

# A Content Analysis of Direct-to-Consumer Television Prescription Drug Advertisements

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*This article reports the results of a content analysis of 23 direct-to-consumer (DTC) product-specific television prescription drug advertisements broadcast during 2001. A majority of ads used both medical and lay terms to convey medical ideas. Most gave consumers somewhat more time to absorb facts about benefits than those about risks, which could have implications for the "fair balance" requirement. Complete references to additional product information were given only in text, casting doubt on whether these ads are making "adequate provision" for dissemination of detailed product information. Overall, our results call into question the potential of these ads to educate consumers.*

The volume of prescription drug advertising directed to consumers rather than physicians has grown tremendously over the past decade. Expenditures for DTC advertising

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increased from an estimated \$47 million in 1990 to nearly \$2.5 billion in 2000 (Frank, Berndt, Donohue, Epstein, & Rosenthal, 2002; Miller, 1994; Rosenthal, Berndt, Donohue, Frank, & Epstein, 2002; Schommer, Doucette, & Mehta, 1998). The most rapid growth has been in television advertising, which grew from 13% of DTC advertising expenditures in 1994 to 60% in 2000 (Frank et al., 2002).

According to U.S. Food and Drug Administration (FDA) regulations, prescription drug advertisements cannot be false or misleading and must have “fair balance” in the presentation of risks and benefits (Baylor-Henry & Drezin, 1998; Nordenberg, 1998). In addition, broadcast DTC advertisements that mention both the name and use of an advertised drug (“product-specific advertisements”) must include a “major statement” of chief adverse effects and contraindications (Baylor-Henry & Drezin, 1998; Talley, 1997). These ads must also include the following: (1) the “brief summary,” a section that contains detailed information about adverse effects, contraindications, and effectiveness; or (2) “adequate provision” for dissemination of complete product information about the drug (Bradley & Zito, 1997; Kessler & Pines, 1990; Nordenberg, 1998).

The FDA clarified the “adequate provision” requirement in a guidance issued in draft form in 1997 and finalized in 1999. The guidance suggested that DTC broadcast advertisements could meet the requirement by referring consumers to physicians and pharmacists and to more detailed product information available through a website, toll-free telephone number, and concurrently running DTC print advertisement (Talley, 1997; U.S. FDA, 1997, 1999). The 1999 guidance also stated that broadcast advertisements should present information relevant to indications and the major statement of important risks in “consumer-friendly language” (U.S. FDA, 1999).

Direct-to-Consumer advertising has been the subject of intense debate in both the medical literature and the popular press, stemming in part from the tremendous growth in television advertising allowed by the 1997 FDA draft guidance. Proponents have argued that DTC advertising can increase treatment of underdiagnosed conditions, inform consumers about new treatments, enhance treatment compliance, and help consumers make better informed health care decisions (Bradley & Zito, 1997; Holmer, 1999; Masson & Rubin, 1985; Terzian, 1999; Whyte, 1993). Opponents have contended, however, that DTC advertising might confuse patients who lack specialized medical knowledge, interfere with the physician–patient relationship, lead to inappropriate prescribing, boost health care costs, and increase consumption of new, expensive brand-name products over older, cheaper, and safer alternatives (Bradley & Zito, 1997; Cohen, 1988; Committee on Drugs, 1991; Hoffman & Wilkes, 1999; Lexchin, 1997; 't Hoen, 1998; Terzian, 1999; Wilkes, Bell, & Kravitz, 2000).

Recent studies have addressed the impact of DTC advertising on consumers and the physician–patient relationship. Ninety-two percent of physicians in a 2002 FDA survey reported having had a discussion about an advertised drug initiated by a patient (Aikin, 2003). In a FDA consumer survey conducted in the same year, 81% of respondents recalled having seen or heard a prescription drug advertisement in the preceding 3 months (Aikin, 2002). Across studies, about one-third of consumers who remember seeing a DTC advertisement ask their physicians about a specific prescription (U.S. General Accounting Office, 2002). Weissman and colleagues (2003) found that among patients who had a physician visit during which DTC advertising was discussed 25% received a new diagnosis, of which 43% were designated as high priority; the conclusions of this study have been questioned by other researchers (Avorn, 2003; Bodenheimer, 2003).

Other research has examined the content of DTC print advertisements. Roth (1996) examined dimensions such as target patient base, indication, and balance between

benefit and risk information. *Consumer Reports* (1996) evaluated the potential educational benefit and quality of 28 DTC print ads, assessing features such as use of medical jargon, placement of key information, print size, and comprehensiveness. Other content analyses of DTC print advertisements have been reported by Bell and colleagues (2000a, 2000b), Pinto (2000), and Woloshin and colleagues (2001). *Consumer Reports* (2003) also has conducted an analysis of FDA regulatory letters citing false or misleading drug promotions. The focus of content analyses to date has not been DTC television advertisements.

In addition, no prior research has examined aspects of DTC ads that could affect comprehension by individuals with limited literacy. The 1992 National Adult Literacy Survey (NALS) assessed functional literacy among U.S. adults with a set of tasks that reflected the types of literacy skills that adults use on a daily basis (Kirsch, Jungeblut, Jenkins, & Kolstad, 1993). The results indicated that about 21% of U.S. adults have low levels of functional literacy skills, while an additional 25% have marginal skill levels (Kirsch et al., 1993). Individuals with limited literacy skills might have smaller health-related vocabularies (Cunningham & Stanovich, 1998), have more difficulty reading text, and attend less to textual information, since adults with lower literacy are less likely to use print media as an information source than adults with higher literacy (Kirsch et al., 1993). Level of literacy skill therefore could affect comprehension of DTC advertising in a number of ways, and literacy levels among U.S. adults might have implications for the fair balance and adequate provision requirements.

The primary objective of the exploratory study presented here was to conduct a descriptive content analysis of a sample of product-specific DTC television advertisements. We gave particular attention to those features of the ads that might interfere with consumers' comprehension of critical information, keeping in mind what is known about the functional literacy skill levels of U.S. adults.

## Methods

### *Sample*

We focused on product-specific advertisements appearing on the three major television networks (ABC, CBS, and NBC). Network stations are available to everyone with a television who lives within receiving range of a broadcast signal. The networks target a broad audience, while each cable channel usually targets a narrower demographic group. Advertisements broadcast on the major networks therefore can reach the largest cross section of the public.

Our first step in assembling the study sample was to capture as many DTC advertisements as possible. Toward this end, we videotaped a 6-hour block of programming from one of the three major television network stations in Boston, Massachusetts, each day from February 1, 2001, to March 31, 2001. During the first 2 weeks of this period, we videotaped 6-hour blocks throughout the day. Examining this material, we determined that the broadcast hours between 10 AM and 4 PM were most likely to contain DTC advertisements. Thereafter, we videotaped this 6-hour block of time more frequently, but we continued to videotape other 6-hour time blocks as well so that any DTC advertisements broadcast only during other times of the day also might be captured.

In the resulting 354 hours of programming, we identified 62 unique product-specific DTC advertisements for 33 prescription drugs for 22 indications. Advertisements were counted as product-specific DTC advertisements if they (1) advertised a prescription drug; (2) stated the name of the drug; and (3) gave at least one indication for the drug. We

counted product-specific DTC ads as unique if any content varied from another ad. We found only one advertised drug for each of 18 indications, two drugs each for asthma and osteoarthritis, three drugs for high cholesterol, and eight drugs for allergies. To select the final sample of ads, we used the following procedure. First, if there was more than one advertised drug for an indication, we randomly selected one of the drugs. Second, if there was more than one product-specific ad for a particular drug, we randomly selected one ad for analysis. There was one exception: for allergies, we included randomly selected ads for two prescription drugs in the sample, one for a nasal spray and one for a pill. Appendix A lists the prescription drugs and indications represented in the study sample of 23 ads.

### ***Coding Dimensions***

We used theory-derived coding dimensions that were directly relevant to FDA policy to code the advertisements in this study. We grouped the coding dimensions into three categories: (1) those related to the presentation of risk and benefit information in the ads; (2) those related to adequate provision for dissemination of detailed product information; and (3) those describing the educational content of the ads.

We analyzed DTC television advertisements as communications designed to persuade consumers to seek further information about a prescription drug or to request a drug from their physicians. Our theoretical framework was McGuire's communication/persuasion matrix (McGuire, 1989), a model of the persuasion process that identifies characteristics of persuasive communications and the target audience that might influence sequential changes in knowledge, attitude, and behavior in audience members (Flay, DiTecco, & Schlegel, 1980). The output side of the matrix has 12 successive information-processing steps that should occur in consumers; comprehension is the fourth step. The input side of the matrix contains five broad categories of factors from which communications are constructed: (1) source factors, which are characteristics of the perceived communicator (e.g., credibility, trustworthiness); (2) message factors (e.g., type of appeal, delivery style); (3) channel factors (e.g., verbal versus nonverbal channels); (4) receiver factors, which are target audience characteristics (e.g., age, education, personality variables); and (5) destination factors, which are the types of behaviors targeted by the communication (e.g., immediate versus long-term change; McGuire, 1984, 1985, 1989). According to the model, each input factor potentially can affect comprehension of a persuasive communication.

We first outlined the coding dimensions based on input factors in McGuire's communication/persuasion matrix (McGuire, 1989). Source factors of interest related to who provided information about the drug in an advertisement. We chose message factors related to ad style and ad content. Regarding channel factors, we examined whether audio or text channels or both were used to present types of key information. For receiver factors, we selected a number of sociodemographic variables with which to describe the portrayed target audience. The destination factors were the consumer behaviors promoted by the advertisements. We then refined the coding dimensions based on past research on DTC advertising (Bell et al., 2000a; Brinberg & Morris, 1987) and a discussion of ad features in a health communications guide from the National Cancer Institute—that is, use of “slice of life,” testimonial, and demonstration categories (Office of Cancer Communications, 1989). We pretested the coding dimensions with a pilot sample of product-specific DTC ads, none of which advertised prescription drugs included in the study sample, and refined the dimensions based on these results.

### **Coding Procedure**

Two trained coders independently completed the protocol for each of the 23 ads in the study sample and discussed any discrepant codes to reach consensus. We conducted the analysis using SPSS 10.1 for Windows (Chicago, IL) based on the consensus codes.

We calculated kappa values for the 102 categorical variables to assess intercoder agreement (Everitt & Hay, 1992). Sixty-five variables had kappa values of 1.0, indicating complete agreement between coders; 35 had values between 0.75 and 0.99, indicating excellent agreement (SPSS Inc., 1999). One variable (whether the risk information was presented by a different announcer than the rest of the ad) had a kappa value of 0.73, falling just below the range of excellent agreement. The final variable (whether risk information was presented in a continuous section) had a kappa value of 0.59, which was statistically significant, but in the fair to good agreement range (SPSS Inc., 1999). Intercoder agreement was high for four continuous variables, with Spearman's rho correlations of 0.92–0.96 (all  $p < 0.01$ ). In sum, the consensus values presented in the next section are based on high levels of agreement between the two independent coders.

## **RESULTS**

The advertisements in the sample varied in length: 17 (74%) were 60 seconds, 3 (13%) were 45 seconds, and 3 (13%) were 30 seconds. Only 7 ads (30%) clearly identified the drug's manufacturer, 14 (61%) did not identify a manufacturer, and the remaining 2 ads (9%) included an unreadable manufacturer's name or logo.

In this section, we present key results organized into three categories: (1) results related to the presentation of risk and benefit information in the ads; (2) results related to adequate provision for dissemination of detailed product information; and (3) results describing the educational content of the ads.

### ***Presentation of Risk and Benefit Information***

#### ***Fact Density***

We calculated the number of facts given about a drug's benefits and risks in the ads, including repetitions of a fact in the count. The ads provided a mean of six facts about drug benefits (range 2–12), conveyed in a mean time of 10 seconds (range 4–27 seconds). The mean number of benefit facts given per second was 0.54 (range 0.27–0.90). The ads presented a mean of 10 risk facts (range 2–19) in an average time of 14 seconds (range 3–23 seconds). The mean number of risk facts given per second was 0.78 (range 0.50–1.33). In 21 ads (91%), the number of benefit facts per second was less than the number of risk facts per second (mean ratio of benefit facts/second to risk facts/second = 0.72; range 0.27–1.22). This ratio indicated that, on average, viewers had more time to absorb benefit facts than risk facts.

#### ***Presentation of Risk Information***

We examined a number of different aspects of the presentation of risk information: (1) whether risk information was presented in one continuous segment; (2) whether risk information was set off by use of a different announcer or a change in speed, tone, or volume; (3) channel in which risk information was given; (4) type of side effect information provided; and (5) text messages and visual images shown during the risk information segments.

**TABLE 1** Presentation of Risk Information in 23 DTC Television Prescription Drug Advertisements

Presentation technique	Number of ads (%) <sup>*</sup>
Risk information in one continuous segment	19 (83)
Risk information set off by:	
Speed change	2 (9)
Tone change	2 (9)
Volume change	0 (0)
Different announcer	2 (9)

<sup>\*</sup>This table includes all relevant presentation techniques in each ad.

Nineteen of the ads (83%) presented the risk information in one continuous section, rather than interspersed throughout the ad, as shown in Table 1. The section conveying risk information generally was not set off from other sections by use of a different announcer or a change in speed, tone, or volume. Only two ads (9%) used a unique announcer for the risk information. Two ads (9%) had a change in speed, 2 (9%) had a change in tone, and none had a change in volume. Twenty-one ads (91%) gave risk information only in the audio channel; the remaining 2 ads (9%) used both audio and text.

Table 2 shows the types of information included in the ads regarding side effect severity and frequency. Fifteen ads (65%) conveyed some information about the severity of at least one side effect (e.g., “serious,” “mild”). Thirteen ads (57%) provided some information about side effect frequency using qualitative terms (e.g., “low incidence,” “most people”), while only 1 ad (4%) used quantitative terms (e.g., “one out of ten”). Two ads (9%) compared the frequency of at least one side effect with the side effect frequency of another drug or a placebo.

We also assessed the text messages and visual images shown during the presentation of risk information. Twenty-two ads (96%) gave text references to at least one source of product information (e.g., a DTC print ad). Nine ads (39%) included a text statement urging viewers to seek more information. Twenty-one ads (91%) showed positive or neutral visual images during the presentation of risk information; none showed negative images. Ad images were coded as positive or neutral if they were not clearly negative (e.g., characters shown being angry or sad).

**TABLE 2** Type of Side Effect Information Conveyed in 23 DTC Television Prescription Drug Advertisements

Type of information	Number of ads (%) <sup>*</sup>
Side effect severity	15 (65)
Side effect frequency	
Qualitative terms	13 (57)
Comparative terms	2 (9)
Quantitative terms	1 (4)

<sup>\*</sup>This table includes all types of side effect frequency and severity information found in each ad.

**TABLE 3** Types of Information Conveyed Through Audio and Text Channels in 23 DTC Television Prescription Drug Advertisements

Type of information	Number of ads (%)*
DTC print ad reference	
Text	23 (100)
Website address	
Text	23 (100)
Toll-free number	
Text	23 (100)
Variations in effectiveness	
Audio	1 (4)
Text	7 (30)

\*This table includes all relevant information types in each ad.

### ***Adequate Provision***

The ads consistently gave different types of information in the audio and text channels (see Table 3). All of the ads provided complete references to additional sources of product information (e.g., website address) exclusively in text. Limited information about these sources was sometimes given in audio as well, but the audio information by itself was insufficient for viewers to be able to locate the sources.

### ***Educational Content***

#### ***Use of Medical Terminology***

In assessing the use of medical versus lay terminology to express medical ideas in the ads, coders judged words such as “placebo” and “cardiac” to be medical terms, but “sugar pill” and “heart” to be lay terms. As shown in Table 4, 16 ads (70%) used a combination of lay and medical terminology; the remaining 7 ads (30%) used only lay terms. None of the ads used exclusively medical terminology to convey medical ideas.

#### ***Effectiveness and Indication Information***

A majority of the ads did not provide effectiveness information or give information to assist undiagnosed individuals in learning that they might be at risk for a particular condition. Fifteen ads (65%) did not provide any information about variations in drug effectiveness across individuals, as shown in Table 3. Of the 8 ads (34%) that did give such information, 1 ad (4%) presented the information in audio and 7 ads (30%) in text.

**TABLE 4** Use of Medical and Lay Terminology to Convey Medical Ideas in 23 DTC Television Prescription Drug Advertisements

Terminology	Number of ads (%)
Medical terms only	0 (0)
Medical and lay terms	16 (70)
Lay terms only	7 (30)

Seven ads (30%) provided information to help undiagnosed individuals learn that they might be at risk for the indication (e.g., symptoms or risk factors), but 16 ads (70%) did not.

### ***Information-Seeking Behaviors Encouraged by Ads***

All of the ads included at least one statement that directed consumers to seek more information. Twenty ads (87%) directed consumers to seek information about the advertised drug (see Table 5). Nineteen of these ads specified physicians as information sources, while 2 ads referred to pharmacists. One ad (4%) directed consumers to seek more information about the indication but it did not specify a potential information source. Thirteen ads (57%) contained a vague, generic statement that consumers should seek “more information,” but they did not specify the type of information to be sought.

### ***Difficult-to-Read Print***

Nineteen ads (83%) contained at least some text that was judged difficult to read (e.g., too small, inadequate contrast with background, or on screen too briefly for coders to read). The most common content of this difficult-to-read text was the generic name of the drug, dosage information, print on a portrayed prescription container, and the manufacturer’s name.

### ***Information Source***

We examined whether each source of information about a prescription drug in an ad was a health care professional, a layperson, a celebrity, or an anonymous voiceover. We found that an anonymous voiceover announcer gave at least some information about the advertised drug in all 23 ads (see Table 6). In 5 ads (22%), a physician provided some information about the drug; no ad portrayed a nurse or pharmacist presenting drug information. In 7 ads (30%), a layperson provided some information about the advertised drug; 6 of these ads had a person with the indication as an information source, and the remaining ad did not identify the spokesperson.

**TABLE 5** Statements Advising Additional Information Seeking in 23 DTC Television Prescription Drug Advertisements

Type of information	Number of ads (%)*
More information (general statement)	13 (57)
Potential sources	
Doctor/physician	12 (52)
Pharmacist	3 (13)
Other professional	2 (9)
Nurse	0 (0)
More information about advertised drug	20 (87)
Potential sources	
Doctor/physician	19 (83)
Pharmacist	2 (9)
Other professional	1 (4)
Nurse	0 (0)
More information about indication	1 (4)

\*This table includes all statements regarding information seeking in each ad.

**TABLE 6** Sources of Information About Advertised Prescription Drugs in 23 DTC Television Advertisements

Source of information	Number of ads (%)*
Anonymous voice	23 (100)
Celebrity	0 (0)
Professional	
Doctor/physician	5 (22)
Nurse/pharmacist/other medical expert	0 (0)
Lay	
Person with medical condition	6 (26)
Spokesperson	1 (4)
Family member/friend	0 (0)

\*This table includes all sources of information about advertised drug in each ad.

### *Use of Story Narrative*

We assessed whether the ads had story sections, and, if so, what information was given in such sections. In 15 ads (65%), at least some part of the ad was a story with matched audio and visual components (see Table 7). Background visuals with an unmatched audio component did not meet this criterion. Categorizing story sections as dramatizations or testimonials, we found that parts of 5 ads (22%) were dramatizations, while parts of 11 ads (48%) were testimonials. The story sections in 8 ads (35%) contained some information about the advertised drugs, 7 (30%) using a testimonial and 1 (4%) using a dramatization. Six ads (26%) gave a demonstration of the drug's action using visual diagrams; none of the demonstrations was contained in a story section.

### **Discussion**

We examined the characteristics of 23 product-specific DTC television advertisements in an exploratory content analysis. In this section, we discuss the implications of our findings for the fair balance and adequate provision requirements. The FDA requires pharmaceutical companies to submit all prescription drug advertisements for review upon dissemination to the public, and some sponsors voluntarily submit draft materials for

**TABLE 7** Use of Story Sections in 23 DTC Television Prescription Drug Advertisements

Style component	Number of ads (%) *
Story section	15 (65)
Testimonial	11 (48)
Dramatization	5 (22)
Story section that provided information about drug	8 (35)
Testimonial	7 (30)
Dramatization	1 (4)

\*This table includes all story sections found in each ad.

review (Gahart, Duhamel, Dievler, & Price, 2003; Woodcock, 2003). The FDA reviews all DTC broadcast advertisements (Gahart et al., 2003), although the U.S. General Accounting Office recently has identified some problems with FDA oversight of DTC advertising (U.S. General Accounting Office, 2002). All of the advertisements assessed in this study were therefore at a minimum reviewed by the FDA upon first being broadcast to the public. We identified a number of potentially problematic features of the advertisements, however, which have implications for the FDA requirements.

A number of our findings speak to the issue of fair balance in the presentation of risks and benefits. We found that most of the ads gave consumers somewhat more time to absorb facts about benefits than those about risks. If statements about benefits are more fully explicated than those about risks, fair balance might not be achieved. We did not code for the use of context in risk and benefit statements in this study. Based on observations made by the coders during the coding process, however, we propose that at least some risk statements in the ads lacked important contextual information. For example, with a statement such as "Tell your doctor what other medications you are taking," a consumer might not understand the unspoken contextual information that other medications may interact with the advertised drug and cause adverse effects. The use of contextual information in risk versus benefit statements is an important area for further study.

For the significant proportion of consumers with limited literacy skills, assumed contextual knowledge might be particularly problematic, because such consumers may have lower levels of background information resulting from a lifetime of limited reading (Baker, Williams, Parker, & Nurss, 1996). In addition, a majority of the ads used both medical and lay terms to convey medical ideas, suggesting that consumer-friendly language was not used to communicate all of the key information in the ads, as has been urged by the FDA (U.S. FDA, 1999). Because individuals with limited literacy skills might have limited health-related vocabularies in addition to more limited background knowledge (Baker et al., 1996; Cunningham & Stanovich, 1998; Mayeaux et al., 1996), understanding of medical terms should not be assumed.

Of note, the FDA has commented that it monitors DTC advertising to "help ensure that adequate contextual and risk information, presented in understandable language, is included to fulfill the requirement for fair balance" (Ostrove, 2001). The FDA has not yet addressed how the literacy skill levels of U.S. adults are taken into account in making such a determination. A more detailed examination of DTC television advertisements is necessary to ensure that absence of contextual information or use of medical terminology does not obscure important risk information for consumers, and particularly for those millions of consumers with limited literacy skills. While a few studies have tested comprehension of DTC advertisements (Kaiser Family Foundation, 2001; Schommer et al., 1998), others have instead asked consumers to report the information topics they recalled being included (Aikin, 2002). Careful examination of consumer comprehension of DTC television advertisements, particularly content with difficult vocabulary or assumed background knowledge, is a high priority area for future research.

Another of our findings with implications for fair balance is that most of the ads presented risk information in one continuous segment of the ad, rather than interspersing the information throughout the ad. Studies conducted by the FDA in the 1980s showed that consumers rated ads in which risk information was given in one continuous paragraph by a different announcer as emphasizing risks to a lesser extent than ads in which the information was more integrated throughout the ad (Morris, Brinberg, Klimberg, Millstein, & Rivera, 1986). Further research is needed to assess how presenting risk information in one continuous segment with the same announcer affects comprehension

and risk perception. We additionally found that only positive or neutral visual images were shown during the presentation of risk information. A closer examination of the visual images shown in this section of the ad is warranted. An ad with contradictory visual and audio messages that minimizes the risk information compared with the benefits information might not have fair balance (Reeves, 1998). On the other hand, our findings that most ads did not use techniques such as changes in speed, tone, or volume to set off the risk information section do suggest that these aspects of information presentation are more balanced.

With respect to the adequate provision requirement, complete references to additional sources of product information (i.e., websites, DTC print ads, and toll-free numbers) were presented exclusively in text. This might not be optimal for individuals with limited literacy skills and may be problematic for many consumers. A Kaiser Family Foundation (2001) study found that most respondents in a nationally representative sample were not able to recall many of the sources of additional product information cited in three DTC television advertisements. These results and our findings call into question whether “adequate provision” is really being made for dissemination of more detailed information about the prescription drugs in DTC television advertisements.

Our findings also call into question the claims of DTC advertising proponents regarding the educational purpose of DTC television advertisements. Only a minority of the ads we examined informed consumers that the advertised drugs might not work for everyone, which is consistent with an earlier study of DTC print ads that found that some ads inappropriately implied complete effectiveness for everyone able to take the advertised drug (*Consumer Reports*, 1996). The majority of the ads in our sample did not provide any information about risk factors or symptoms that might raise awareness among undiagnosed individuals. In a study of DTC magazine advertisements, Bell and colleagues (2000b) similarly found that many ads only provided superficial coverage of medical conditions and their treatments. In addition, in our study, the vast majority of the ads directed consumers to talk to their doctors about the advertised drugs, but only one directed consumers to seek information about the portrayed indication. More emphasis is placed in these advertisements on the promotional purpose of selling prescription drugs than on the purported intent of educating consumers about medical conditions.

Our results suggest a number of areas for future research in addition to those raised above. For example, we found that most ads gave drug information outside of a story narrative. Instead, the source of information about an advertised drug was usually an anonymous voiceover announcer. Further research should evaluate whether this is an effective method of imparting information about prescription drugs in television advertising. It is possible, for example, that the more conversational language generally used in a story narrative might more effectively enhance consumers' knowledge.

The strengths and limitations of this study should be considered in interpreting the results. This study was a descriptive content analysis and therefore could not test whether certain ad characteristics actually affected consumer comprehension. The sample for this content analysis was a convenience sample drawn from broadcasts on network television, and the results therefore might not be generalizable to other populations of DTC advertisements. Future studies could examine, for example, the characteristics of DTC advertisements shown on cable television channels. In addition, we gathered the sample of ads examined here in a 2-month period. It is possible that the characteristics of these ads may change over time, so it will be necessary to follow longitudinal trends in this advertising.

This study is the first to examine DTC television ads systematically. Our results point to a number of specific characteristics of these advertisements with implications for the

fair balance and adequate provision requirements. We have suggested areas for future research and highlighted features of the ads that could be changed to enhance their educational potential. Given the increasing prevalence of DTC television advertising, we need to ensure that consumers actually can learn both risk and benefit information from these advertisements.

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**APPENDIX A** The 23 advertised prescription drugs and 22 indications in the content analysis sample of product-specific DTC television advertisements.

Brand name (manufacturer)	Indication
Actonel (Aventis & Proctor and Gamble)	Osteoporosis/bone strength
Allegra (Aventis)	Allergies
Ambien (Searle)	Insomnia/sleep difficulties
Detrol (Pharmacia & Upjohn)	Overactive bladder
Diflucan (Pfizer)	Yeast infection
Imitrex (Glaxo Wellcome)	Migraine headaches
Lamisil (Novartis)	Nail infection/nail fungus
Meridia (Knoll Pharmaceutical Co.)	Overweight/weight loss
Nasacort AQ (Aventis)	Allergies
Ortho Tri-cyclen (Ortho McNeil)	Birth control
Paxil (Smith-Kline Beecham)	Social anxiety disorder
Prevacid (TAP Pharmaceuticals)	Acid reflux
Procrit (Ortho Biotech)	Anemia related to chemotherapy
Remicade (Centocor)	Rheumatoid arthritis
Sarafem (Eli Lilly and Co.)	Premenstrual dysphoric disorder (PMDD)
Serevent (GlaxoWellcome)	Chronic obstructive pulmonary disorder (COPD)
Singulair (Merck)	Asthma
Tamiflu (Roche)	Flu/influenza
Valtrex (Glaxo Wellcome)	Genital herpes
Vaniqa (Bristol-Myers Squibb)	Facial hair growth
Vioxx (Merck)	Osteoarthritis
Wellbutrin SR (GlaxoSmithkline)	Depression
Zocor (Merck)	High cholesterol/heart disease