTCA discussion with a patient during the past week (53 percent of all respondents). Such physicians were somewhat more likely than other respondents to have a positive overall perception of DTCA

EXHIBIT 6
Physician-Predicted Outcomes Of DTCA Treatment Recommendations, By Patient Accommodation, 2001-02

	Patient accommodation (%) (n = 242)			
	All (N = 250)	DTCA drug was most effective (n = 106)	DTCA drug as effective as others (n = 123)	Other drugs or treatments more effective (n = 13)
Overall health				
Large positive	22.6	23.4	23.7	8.3
Somewhat positive	53.8	52.3	55.3	58.3
No effect	22.1	24.3	18.4	33.3
Somewhat negative	1.0	0.0	1.8	0.0
Large negative	0.5	0.0	0.9	0.0
Patient's symptoms				
Large positive	42.8	49.5	40.5	9.1
Somewhat positive	44.6	39.6	48.3	54.5
No effect	12.2	9.9	11.2	36.4
Somewhat negative	0.0	0.0	0.0	0.0
Large negative	0.3	0.9	0.0	0.0
Severity of underlying condition				
Large positive	26.7	34.3	23.0	0.0
Somewhat positive	50.1	42.6	56.6	58.3
No effect	22.6	22.2	20.4	41.7
Somewhat negative	0.6	0.9	0.0	0.0
Large negative	0.0	0.0	0.0	0.0
Patient's compliance				
Large positive	32.5	29.4	35.1	33.3
Somewhat positive	42.0	44.0	41.2	41.7
No effect	22.0	20.2	22.8	25.0
Somewhat negative	3.4	6.4	0.9	0.0
Large negative	0.0	0.0	0.0	0.0

SOURCE: Authors' survey of physicians' experiences with direct-to-consumer advertising (DTCA) of prescription drugs, 2001-02.

NOTES: Numbers in the breakdowns do not add to the total because of missing data. Chi-square tests on the outcome distributions across patient accommodation groups yielded significant differences (at the .10 level) in the "patient's symptoms" and "severity of underlying condition" categories; differences in the "overall health" and "patient's compliance" categories were not significant at the .10 level.

(48.2 percent versus 39.9 percent) and to have prescribed the DTCA drug (44.7 percent versus 39.1 percent). Virtually all other figures were within a few percentage points of the results for the full sample.

Discussion

■ **Use of advertised drugs.** Contrary to the perception that many DTCA discussions are for minor ailments, we found that a large proportion of DTCA visits were for high-priority conditions. Our results are notable, however, in that male impotence was reported with far greater frequency by physicians than by patients in prior work.²³ We suspect that social desirability bias was a factor in patient report-

ing. On the other hand, the frequency with which the advertised drug was prescribed as a result of a DTCA discussion was almost identical in the two studies—43 percent of patients reported receiving the advertised drug in the consumer survey and 39 percent of physicians reported prescribing one in this study. This figure also is higher than unpublished data from the FDA, in which 26 percent of physicians having a DTCA interaction with a patient reported that they prescribed the brand-name drug.²⁴

■ **Effect on health care actions.** Our survey provides further evidence that DTCA visits are associated with health care actions taken that transcend merely prescribing the advertised drug, including prescribing other drugs or making lifestyle recommendations. Many of these represented new treatments. Regarding outcomes, it is reassuring that physicians generally predicted positive impacts on health and symptoms from prescribing a DTCA drug. Despite these positive findings, about 20 percent of physicians thought that the DTCA drug would have no effect on their patient's overall health, even when the drug was reported to be the most effective drug for the patient. Only 12 percent predicted no effect on symptoms, perhaps because many heavily advertised drugs are targeted at symptom relief. While such results are intriguing, future research on DTCA should take health outcomes into account to assess cost-effectiveness and should determine whether the visits or the ensuing actions we found might have taken place in the absence of DTCA.

■ **Role of cost.** Several consumer surveys have reported that large numbers of patients ask for and receive the drugs they see advertised.²⁵ Our research demonstrated that when the physician did not prescribe the advertised drug, most of the stated reasons fell into a range of clinical, cost, and coverage considerations. Our findings also addressed the concern that doctors may feel pressured to accommodate their patients' wishes. In nearly half of the visits where physicians prescribed a DTCA drug, they felt that it was the most effective drug for the patient. In most of the remaining cases, physicians thought that although other drugs were equally effective, they wanted to accommodate the patient's request.

One important question for policymakers is whether such choices have cost implications, since some reports attribute rising health care costs to greater spending on advertised drugs.²⁶ We did not ask physicians whether the specific alternative drug was more or less costly than the advertised drug, primarily because physicians are not always aware of the costs of drugs.²⁷ The economic research on the comparative cost of DTCA drugs is inconclusive. Critics of DTCA note cost differences between some of the more popular DTCA drugs such as Nexium and their generic substitutes, yet most research on the impact of DTCA on drug costs focuses on price elasticities or sales volumes among brand-name drugs.²⁸

One of the barriers to economic research is the complexity of estimating an actual cost, given different insurance coverage, copayments, and discounts and rebates available to health plans or pharmacies.²⁹ We are not aware of any broad-based studies that analyze the relative cost of substituting an advertised drug for

another in its therapeutic class, although the GAO notes that “newly marketed drugs are generally more expensive than older drugs in the same class.”³⁰ If this is so, then prescribing newly marketed DTCA drugs instead of less costly but equally effective alternatives would represent an inefficient use of resources, especially if insurance plans do not give patients incentives to choose lower-cost drugs.³¹ Although cost was a factor in the decision not to prescribe a DTCA drug in our survey, future research should determine whether physicians are pressured into prescribing DTCA drugs that are more costly than equally effective drugs in the same class and whether overall health care costs increase as a result.

■ **Appropriateness of care.** The 5 percent of DTCA visits where a DTCA drug was prescribed even though other treatment options might have been more effective are cause for concern if they represent inappropriate or ineffective care. A majority of cases falling into this category were reported by surgeons and may represent patients’ preferences for noninvasive care. Fortunately, such cases represent a small percentage of physician encounters. Considering that about 3.1 percent of reported visits involved a DTCA discussion, and 39 percent of these resulted in the prescription of the advertised drug, we estimate that about 0.06 percent ($0.031 \times 0.39 \times 0.05$) of all ambulatory visits have this result. Because there are about one billion U.S. ambulatory visits annually, this would translate into approximately 624,000 prescriptions of DTCA drugs that might have been avoided.³² If the goal is to limit the number of DTCA prescriptions made when other drugs are available, one might look to HMOs, whose physicians were less likely than others to prescribe a DTCA drug when requested, often because of formulary restrictions. Such an approach might be less workable in other types of private health plans, although tiered benefit structures could achieve the same effect.

■ **Physicians’ attitudes.** Our study adds to the literature on physicians’ attitudes toward DTCA. Our finding that more physicians have overall positive views than negative views toward DTCA contrasts with previous reports from a large online survey, where only 15 percent of physicians held positive views and 52 percent held negative views.³³ The difference in our findings suggests a possible bias from nonrandomized convenience samples obtained online. Another possibility is that physicians’ attitudes are changing. Although providers might have felt threatened when DTCA spending grew rapidly during the late 1990s, perhaps by now they are learning to deal with increasingly active patients who are obtaining health information from a variety of sources, and perhaps developing ways to turn these discussions into positive interactions. Such a trend would be consistent with urgings by the IOM to offer patients the opportunity to act more like partners in their care.³⁴

Data on overall attitudes can mask important information. Physicians in our study were ambivalent about DTCA’s educational value. They believed that it familiarizes patients with treatment options but were clearly wary of its information content and its influence on patients’ behavior—specifically, encouraging patients to seek treatments they do not need. These feelings are consistent with the

results of our focus groups, where physicians complained that DTCA caused them to waste time explaining to patients why they did not need a particular brand-name drug. One participant professed that today's patients "are more informed, but not better informed."

■ **Study limitations.** This study had certain limitations that might affect its interpretation or generalizability. We did not ask physicians to report on visits without a DTCA discussion. As a result, it is not possible to attribute causality to some of the non-DTCA actions that were taken. Certainly a better alternative, although less practical, would be to conduct a large randomized controlled trial where some patients are exposed to DTCA and others are not and then to examine physicians' prescribing habits. Our survey obtained a lower-than-ideal response rate (53 percent), although this figure is common among physician surveys unless large incentives (\$100 or more) are offered. The characteristics of our respondents, however, were quite close to those of the general physician population. Nevertheless, one might expect stronger views to be represented among those participating. We also did not inspect medical records, which might have offered more clinical insight into medical appropriateness. In addition, we relied on physicians' recall and self-reports.

Despite these limitations, we believe that our data are valid, for two reasons. First, recall problems might have been mitigated by the fact that 53 percent of physicians said that they had had a DTCA visit in the past week, and our results were virtually identical to those for the full sample. Second, the percentage of visits in which our subjects reported that a DTCA discussion took place (3.1 percent) was nearly identical to previously published figures based on a chart-review study of seventy-eight physicians in Sacramento and Vancouver in 2000–2001.³⁵ In that study, patients requested prescriptions in 12 percent of surveyed visits, and of these requests, 42 percent were for products advertised to consumers (that is, about 4 percent of all visits). Finally, we would have preferred to measure actual outcomes, but we recognized a methodological trade-off between asking physicians to report on recent experience (as we did) and expecting them to recall outcomes of patients they saw in the distant past. It should not be surprising that physicians mostly thought that their treatment decisions would result in positive outcomes, but it was illuminating that some physicians did not expect the DTCA drug to have an effect on patients' health or even their symptoms.

Drug advertising remains highly contentious. It is clearly an effective practice from the industry's perspective, given that DTCA has been shown to lead to sizable increases in use within therapeutic classes.³⁶ When evidence exists on appropriateness, drug advertising may produce a social good by reducing underuse.³⁷ On the other hand, in different circumstances drug advertising may encourage overuse of higher-cost drugs among patients who have little to gain. Our research provides further insight into the health and health care effects of DTCA, suggesting possible benefits, although it is by no means conclusive. Our research did not address directly the financial impacts of prescribing decisions. A better under-

standing of the costs of similar drugs, their effect on health and health care, and physicians' behavior in response to requests for advertised treatments from their patients would help shape policy in the future.

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