Clinicians’ Responses to Direct-to-Consumer Advertising of Prescription Medications

Woodie M. Zachry III, PhD; James E. Dalen, MD; Terrence R. Jackson, PharmD, MS

Background: The direct-to-consumer advertising (DTCA) of prescription medications is proliferating in the United States. The relationship between patient exposure to DTCA and the response of clinicians is not well understood.

Methods: A randomized postal survey of Arizona primary care provider physicians (n=1080) and physician assistants (n=704) was conducted. A questionnaire was created using a hypothetical patient scenario that varied according to the diagnosis of the patient (ie, hypertension, hypercholesterolemia, seasonal allergies, or obesity) and the type of informational exposure generating the patient’s questions (ie, DTCA vs drug references such as Physicians’ Desk Reference). Clinicians were randomly assigned 1 of 8 forms of the scenario and were asked standardized questions related to their responses when faced with the patient scenario.

Results: The response rate was 44% (40.5% of physicians and 49.3% of physician assistants). No statistically significant differences were found between the early and late responders or between responders and nonresponders. Relative to clinicians who received the “drug reference book” patient scenario, clinicians who received the DTCA patient scenario were more likely to become annoyed with a patient for asking for more information about medications (P=.003); less likely to answer the patient’s questions (P=.03) or provide additional written information (P=.007); more likely to become frustrated (P=.003) and annoyed (P<.001) with the patient for asking to try a specific medication; and less likely to provide samples (P=.001) or a prescription (P<.001) for a specific medication.

Conclusion: Clinicians are amenable to patients asking for drug information and medications, but they are less receptive to questions arising from DTCA.

Arch Intern Med. 2003;163:1808-1812

S

epending on direct-to-consumer advertising (DTCA) for prescription drugs in the United States has increased dramatically over the last decade. It was estimated that $2.47 billion was spent in 2000 by pharmaceutical companies advertising directly to patients.\(^1\,\,^2\) This compares with estimated spending of $1.07, $1.32, and $1.85 billion in 1997, 1998, and 1999, respectively.\(^1\,\,^2\) The ubiquity of DTCA has occurred much to the dismay of many in the medical community. A 1997 survey of physicians by Intercontinental Marketing Services found that 39% believed that DTCA caused consumers to come to the wrong conclusions about medications, and 35% were in favor of eliminating DTCA completely.\(^3\) The authors noted that higher misconception rates seemed to be tied to strong visual signals within the ad, misunderstandings about the treatment of the disease, and commonly held beliefs about the type of medicine in the ad.\(^4\) The potential for DTCA to influence patient perceptions concerning pharmaceuticals has been well established in the literature. From 1984 to 1986, Morris and colleagues\(^5\,\,^6\) produced the earliest and strongest evidence of DTCA’s influence on patients. Results from these studies demonstrated that the amount, type, and presentation of information in a drug ad could influence a viewer’s perceptions of the drug and/or disease advertised. They also showed that up to 6% of those viewing drug ads drew incorrect conclusions about the product that were not explicitly stated in the ad and that up to 14% indicated a mistaken impression as the main point of the ad.\(^4\,\,^5\) The authors noted that higher misconception rates seemed to be tied to strong visual signals within the ad, misunderstandings about the treatment of the disease, and commonly held beliefs about the type of medicine in the ad.\(^3\) Overall, benefits were recalled at a higher rate than the risks presented in the ads.\(^4\) The au-

From the Colleges of Pharmacy (Dr Zachry) and Medicine (Dr Dalen), University of Arizona, Tucson; the College of Pharmacy, University of Illinois at Chicago, Chicago (Dr Jackson). The authors have no relevant financial interest in this article.
thors also noted that the amount of risk information communicated by the ad influenced the perceived seriousness and limitations of the disease.6

Once patients have formed impressions based on an ad, the possibility exists for these impressions to influence behavior. This includes the possibility that a patient will seek information, a specific medication, and even different care if his or her requests are denied. A survey by Prevention Magazine7 revealed that 32% of those viewing a DTCA talked with their physician about an advertised medicine, and 26% of those talking with their physicians actually asked for the medication. A study by Bell and colleagues8 found that 15% of respondents were somewhat to very likely to switch physicians based on the original physician’s negative response to a prescription drug request, and 24% were somewhat to very likely to visit other physicians to get the prescription they were originally denied.8

The ability of patient expectations to influence the prescribing process has received considerable attention in the literature. Research has shown that the likelihood that a practitioner would provide a prescription was significantly associated with the patient’s expectations of receiving a prescription.9,10 Cockburn and Pit11 found that patients who expected to receive a prescription on seeing a physician were 3 times more likely to receive one than those who did not. Studies have also reported that physicians admit that patient demand influences their prescribing behavior, and that they were 10 times more likely to write a prescription when they believed that the patient expected one.11,12 However, this literature has not addressed the source of patient inquiries and expectations and its relationship to clinician behaviors. Specifically, the likelihood of clinician behavior to change when faced with patients exposed to a drug ad has not been explored. Therefore, the purpose of this study was to examine the responses (behavioral intentions and emotional reactions) of clinicians when faced with patients who sought information and medications in response to a DTCA.

**METHODS**

This study was a mail survey of physicians and physician assistants. All primary care physicians (family practice, internal medicine, and general practice) and physician assistants licensed and practicing in Arizona, as defined by the Arizona Board of Medical Examiners, were included in the sample frame. A total of 2953 physicians and 706 physician assistants met these criteria. A random sample of 1080 licensed physicians and 704 licensed physician assistants in Arizona were mailed a questionnaire. The subjects were provided with a case scenario in which a patient, recently diagnosed with a moderate form of a certain disease, mentioned a medication they had questions about. Eight versions of the case scenario were created differing on the disease/treatment pairs mentioned and whether the medication came to the attention of the patient through a drug reference work (eg, Physicians’ Desk Reference) or a prescription drug ad (ie, DTCA). The scenarios were based on the following 4 disease/treatment pairs: (1) hypertension/angiotensin-converting enzyme (ACE) inhibitor, (2) hypercholesterolemia/hydroxymethyl glutaryl coenzyme A (HMG-CoA) reductase inhibitor (statin), (3) seasonal allergies/antihistamine, and (4) obesity/weight-loss aid. The case scenarios followed the following standard format with the words in parentheses indicating a source of variance among forms:

Imagine you are examining one of your patients diagnosed with moderate (hypertension, hypercholesterolemia, seasonal allergies, obesity) whose overall health is good. After examining the patient, the patient mentions a prescription (ACE inhibitor, HMG-CoA inhibitor, antihistamine, weight-loss aid) he/she viewed in a drug advertisement, read about in a drug reference. Please answer the following questions based on the information provided. Since no specific agents are named and no further information about the patient is given, answer the questions based upon your general beliefs associated with the treatments for (hypertension, hypercholesterolemia, seasonal allergies, obesity).

Clinicians were then asked to report on a 6-point scale the likelihood (6, very likely; 5, likely; 4, somewhat likely; 3, somewhat unlikely; 2, unlikely; 1, very unlikely) of 14 different behaviors and/or reactions related to the patient’s requests for information and the medication: (1) frustration with the patient for asking for more information; (2) annoyance with the patient for asking for more information; (3) answering the patient’s questions; (4) providing more information beyond the initial inquiry; (5) providing additional written information; (6) changing the subject rather than discussing the medication; (7) explaining that the drug information is probably beyond the patient’s comprehension; (8) frustration with the patient for asking for a specific medication; (9) annoyance with the patient for asking for a specific medication; (10) discomfort with a request for a specific medication; (11) communicating discomfort with a specific medication request to the patient; (12) prescribing a medication other than what the patient asked for to discourage the patient from asking for specific medications in the future; (13) providing samples of the medication; and (14) providing a prescription for the specific medication. Each response was considered to be on an interval scale, having a midpoint of 3.5. In the final section of the questionnaire, respondents were asked questions about their demographic characteristics (ie, age, sex, race and/or ethnicity) and practice setting (ie, number of patients seen on an average day).

Eight versions of the questionnaire were randomly distributed to the sample population. The 8 versions varied only with regard to the disease and the patient’s source of information communicated in the case study. Clinicians were randomly sent 1 version of the questionnaire and were blinded to other forms of the instrument. The total design method developed by Dillman13 was used to conduct the survey. A postcard notification was sent out 1 week prior to the initial questionnaire mailing. A reminder letter was mailed 1 week after the first instrument mailing. A follow-up mailing of the questionnaire took place 3 weeks from when the initial instrument was mailed. The survey was conducted under the auspices of the University of Arizona Human Subjects Protection Program. Information about the subject’s voluntary participation was provided in a cover letter sent with the survey. An entry into a raffle for 1 of 3 copies of a medical reference was offered as an incentive to enhance the response rate.

Analyses were conducted to assess if any differences existed among responders and nonresponders based on practice site (metropolitan vs nonmetropolitan). Metropolitan practice sites were defined as being in cities with 50000 or more residents, according to projected census figures.14 Nonmetropolitan cities were defined as having fewer than 50000 residents.14 Further analyses were conducted to research the probability differences in early (first 3 weeks) and late responders based on practice site, age, sex, and ethnicity of the respondent. χ² Analyses were used for data not meeting parametric as-


1809

Downloaded from www.archinternmed.com at University of North Dakota, on August 13, 2008 ©2003 American Medical Association. All rights reserved.
General linear models were used to examine relationships between the dependent variables (responses for each of the 14 items) and 1 independent variable (DTCA exposure) while controlling for the remaining 2 independent variables (professional title and disease/treatment pair advertised) and covariates (patients seen on an average day and respondent age). Post hoc pairwise comparisons were also performed. An a priori α level of .05 was used for all analyses.

**RESULTS**

For the physician and physician assistant subgroups, 423 and 340 usable surveys were returned, respectively. The overall response rate for useable surveys was 44% (40.5% physicians and 49.3% physician assistants). Respondents were predominantly male (63%) and white (white, 80.6%; Asian, 6.6%; Hispanic, 5.6%; African American, 1.7%; Native American, 1.4%; and other, 2.6%). Most respondents (17.8%) were aged 45 to 49 years; 15.1%, 40 to 44 years; 14.7%, 50 to 54 years; and 14.1%, 35 to 39 years.

There were demographic differences between physicians and physician assistants based on age (χ² = 59.908; P < .001) and sex (χ² = 44.127; P < .001) categories. A greater percentage of physicians (73.8%) than physician assistants (50.4%) were male. Physician respondents were also older. A greater percentage of physicians (29.1%) than physician assistants (10.6%) were 50 years or older, while a higher percentage of physician assistants (43.4%) than physicians (21.5%) were aged between 19 and 34 years. However, the highest percentage of both groups (physicians, 49.4%; physician assistants, 46.0%) was aged 35 to 49 years.

No overall statistically significant differences were found between the early responders (those responding in the first 3 weeks after initial mailing of the instrument) and late responders (those responding after the second mailing of the instrument) based on age (P = .96), sex (P = .77), ethnicity (P = .11), or the metropolitan designation of their practice setting (P = .40). Similarly, no statistically significant differences were found between responders and nonresponders based on the metropolitan designations of their practice setting (P = .21). Variables representing DTCA exposure (P < .001), professional title (P < .001), the disease mentioned in the case study (P < .001), and age (P = .04) all achieved significance at the multivariate level (Wilk λ). Finally, no interactions between the independent variables were found to be statistically significant.

**OVERALL DESCRIPTIVE FINDINGS**

When clinicians were asked to indicate their responses to the patient scenario, most reported that they were somewhat likely to very likely to answer a patient’s questions about a medication (96.6%) and provide information beyond the original inquiry (86.2%). Nearly all clinicians reported that they were somewhat unlikely to very unlikely to attempt to change the subject rather than discuss a medication (97.4%) or explain that drug information is beyond the patient’s comprehension (96.8%). Also, most clinicians indicated that they were somewhat unlikely to very unlikely to become frustrated (93%) or annoyed (92.9%) with requests for drug information.

Similar results (ie, somewhat unlikely to very unlikely) were obtained when respondents were asked about a patient inquiry for a medication (frustrated, 90.6%; annoyed, 92.1%). Furthermore, most clinicians reported that they were somewhat unlikely to very unlikely to be uncomfortable with a patient request for a medication (74.4%) or to communicate being uncomfortable with a medication request (64.2%). Also, most clinicians (92.5%) reported that they were somewhat unlikely to very unlikely to prescribe a medication other than what was asked for to prevent patients from asking for medications in the future. Finally, clinicians appeared receptive to providing samples (77.5% somewhat likely to very likely) or a prescription (75.5% somewhat likely to very likely) when requested by the patient.

**SOURCE OF DRUG INFORMATION**

The table summarizes the analyses examining the differences related to the type of informational exposure of the patient, controlling for the type of clinician, clinician age, average number of patients seen daily, and the disease/drg pair mentioned in the survey case study. The type of information exposure reported by the patient was related to the likelihood of clinicians providing information to the patient. Clinicians reported that they were more likely to become annoyed with a patient for asking for more information about a medication they saw in an ad (P = .003) than one they saw in a drug reference. Clinicians also reported that, relative to a drug reference, they were less likely to answer the patient’s questions about an advertised medication (P = .03) and were less likely to provide additional written information about an advertised medication (P = .007). Furthermore, clinicians reported that they were more likely to attempt to change the subject rather than discuss a medication a patient saw in an ad vs a medication read about in a drug reference (P = .02).

Similar significant associations were found between the type of patient informational exposure and the likelihood of the clinician’s response to a patient’s request to try a particular medication. Clinicians reported that they were more likely to become frustrated (P = .003) and annoyed (P < .001) with the patient for asking to try a medication that they had seen in an ad as opposed to one they had read about in a drug reference. For patients reporting DTCA exposure, clinicians were more likely to prescribe a medication other than the one for which the patient asked than for patients reporting a drug reference exposure (P = .002). Moreover, clinicians reported that they were less likely to provide samples (P = .001) or a prescription (P < .001) for the medication a patient saw in drug ad when compared with patients using a drug reference.

**COMMENT**

This study examined the possible responses of clinicians when faced with inquisitive patients. The results suggest that clinicians respond favorably to patient in-
Several studies and editorials have expressed clinicians' concerns about the quality and content of information portrayed in DTCA.1,16,21 Health care professionals are generally concerned with the potential of these ads to convince patients that they need a medication that they actually do not. A content analysis performed by Bell and colleagues22 reported that a substantial proportion (40%) of ads made claims of innovativeness without communicating the benefits and risks compared with traditional therapies. These messages may increase patient expectations for drug treatment, placing pressure on the clinician to meet those expectations. In the present study, clinicians did not seem to have a problem with patients approaching them with questions or even asking for specific medications. While clinicians seemed less receptive to the idea of patients asking questions about a prescription drug ad, the presence of that exposure was not associated with clinicians being wholly unlikely to address patient questions. This suggests that physicians are somewhat receptive to DTCA as a source of patient awareness of drug therapies. However, they are more accepting of the awareness generated by a drug reference. It is unclear from the results of the present study what this relative acceptance of DTCA may communicate. Although the literature suggests that clinicians may have reservations about the content and quality of DTCA messages, physicians may feel resigned to the presence of DTCA in some form. As stated by Dr Joseph Cranston, of the American Medical Association drug policy department, “With the thrust on patient empowerment and the customers’ zeal for as much information as possible . . . DTCA are here to stay.”23

Based on these findings, it is useful to reflect on clinician education with respect to the care of the patient. Traditionally, medicine has been practiced under 1 of 3 models of care: (1) activity passivity, where the patient unquestioningly follows the direction of the physician; (2) guidance cooperation, where the patient is capable of interpersonal communication yet defers to the clinician's expertise; and (3) mutual participation, where the patient depends on practitioner expertise while the practice

### Estimated Marginal Means

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>DTCA (x)</th>
<th>Drug Reference (z)</th>
<th>Difference (x−z)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Become frustrated with patient for asking for more information</td>
<td>2.132</td>
<td>1.921</td>
<td>0.211</td>
<td>.003†</td>
</tr>
<tr>
<td>Become annoyed with patient for asking for more information</td>
<td>2.104</td>
<td>1.845</td>
<td>0.259</td>
<td>&lt;.001†</td>
</tr>
<tr>
<td>Answer patient’s questions about the medication</td>
<td>2.707</td>
<td>2.544</td>
<td>0.163</td>
<td>.08</td>
</tr>
<tr>
<td>Provide more information to patient beyond original inquiry</td>
<td>2.964</td>
<td>2.943</td>
<td>0.021</td>
<td>.85</td>
</tr>
<tr>
<td>Provide additional written information to patient</td>
<td>2.072</td>
<td>1.844</td>
<td>0.228</td>
<td>.002†</td>
</tr>
<tr>
<td>Attempt to change subject rather than discuss the medication</td>
<td>4.135</td>
<td>4.476</td>
<td>−0.341</td>
<td>.001†</td>
</tr>
<tr>
<td>Attempt to prescribe different medication to keep from promoting patient to ask for medications in the future</td>
<td>3.865</td>
<td>4.229</td>
<td>−0.364</td>
<td>&lt;.001†</td>
</tr>
</tbody>
</table>

Abbreviation: DTCA, direct-to-consumer advertising.

*Rated from 1 (very unlikely) to 6 (very likely) and controlling for age, average number of patients seen daily, disease, and respondent title (physician or physician assistant).

†Statistically significant at P < .05.
titioner depends on the patient’s knowledge of living with the condition. Therefore, these models of care center around the treatment of disease and its manifestations. However, with the rise of consumerism, patients have arguably become less deferential. Many clinicians fear that care may shift to more of a commodity-driven model, where patients are buyers of services, and physicians are sellers obligated to provide consumer-perceived value. At its worst, the incentives for evidence-based care would be supplanted by the need to satisfy the consumer.

To discourage the development of this consumerism model, clinicians must begin to practice a patient-focused care. Clinician training must be refocused to enable them to address patient needs, values, feelings, and expectations associated with their conditions and treatments without sacrificing evidence-based care. Clinicians should be trained to become better communicators so that they may focus care on the treatment of the whole patient rather than simply the disease. Thus, media cues such as drug references or ads may be used as an opportunity to engage patients, promote positive health behaviors, and encourage patients to invest in better outcomes. In this manner, physicians become managers of patient expectations rather than being managed by them.

The findings of this study must be considered in the context of the population that was surveyed. The relatively high response rate and the lack of significant differences between early, late, and nonresponders provide confidence that the sample was representative of the target population. However, the characteristics of the target population may differ significantly from providers in other parts of the United States. Arizona is predominantly served by managed care organizations. Therefore, the results of this survey may not extend to a population of clinicians operating under different market constraints. Also, it is important to emphasize that these findings represent behavioral intentions rather than actual activities. Several factors can prevent a behavioral intention from being carried out. These intentions, however, are important in communicating the potential actions of clinicians. Furthermore, they provide us with evidence of the relative importance of factors related to the actual practice of prescribing professionals.

In conclusion, the results of these analyses suggest that clinicians are receptive to patient participation in the prescribing process, although the relative likelihood that they will behave in certain manners (exhibit frustration and/or annoyance, provide information, prescribe medications) is related to the informational exposure of their patients. The results suggest that, while clinicians are amenable to patients asking questions about a DTCA, they are more receptive if those questions arise from exposure to a drug reference. Past research suggests that this difference may be due to clinician concerns over the quality and content of the DTCA message. Hopefully, these results will encourage further research aimed at understanding how to improve DTCA and/or clinician perceptions of DTCA relative to nonpromotional sources of information.

Accepted for publication September 23, 2002.

This study/initiative was supported by an unrestricted educational grant from The Merck Company Foundation, the philanthropic arm of Merck & Co Inc, Whitehouse Station, NJ.

Corresponding author and reprints: Woodie M. Zachry III, PhD, College of Pharmacy, PO Box 210207, University of Arizona, Tucson, AZ 85721-0207 (e-mail: Zachry@pharmacy.arizona.edu).

REFERENCES

10. Britten N, Ukoumunne O. The influence of patients’ hopes of receiving a prescription on doctors’ perceptions and the decision to prescribe: a questionnaire survey. BMJ. 1997;315:1506-1510.